

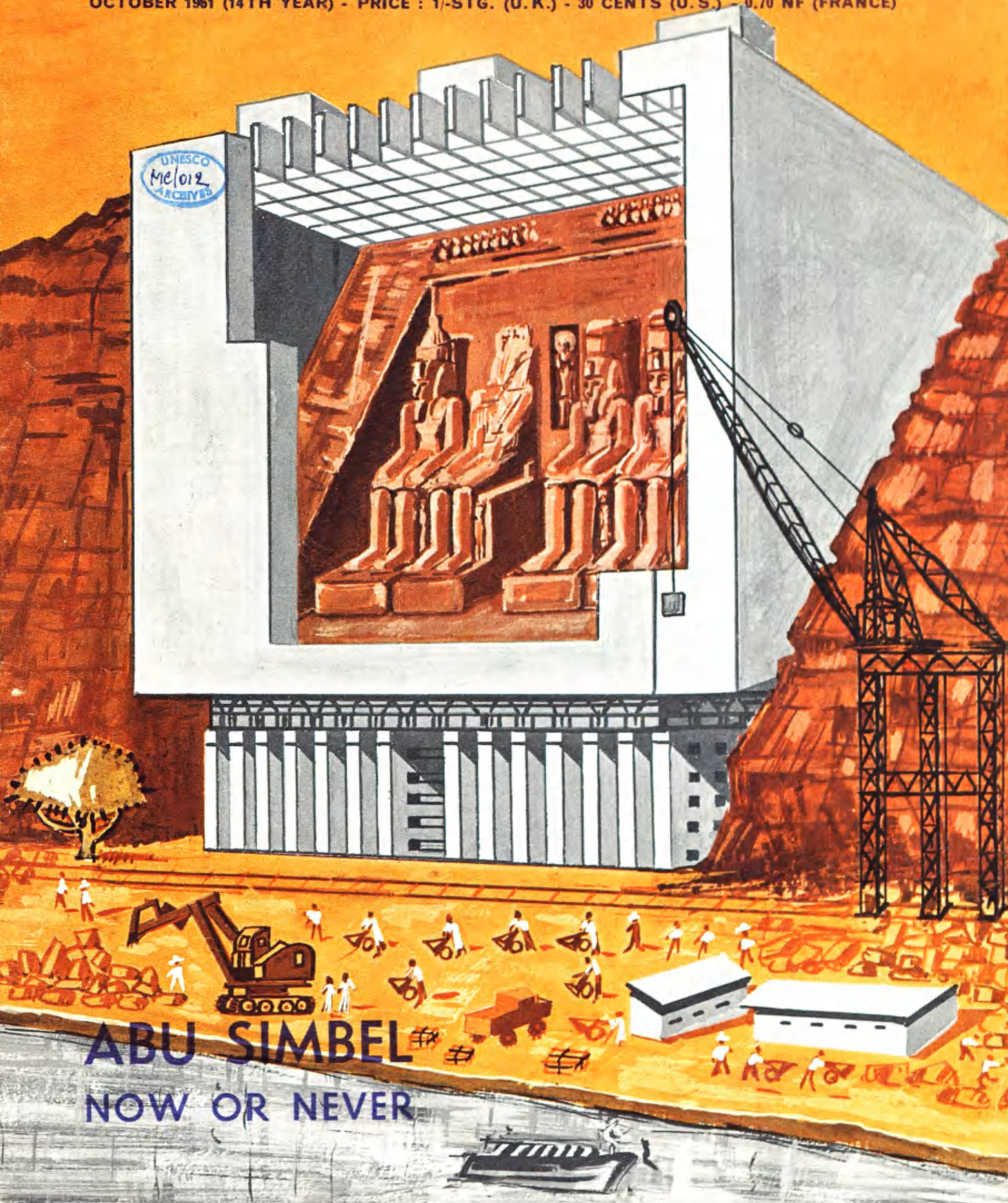
A WINDOW OPEN ON THE WORLD

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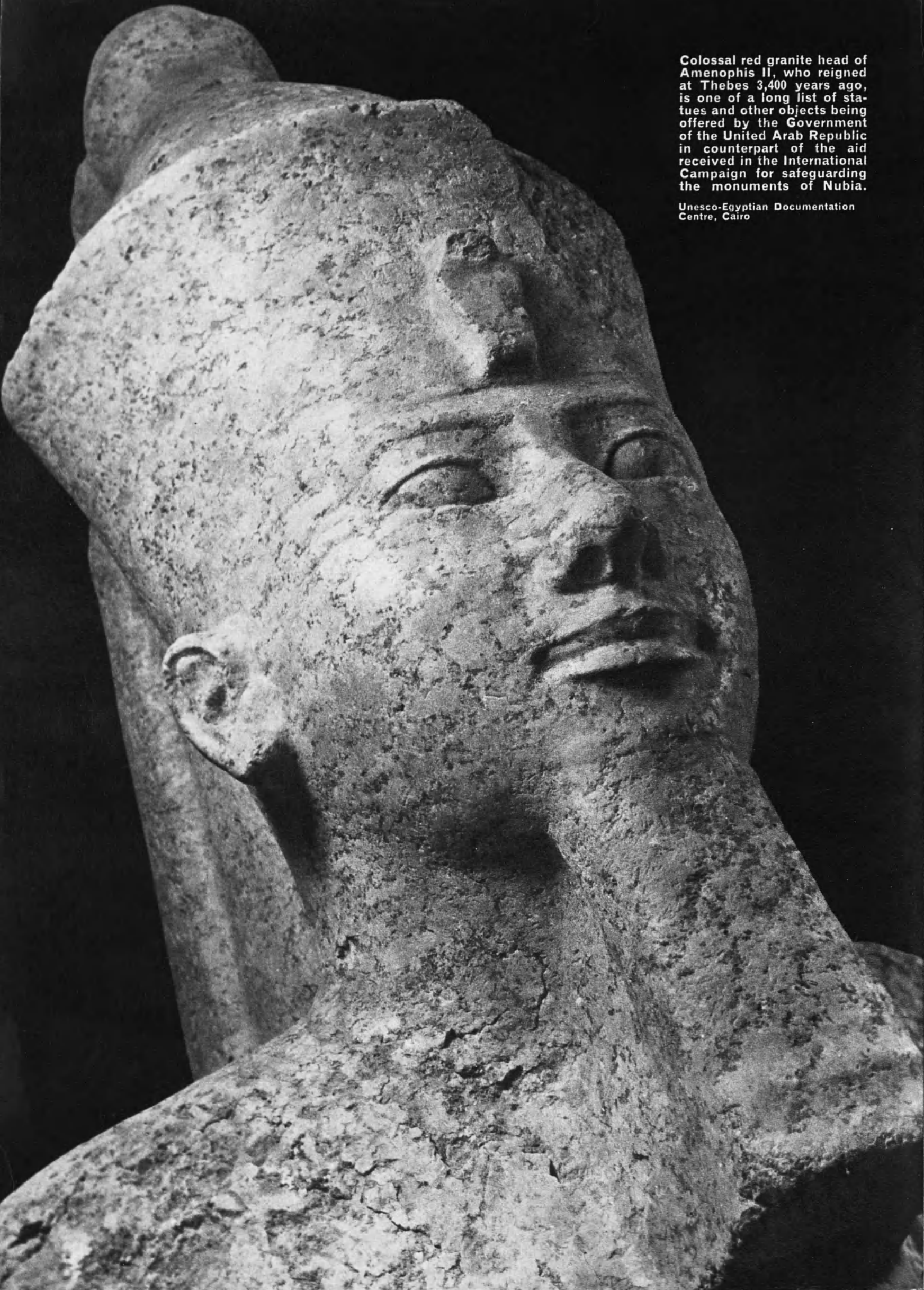


Courier

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ABU SIMBEL
NOW OR NEVER



Colossal red granite head of Amenophis II, who reigned at Thebes 3,400 years ago, is one of a long list of statues and other objects being offered by the Government of the United Arab Republic in counterpart of the aid received in the International Campaign for safeguarding the monuments of Nubia.

Unesco-Egyptian Documentation Centre, Cairo

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Unesco, Place de Fontenoy, Paris 7*, France

Editor-in-Chief
Sandy Koffler

Assistant Editor
Gordon Behrens

Associate Editors
English Edition : Ronald Fenton
French Edition : Jane Albert Hesse
Spanish Edition : Arturo Despouey
Russian Edition : Veniamin Matchavariani (Moscow)
German Edition : Hans Rieben (Berne)
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Layout & Design
Robert Jacquemin

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All correspondence should be addressed to the Editor-in-Chief.

ABU SIMBEL NOW OR NEVER

THE fate of Abu Simbel is now in the balance. UNESCO has addressed a "now or never" appeal to its 100 member nations for voluntary contributions to save the two colossal temples of Abu Simbel from destruction under 200 feet of water as a result of the construction of the High Dam at Aswan. The temples, hewn out of the solid mountain rock in the 13th century B.C., are considered to be among the great architectural glories of Pharaonic art.

Before the end of October of this year, UNESCO's Executive Board will be in a position to know whether these testimonials of a former civilization are to be considered irreparably lost to mankind, or whether a joint international effort will save them from disaster.

The appeal is contained in a special message on the present state of the Nubian International Campaign to save the treasures of Nubia, addressed on August 4 by the Acting Director-General of UNESCO, Mr. René Maheu, to all of UNESCO's member states. It calls for voluntary contributions totalling \$67,000,000 to save not only Abu Simbel but other temples and monuments in Egypt and the Sudan which are threatened by the future Aswan Dam when in a few years' time it backs up the waters of the Nile in a 300-mile long artificial lake. UNESCO has asked all countries to guarantee a contribution, extending over the next seven to nine years, in the same proportion as their present assessment for the UNESCO budget.

The two temples of Abu Simbel are to be preserved by what has been described as "the most daring engineering project of modern times." They will be sliced from the mountainside into which they were built three thousand years ago, encased in concrete boxes, and raised by giant jacks over two hundred feet. (See story page 10).

The call to UNESCO's 100 member States was made on the recommendation of the International Action Committee which is advising and helping the Director-General of UNESCO in fund-raising. The Action Committee, made up of representatives from all continents, met in Paris last June to examine the present state of the campaign. They found that the rescue operations—except the Abu Simbel project—are now almost assured, and stressed the urgency of obtaining the funds needed if the two temples are to be saved in time.

The overall contract for Abu Simbel must be signed by January 1, 1962. Before then, preparatory work must get under way, and the main work must begin not later than May 1962.

Before the end of October 1961, enough money must therefore be guaranteed from international sources over the next seven to nine years to enable UNESCO's Executive Board to give the United Arab Republic the go-ahead signal. It is estimated that \$20,000,000 will be needed for the preparatory operations and the first payments to the contractors in 1962, and a further \$13,000,000 in 1963.

President Gamal Abdel Nasser in a statement made on 4 June 20 of this year described Abu Simbel as the "most important relic of civilization in Nubia... this undertaking represents the most serious phase in the salvaging of the

monuments of Nubia, a phase that calls for collective effort."

The cost of the entire Nubian rescue operations (exclusive of archaeological and prehistorical excavations) has been estimated at \$87,000,000. This will provide for the dismantling and transfer of 23 temples, tombs, early Christian churches and rock-hewn chapels in the U.A.R. and the Sudan (estimated cost \$10 million); the preservation of the temple-group on the isle of Philae (\$6 million); and the preservation of the temples of Abu Simbel (\$70 million).

Four miles south of the present Aswan Dam in central Egypt, the new High Dam (Sadd el Aali) is being built across the Nile by the United Arab Republic with Soviet aid. It will contain the river above that point and form a gigantic artificial lake drowning the Nile valley of Nubia in both Egypt and the Sudan.

For Egypt the new lake will mean the beginning of an era of great regeneration. It will increase the total food production of the country by nearly one half; some 2,500,000 acres of desert will be brought under cultivation, and an additional 750,000 acres now flooded will be reclaimed. Egypt's hydroelectric output will be increased by the dam something like ten times.

The new dam is an economic necessity for Egypt. But there remains the fact that everything within the Nubian lake area will be obliterated by 1968. In 1959, the Governments of the U.A.R. and the Sudan turned to UNESCO for help to save the temples and monuments menaced by the impending flood in both countries. On March 8, 1960, UNESCO's Director-General, Mr. Vittorino Veronese, launched the now famous International Campaign to save the treasures of Nubia (1).

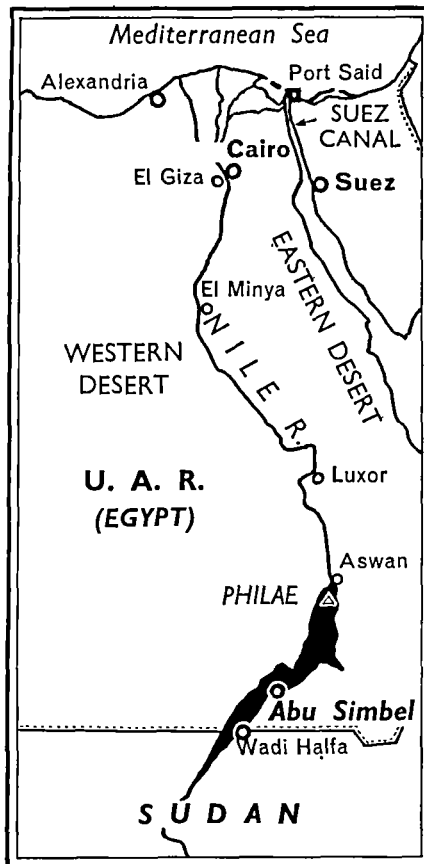
The response thus far has been both generous and heartening. As the President of the United States recently said, it is "an international effort which has captured the imagination and sympathy of people throughout the world."

Support has come from governments, from private and public organizations and from private citizens in every part of the world. Even children from different countries have organized collections to help. The world's press, radio, television and cinema have all joined

voluntarily to help make the campaign a success. In some 20 countries national committees have been formed, made up of noted archaeologists and other leaders in the fields of science and the arts, as well as important officials, businessmen and members of civic groups.

The United Arab Republic has guaranteed a sum of \$20,000,000 for Abu Simbel. The United States Government has offered (subject to Congressional approval) \$10,000,000—\$6,000,000 to cover the costs of saving the temples of Philae, \$2,500,000 for the removal of certain temples, \$1,500,000 for archaeological expeditions and research in Nubia.

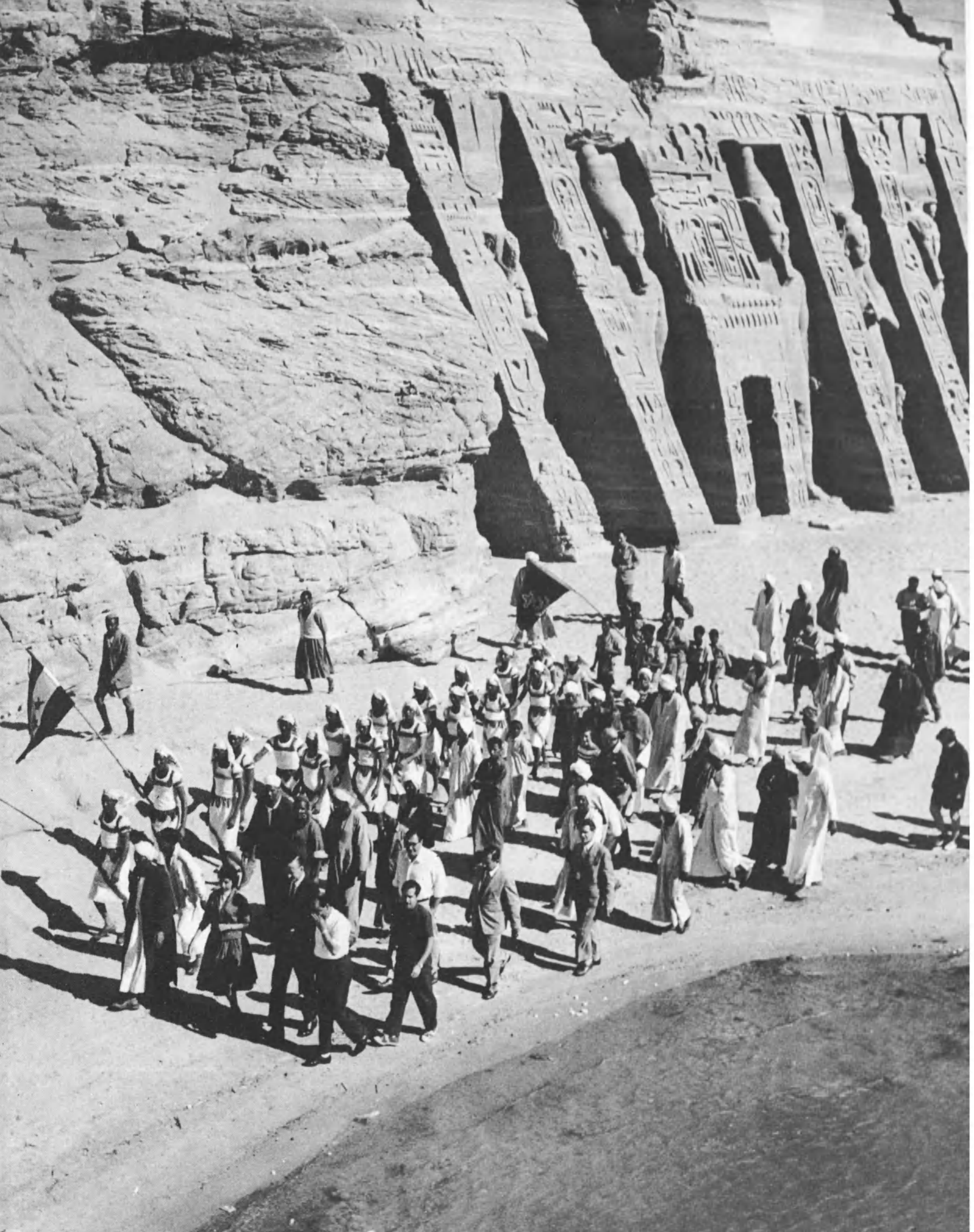
Announcing the United Arab Republic's contribution, President Nasser declared last March:



Unesco Courier Map

This map of the Nile valley shows the vast artificial lake (shaded) which will be formed when the new Aswan High Dam is completed in 1968. Its waters will submerge numerous historical treasures and monuments in Nubia in both Egypt and the Sudan.

(1) See Unesco Courier, February, May and September 1960.



© Almasy, Paris

COSTUMES OF ANCIENT EGYPT are worn by a folklore group welcoming Unesco specialists and journalists from all parts of the world who visited Nubia last year at the invitation of the United Arab Republic. In the background, their feet separated from the lapping waters of the Nile by only a narrow stretch of sand, stand the mighty figures flanking the entrance to the Temple which is dedicated to Queen Nefertari and the Goddess Hathor at Abu Simbel. 5

NOW OR NEVER

"The world's conscience has now awakened to a deep awareness of the importance of safeguarding the monuments of Nubia in response to the international appeal launched by UNESCO on March 8, 1960. Through this appeal UNESCO has sought to arouse the energies and goodwill of all peoples in a cause deeply rooted in the ancient history of civilization and symbolic of the hopes of mankind.

"We pin our hopes on the High Dam for the implementation of our plans of economic development; but likewise we pin our hopes on the preservation of the Nubian treasures in order to keep alive monuments which are not only dear to our hearts—we being their guardian—but dear to the whole world which believes that the ancient and the new components of human culture should blend in one harmonious whole.

"The preservation of the legacy of mankind is no less important than the construction of dams, the erection of factories and the greater prosperity of the people..

"UNESCO has contributed much to the creation of this sense of solidarity and to the action undertaken to safeguard the monuments through the facilities and funds it has made available and through the co-operative spirit which has guided the specialists and the groups of scientists who have taken an interest in this unique endeavour.

Reflecting similar sentiments, the President of the Sudan, Ibrahim Abboud, recently reaffirmed his country's responsibility to the rest of the world for the ancient monuments within his borders, ". . . since the history of the Sudan is but a part of the history of mankind."

THE enormous tasks of the campaign were divided into three categories. First there was the urgent job of carrying out systematic surveys and the organization of expeditions to excavate archaeological and prehistoric sites the threatened area of both Egypt and the Sudan.

As André Malraux has said, "Nubia, like Chaldea, belongs to the dawn of our own history." It was the junction point at which the cultures of inner Africa met with the cultures of the Mediterranean world. In the region to be flooded, scientists feel, may well lie some of the important clues to the riddle of man's unknown past. Today, Nubia has become a vast archaeological camp, with almost 30 expeditions at work or about to work.

The second category comprises the dismantling and the removal of ancient temples and other historic monuments to safety beyond the flood area. These operations are now under way and are progressing satisfactorily. The U.A.R. has already removed the three temples of Kertassi, Debod and Taffeh, while the Federal Republic of Germany has offered to assume the task of removing the great temple of Kalabsha, and France the temple of Amada. (See details page 30.)

The last category includes the two most important projects of the campaign—the preservation *in situ* of the temples on the isle of Philae, and the Abu Simbel temples.

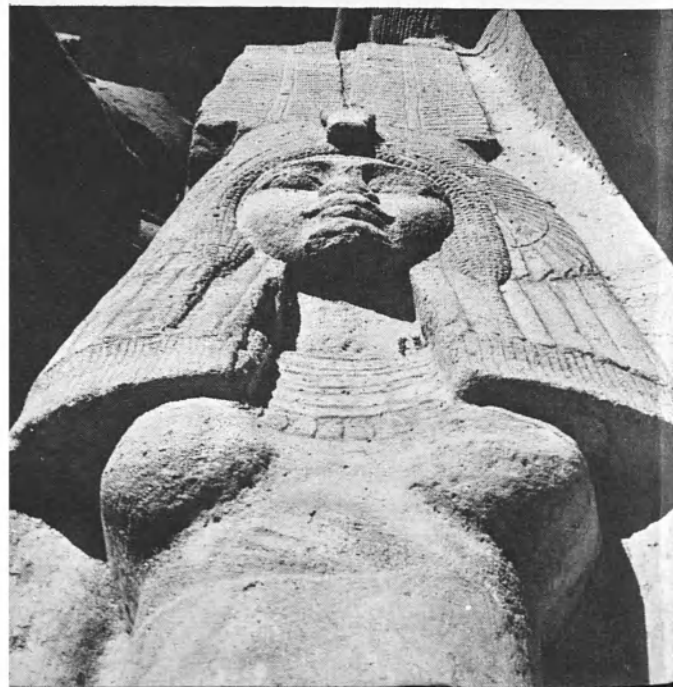
If the United States Congress approves the \$6,000,000 appropriation for Philae recommended by President Kennedy, the future of Philae will be definitely assured. In his message to Congress, Mr. Kennedy stated:

"I consider it to be in the interests of the United States to assist in rescuing these historic remains of a former civilization from destruction—and to join the international effort to conduct exploration and research in the threatened area of Nubia before it is submerged.

"The United States, one of the newest civilizations, has long had a deep regard for the study of past cultures, and a concern for the preservation of man's great achievements of art and thought... I recommend that we now join with other nations through UNESCO in preventing what would otherwise be an irreparable loss to science and the cultural history of mankind."

6 Thus the UNESCO campaign has almost reached its goal —except for the two temples of Abu Simbel. The "now or never" battle to save Abu Simbel will be decided in the next few weeks.

INGENIOUS

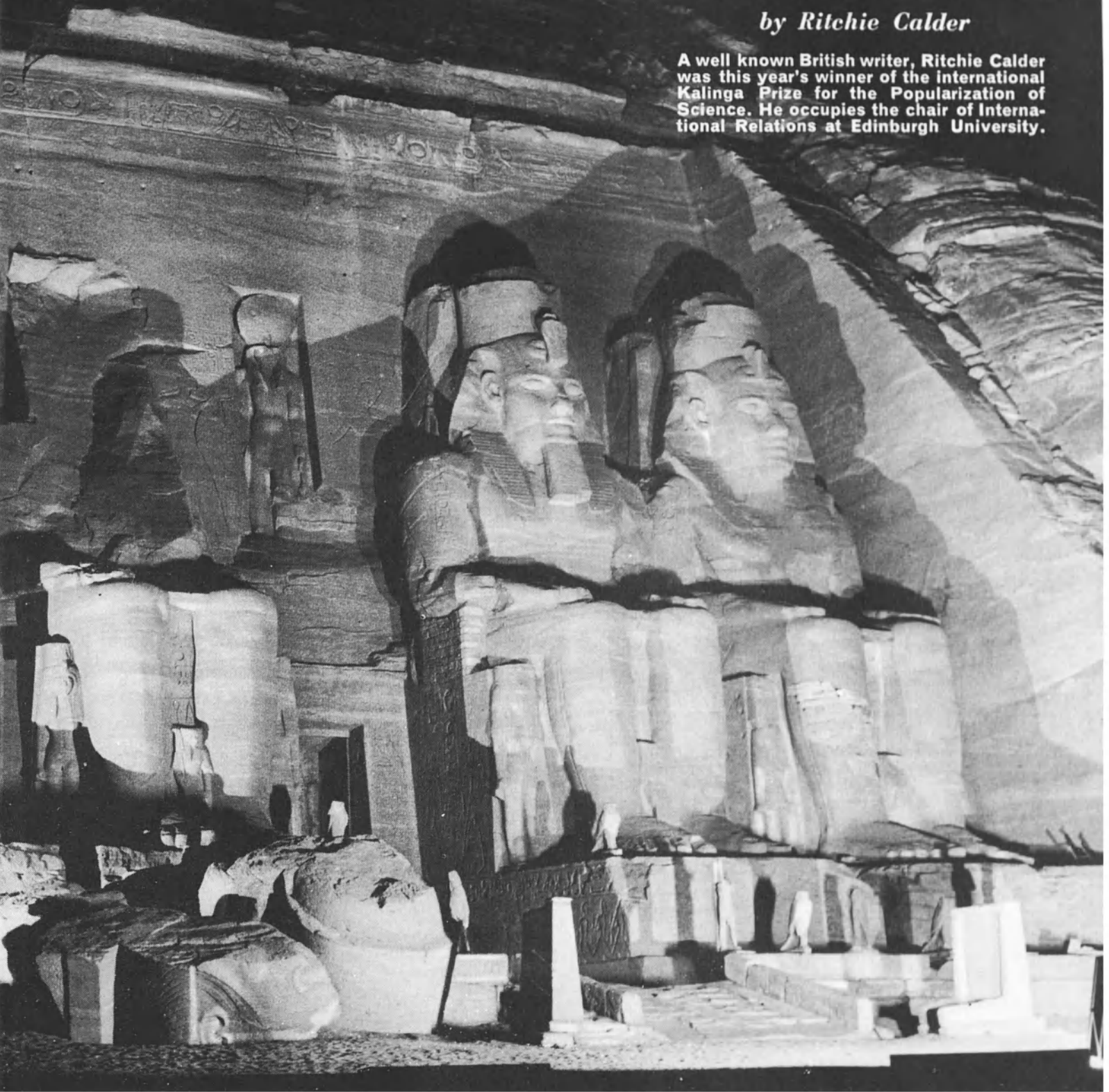


Photos Unesco - Paul Almasy

ENGINEERS OF 3,000 YEARS AGO

by Ritchie Calder

A well known British writer, Ritchie Calder was this year's winner of the International Kalinga Prize for the Popularization of Science. He occupies the chair of International Relations at Edinburgh University.



MASTERPIECE IN PERIL. Built more than 3,000 years ago in the XIXth dynasty of the New Empire, the Great Temple of Abu Simbel is of colossal scale. It measures 108 feet in height, 124 feet in width, and extends 200 feet in depth. On the façade are four colossi of Rameses II (seen here in a striking night photo made by floodlight). They are 67 feet high, their mouths are 42 inches wide and their huge heads are 13 feet from ear to ear (the head of the second colossus disintegrated centuries ago). Left a statue of Queen Nefertari (wife of Rameses II) standing between a pairs of colossi.

1

THE greatness of Egypt is popularly identified with the petrified geometry of the pyramids, those remarkable examples of civil engineering, veritable mountains of masonry. Experts, however, would agree that the sublimation of funerary art, combined with shrewd scientific insight, were the rock temples.

There are great free-standing Egyptian temples, superb in their proportions, in their pillars and their sculptures,

but the architects of these were able to choose the best artificial site, and the masons to select or discard the quarried blocks for their building and ornamentation. A sculptor, carving a statue, would pick the most suitable, most enduring and most flawless stone for his purpose.

The architects and the masons of the rock temples had no such latitude; instead of choosing blocks of stone they had to discover an escarpment or a mountain which would conform to their exacting requirements. Once committed, their artistic ingenuity was hostage to the site.

CONT'D ON NEXT PAGE

ART & SCIENCE CONSPIRED WITH NATURE



Madeleine Pottier

Among the greatest of these temples hewn from the living rock were the Great Temple and the Small Temple of Abu Simbel in which the immortality of the Gods and of Rameses II was embodied in the indestructible rock. They were planned by Seti I but executed in all their grandeur by Rameses II during his prodigious reign of 67 years, from 1300 to 1233 B.C.

Modern geologists who have examined the site of Abu Simbel are unstinted in their tribute to their unknown predecessor (or predecessors) who chose this particular location 3200 years ago.

Thirty miles north of the Second Cataract, on the left bank of the Nile, where the river turns east, were two rocky prominences divided by a gully. Here was a site which met a first elementary requirement: that the temple, dominating the river, face the rising sun.

In the vicinity, the left bank of the valley is steep, a cutting by the river exposing about 400 feet of sandstone cliff, which could have shown the ancient geologists the structure of the rocks. But this evidence was merely superficial.

How did they know, as can be determined nowadays, that there was little or no distortion of those sandstone beds? How did they establish that the interior of the mountain could architecturally house the Great Temple which they were proposing to excavate? How did they satisfy themselves that the consistency of the sandstone would lend itself to the carving of colossi and of the friezes?

How much did they know about the chemistry of minerals and how the elementary granules of the sand were bound together by a cement of iron oxide, which gives the rock its colour-gradations, ranging through all shades from pink to dark mauve? What did they know of the porosity of the rock and the highly solvent power of the Nile water, and hence of the water-table below the mountain, which, when the rocks were exposed to heat, would be pumped upwards by capillary action? This "pumping" would mean the dissolving of minerals in the rocks, a chemical reaction, and the precipitation of salts—all likely to alter the characteristics of the rocks.

The carved immortality of their Pharaoh would depend upon the durability of the rocks they found. How much did they know about weathering? How did they determine from external evidence that the rocks within the mountain would lend themselves to the structural engineering of an ambitious temple such as Rameses would certainly demand? On decisions like these not only the reputations of those ancient geologists and engineers depended but, one would guess, their very lives.

To quote one of the technical reports drawn up by engineering experts last year: "The temples of Abu Simbel are a wonderful achievement. Apart from the importance of the monuments themselves, we are struck with admiration at the deep knowledge of geology which the ancient Egyptians possessed. The presence of hard sandstone banks alternating with softer ones was used to advantage in creating the temples and the statues. The more compact layers were chosen for the ceilings of the temples and inner rooms, or to support the greater weight of the sitting statues. They also made the most of the fissures in the rock: the façades of the two temples run parallel to the more fissured lines."

8 On what we would nowadays call the "feasibility report," the ancients went ahead with the construction of the

two temples—some 300 feet apart—overhanging the banks of the Nile. But they did something more; they contrived the design of the temples to fit in to the natural landscape so that art and science conspired with nature to make Abu Simbel one of the wonders of the world.

The larger of the two rock temples, facing to the east and to the rising sun, has a façade 33 metres (over 107 feet) in height and 38 metres (over 123 feet) in width. It was dedicated by Rameses to Ra-Horakhti, Amon-Ra and Ptah, the most important gods of Egypt. In its proportions and structure it equalled a temple that might have been built on the surface instead of underground.

On entering the underground temple one finds a large hall, or temple court. It is divided into three aisles by quadrangular pillars—eight of them each with a statue of the King 34 feet high. There even remain fragments of colour paintings; and the bas-reliefs covering the walls tell in life-like sculpture the story of his victory over the Hittites and similar battles. The ceiling has paintings of winged vultures and tablets in praise of Rameses.

This gives on to a vestibule, the ceiling of which is supported by four quadrangular pillars adorned with carvings of war exploits and the protector gods.

A narrow passage leads to the inner sanctuary where are seated the statues of the three gods to whom the temple is dedicated, and Rameses himself. And here is seen the purposeful ingenuity of the architects and engineers. Like skilful stage-lighters, they contrived that the rising sun would penetrate 200 feet into the heart of the mountain and illumine the faces of only three of the immortals. The fourth, the god of the Underworld, *Ptah*, on the extreme left remained eternally in darkness. This essential feature of Abu Simbel was one of the things taken into account in deciding how the temple should be finally preserved from the rising waters of the High Dam.

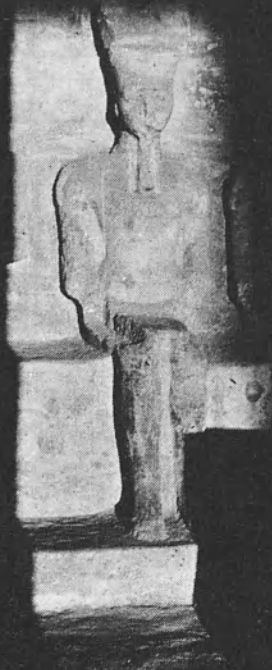
Eight smaller chambers are irregularly disposed on the right and left of the central ones—presumably so that they would not impair the foundations of the main halls—and these were apparently functional parts of the temples, storehouses and treasure chambers, although whatever valuables they may once have contained have long since disappeared.

To Nefertari, his wife, Rameses dedicated the Small Temple, several hundred feet away across a sandy gully. Its façade measures 88 feet in width and 39 feet in height. It is ornamented by six colossal statues, each 33 feet high. They are in two separate groups in each of which the queen stands between figures of the Pharaoh with, at their feet, their sons. One of the pillars states: "The King built this Temple by hewing it from the rock of the hill of the country of Takens."

In the interior of the hill, there is a hall large and low supported by six columns. Three doors lead to the vestibule and through it to a modest sanctuary.

To quote the engineering experts once again: "The inspiration of the Abu Simbel monuments rises above and beyond the traditional conception of the ancient Egyptians, for whom the pyramid was the maximum of architectural perfection, as the only conclusion of a long process tending to geometrical abstraction. What prevails here is the plastic sense of the mass; the monument merges into its environment, the architecture marries with sculpture, and sculpture actually acquires a dominant character in the ensemble."

THE GODS GREET THE SUN AT ABU SIMBEL



At any hour of the day the Great Temple of Abu Simbel is an impressive sight, but at dawn it offers its most breathtaking spectacle. There was nothing haphazard about the choice of its site or in the construction of the multiple galleries and chambers deep in the mountainside. At dawn the purposeful ingenuity of the architects and engineers of ancient Egypt is fully revealed. Like skilful stage-lighters, as the photos on these pages show, they contrived that the rays of the rising sun after first illuminating the pantheon of statues on the façade of the temple (opposite page) would penetrate deep into the interior. Above, from left to right, through the temple portals, the sun bathes the huge Osirian pillars with its golden light and at certain times of the year reaches 200 feet into the heart of the mountain to the inner sanctuary. Here it picks out from the Stygian darkness the seated figures of divinities like Amon, (left) "The God of Thebes". Below, the four immortals seated at the far end of the sanctuary: Ptah, whose statue remains eternally in darkness for he is king of the underworld; Amon, Rameses II and Ra-Horakhti, morning sun god.

Unesco-Van der Haagen



Unesco-Keating

JACKING UP A MOUNTAIN OF STONE

2

THE temples of Abu Simbel are part of mankind's heritage, irreplaceable heirlooms from the culture of 3,200 years ago. Modern needs and modern technology may compel and produce the High Dam of Sadd el Aall but the Present cannot afford to squander the Past. Confronted by the achievements of the makers of Abu Simbel, of the scientists (and they were scientists as we have seen from the testimony of modern geologists); of the craftsmen; and the artists, who were dedicating their work not only to their gods but to posterity, the least that our modern civilization can do is to turn minds and resources to the rescue of their creative handiwork.

As the trustee, for the Future of the Past, UNESCO has intervened. How much of the perishable antiquities, like the great mud brick forts of Nubia, will be explored and their stories deciphered before the waters rise, is a challenge which has been thrown to the archæologists and the conscience of the world.

BUT Abu Simbel is a special case and UNESCO, with the agreement and support of the Government of the United Arab Republic, has taken steps. For the preservation of the Abu Simbel monuments, four proposals were given serious consideration:

1. Raising the temples and surrounding rocks above the level of the waters;
2. Building an earth and rock fill dam, to protect both temples;
3. Building a protective concrete dam in front of each temple;
4. Building a large dome concrete dam, to protect both temples.

Of all these possibilities for preserving the temples from the flood, two schemes remained at the end of 1960. One was a proposal submitted by a French engineering concern, the Bureau d'Etudes André Coyne et Jean Bellier (Paris), to build a rock fill dam to enclose the two temples. The size was planned to allow a clear space in front of the temples but the dam itself would tower above the façades and, among other things, would defeat the ingenuity of those ancient engineers who contrived that the rays of the rising sun would penetrate into the heart of the mountain.

Technical difficulties of water seepage would have meant, in perpetuity, an annual cost of \$370,000 for pumping. The capital cost of the dam construction would be \$82,000,000. Another objection raised was that, with the filling of the High Dam, the water-table of the land around would rise and that, even though enclosed by the



TREASURES CAPTURED ON FILM. The massive structures of Abu Simbel and its figures are completely carved from the solid rock. Impossible to dismantle, they must be moved in one piece as they were built. Their soft red sandstone is particularly vulnerable to dissolution by water. Even a brief submergence would remove completely the colourful paintings which still survive on walls and ceilings. Long before the bold plan to raise the temples out of reach of the invading Nile was proposed every square inch of the great Abu Simbel group was being mi-

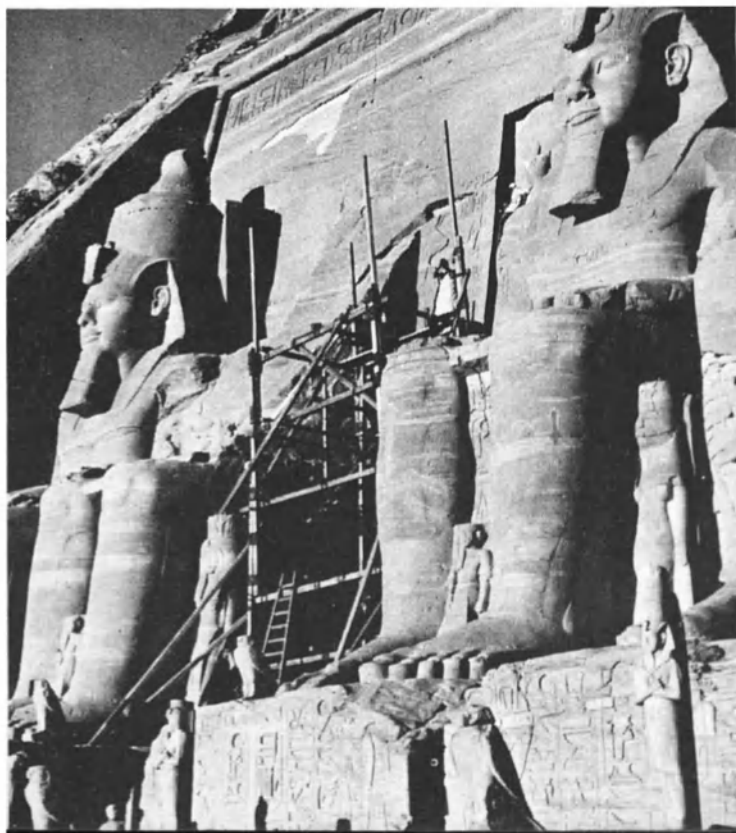


Unesco-Keating



Unesco - Paul Almasy

nutely examined. Black and white and colour photographs, photogrammetric negatives (from which exact models of objects are reconstituted), architects' notes, casts and copies of hieroglyphic texts, graffiti and inscriptions have gradually been amassed. Photos show, above, Jean Jacquet, Swiss architect, working on a survey of the great temple; below left, photographer perched high on an Osirian pillar; below, scaffolding used for making photogrammetric shots between colossi on temple façade. Surveys of Abu Simbel were virtually completed this summer.



Unesco - Paul Almasy

protecting dam, the rocks of the Abu Simbel mountain would become saturated and the seepage would affect the temples imbedded in it.

The second proposal was of a very different kind. Conceived by the Italian architect and archæologist, Piero Gazzola, it was prepared by three Italian civil engineering firms—Italconsult, Impresit and Lodigliani and put forward to UNESCO by the Italian Government in October 1960. This suggested encasing each of the two temples in concrete boxes and raising the rock masses 60 metres (200 feet) above the present level of the waters and reconstructing the original hill landscapes so that the final position of the temples would bear the same relationship to the Nile as it does at present—but on a higher elevation.

In January 1961, a Committee of Experts appointed by UNESCO in conjunction with the Government of the United Arab Republic unanimously recommended the acceptance of the Italian project for lifting the temples. Technical questions were raised and were referred to another committee consisting of experts from Norway and Sweden. They confirmed the feasibility of the Italian scheme and in June 1961 it was accepted by the Government of the United Arab Republic. It will cost \$70,000,000.

The Italian scheme is bold, imaginative and grandiose and has transferred into twentieth-century idiom something of the ancients' massive thinking, which could contemplate the Great Pyramid, with its 2,300,000 separate blocks each weighing 2 1/2 tons; or the Giant Sphinx, 240 feet long and 66 feet tall, hewn out of a left-over rock of the Great Pyramid; or Abu Simbel, the disembowelled mountain itself.

INDEED one might compare this twentieth-century concept to the *ziggurats* of Mesopotamia. These *ziggurats* began as altars on the ground-level, but successive generations of the priesthoods surpassed each other in raising the altars higher and higher, by superimposing one *ziggurat* upon another, producing a man-made mountain with the temple, each time, on top.

At Abu Simbel, the two temples will be lifted separately and each will be supported by a honeycomb of concrete supports, forming two massive pedestals. The lifting will be an engineering feat, raising, in the case of the Great Temple, a wedge of mountain-rock, weighing a quarter of a million tons, with a delicacy of movement never before attempted.

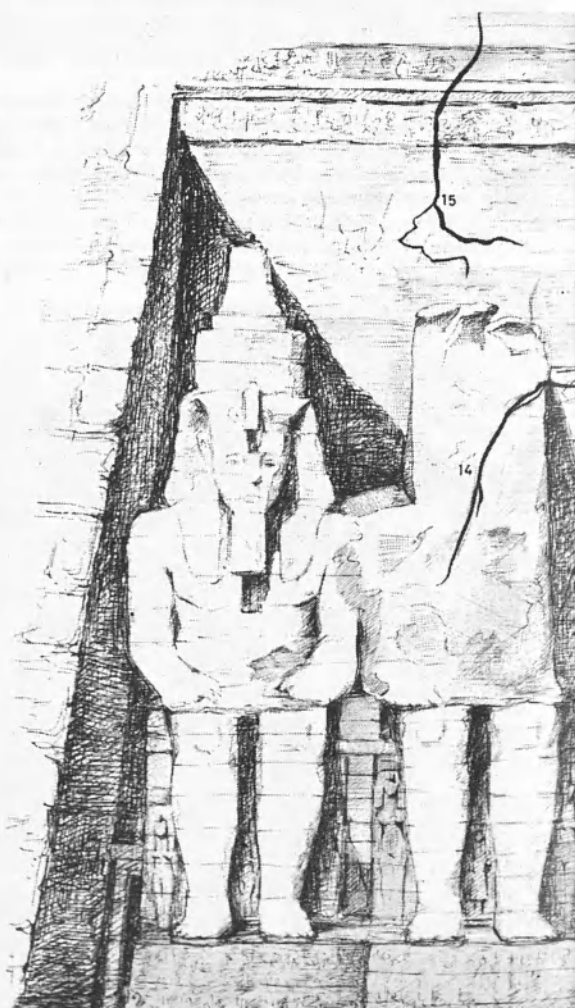
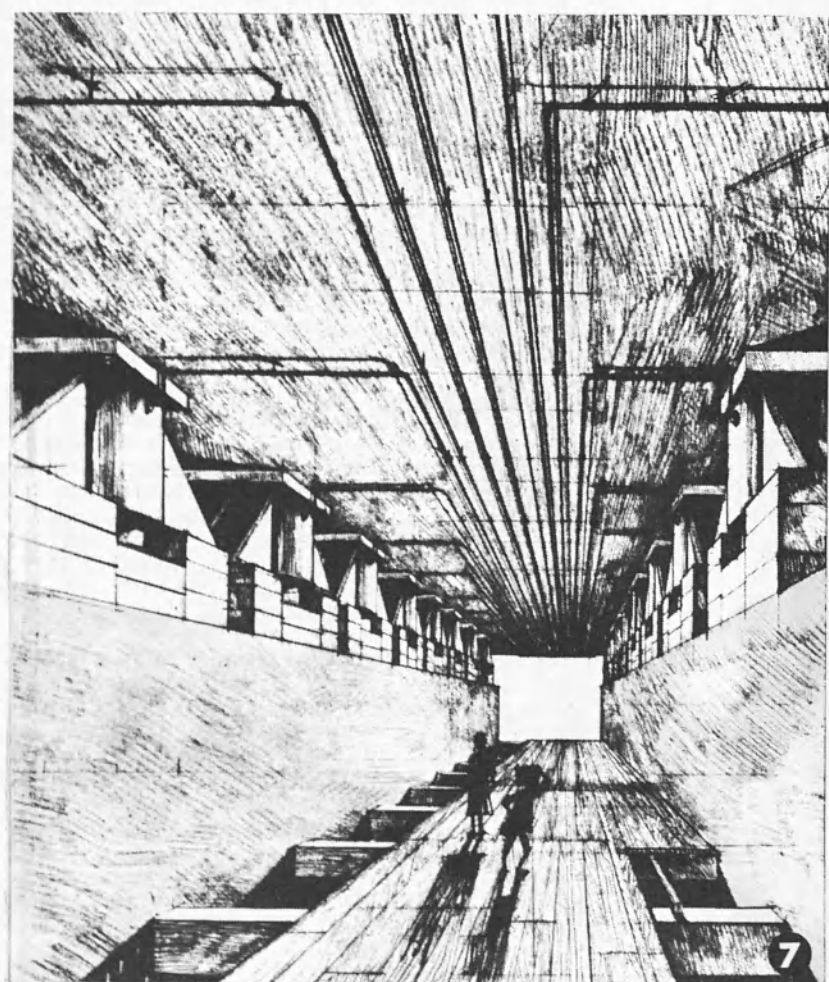
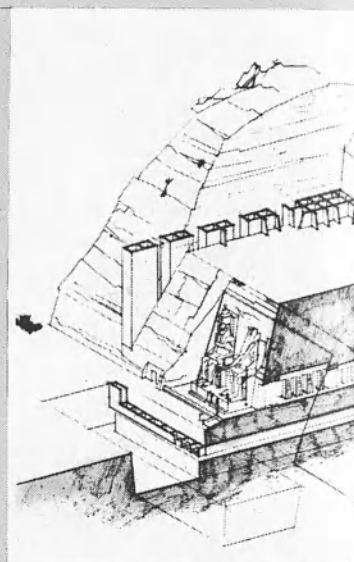
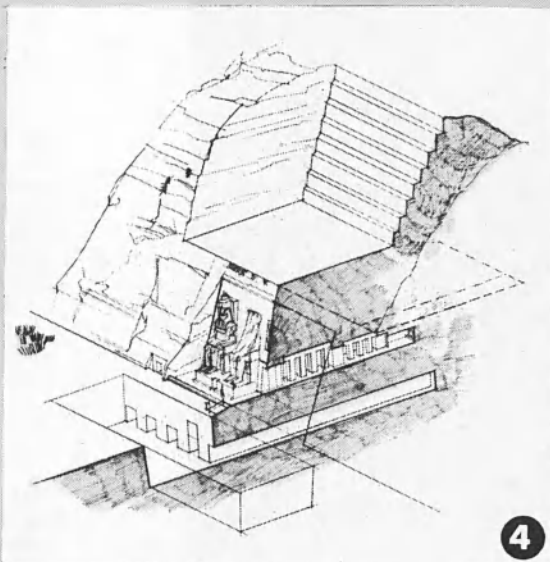
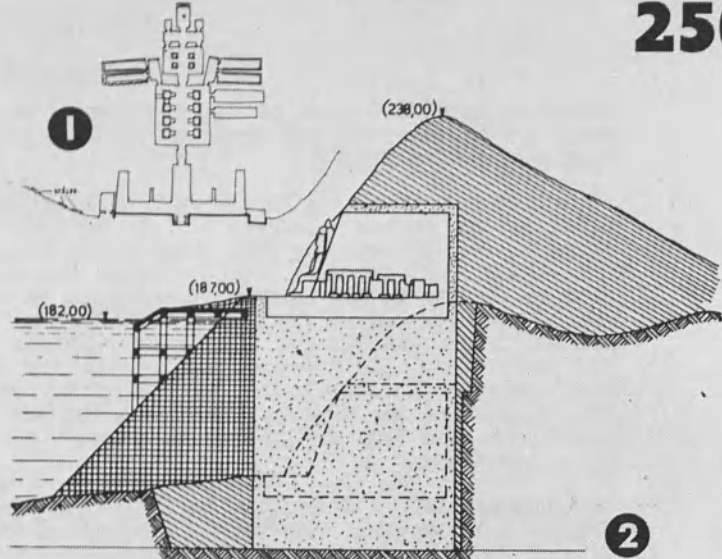
Consider again the site. The two temples are imbedded in solid rock. The façades with their massive statuary are poised on the escarpment above the river. The platform-rock on which they stand is 120 metres (390 feet) above sea-level. When the High Dam is completed, the water will rise to 182 metres (591 feet) above sea-level. So to be above water-level the rock-sections embodying the temples will have to be raised at least 200 feet, and underpinned.

Before the lifting operations begin a whole series of precautionary measures will have to be taken. The area in front of the temple will have to be protected by a cofferdam, an embankment 134 metres (440 feet) high, so that the operations can be protected as the dam-waters rise. A pit as long as the temple façades will be dug down to the 105 metres level, that is, about 50 feet deep, from which the excavation and clearing of the galleries beneath the temple blocks will proceed.

At the same time, the temples themselves will be carefully reinforced—an operation almost as delicate as the mending of cracked porcelain. The structures, including the colossi, have already been carefully examined for fissures. Some of the cracks probably existed when the temple was first built. They have caused damage to the Ramessid colossi in front of the Great Temple—and in the case of one statue have led to the shearing off of a head and arm.

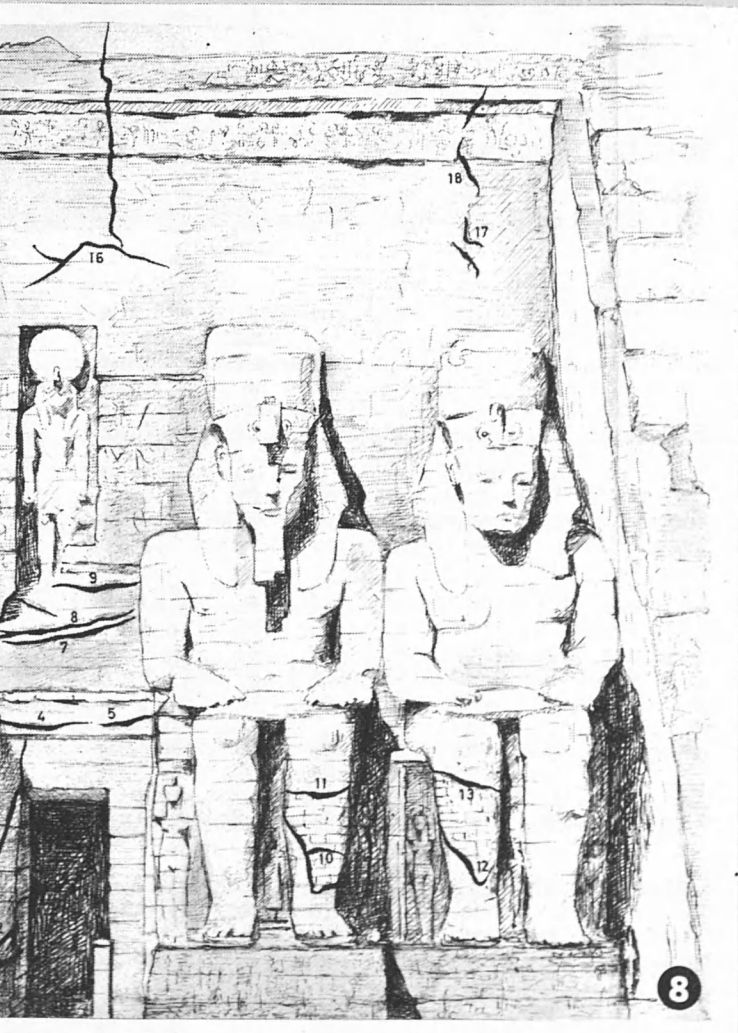
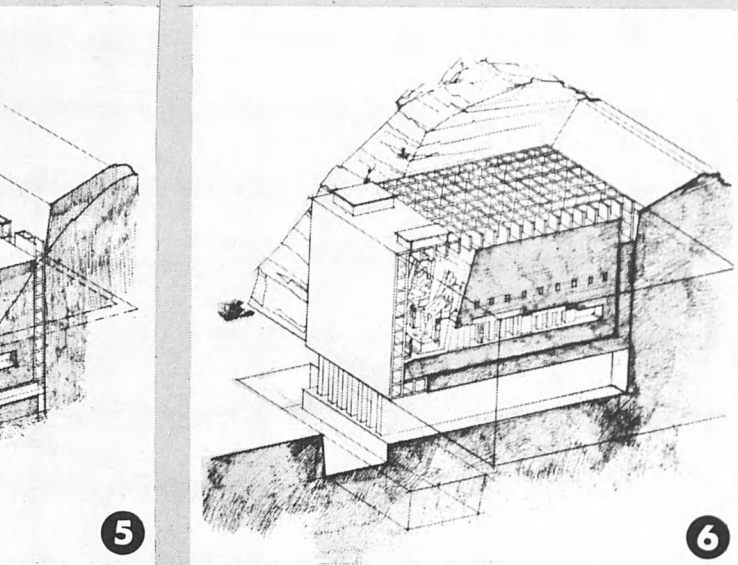
Inside the temple there are natural pipes, hollowed out by percolating water, and veins which were closed with

250,000 TONS LIFTED



of fabricated steel elements. (6) LIFTING BLOCK. Cut-away drawing shows temple being raised within its protective box by a multiple system of jacks working in pairs. (7) GIANT JACKS & TUNNELS. In tunnels excavated beneath the temple hundreds of giant jacks (left and right in drawing) will lift a weight of over a quarter of a million tons. Under electronic control, they will move less than one-sixteenth of an inch at a time. After every foot of lift they will be replaced by pre-fabricated concrete supports. (8) FACADE ROCK FISSURES. Every inch of the temple and the colossi have been examined and all fissures recorded. Before any lifting is done the temple will be carefully reinforced — an operation almost as delicate as the mending of cracked porcelain. The operations illustrated here will be repeated, though on a reduced scale, for the smaller Temple of Queen Nefertari — a few hundred feet away.

Drawings Italconsult



Boxed in concrete

mortar when the temple was built. There is the risk of scaling-off of weathered rock when work begins. Of the eight columns in the main hall of the Great Temple, two are not carrying any load because of cracks between the roof and the column head, and two others have been weakened by fractures.

The walls and roofs are in pretty sound condition but the greatest precautions will have to be taken to preserve intact the inscriptions and painting. (This could be done by covering them with adhesive textiles.) All this work, which would have amounted to a major piece of restoration even if the temples were not due to be moved, will have to anticipate any disturbance of the rock blocks in which the temples are encased.

The proposal is that the blocks, and the temples they contain, once cut out of the hill, should be enclosed in a reinforced concrete box so rigid that the separation of one block from the surrounding rock and the subsequent lifting will not introduce any stresses or strains. This box would have a bottom and four sides and binding ties across the top.

The bottom is a matter of special engineering concern because it will have to take the lifting forces. The proposed bottom grid structure will be 16 1/2 feet high (this may be reduced to 13 feet), which will involve the excavation of three groups of five parallel tunnels. The side and rear walls of the box will be of heavily reinforced concrete. They will be constructed in three groups of vertical shafts, excavated and concreted, and each wall section will be rigidly connected to the bottom-girders.

THE front walls have to take care of the façades of each of the temples. The space between the wall and the façade will be filled with compacted, crushed sandstone—like packing a fragile present for dispatch.

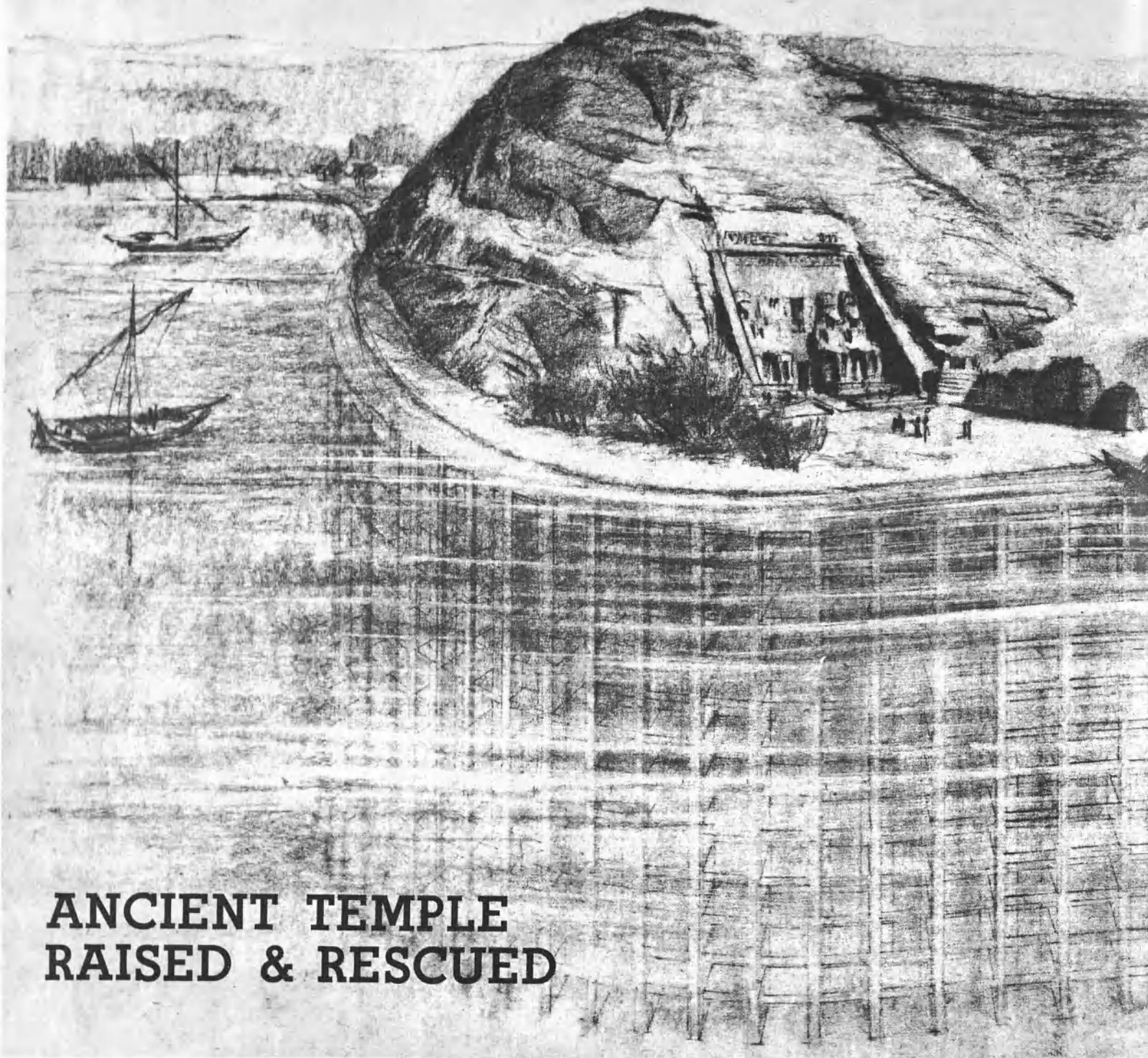
But, first, the mountain above the rock-blocks has to be removed, to reduce the weight and facilitate operations. This will mean shifting the overlay from 155 metres (about 500 ft) above sea-level upwards. This may sound like nothing more than a rather elaborate piece of landscape gardening (since it is planned to restore the contours around the lifted temples), but it actually is an extremely tricky operation. Explosives cannot be used nor any method which might cause vibrations likely to disturb the temple-rocks.

That applies to the whole process of cutting out the blocks. Apart from explosive shocks being entirely barred, any tools which would cause serious vibrations would be dangerous. However, experiments carried out in Norway, on rocks which would vibrate more than the Nubian sandstone, have shown that compressed air tools for boring and breaking can be safely used.

In rocks within twenty-four feet of any decorated parts, mechanical hammers weighing not more than 30 kilograms and giving a thousand blows per minute may be used. At closer range electric saws and chisels will have to be used.

But before anything is done, experiments will be carried out reproducing similar conditions to those at Abu Simbel. And the experts have recommended that during the operations microseismic warning systems—super-sensitive earthquake meters—should be installed. In effect, it will be a matter of the doctor feeling the patient's pulse the whole time, one of the "patients" in this case weighing a quarter of a million tons!

Once the blocks are cut and boxed the most delicate operation of all will begin. This is the edging upwards, two millimetres at a time, of the concrete "crates" and their massive contents. This will be done by mechanical jacks—on the same principle as those used to hoist a car



ANCIENT TEMPLE RAISED & RESCUED

when you have a punctured tyre. Outsized versions of those will be installed within the grid of the bottom structure in a lattice so contrived that the points of upward pressure will be evenly distributed.

The original proposal was to use hydraulic jacks. A later suggestion was for mechanical jacks with a maximum lifting capacity of 2,000 tons each, driven by hydraulic stroke cylinders moving a turnable nut through a ratchet system. The number of jacks and their lifting power are still a matter of debate among the experts. Some want more of them—250 with 1,000-ton lift each and even duplication of that, so that one set of jacks would always be taking the load while the other was being retracted.

Although the edging upwards will be done less than 1/16 of an inch at a time, one complete lifting cycle will raise the temple by one foot. At this stage of the lift, prefabricated reinforced concrete blocks of 30 cms will be slipped into position to form permanent supporting pillars. All this will be carefully synchronized and the functioning of each jack will be recorded on a central control panel so that the chief supervisor can make sure that there is no risk of warping, which would produce stresses in the temple blocks.

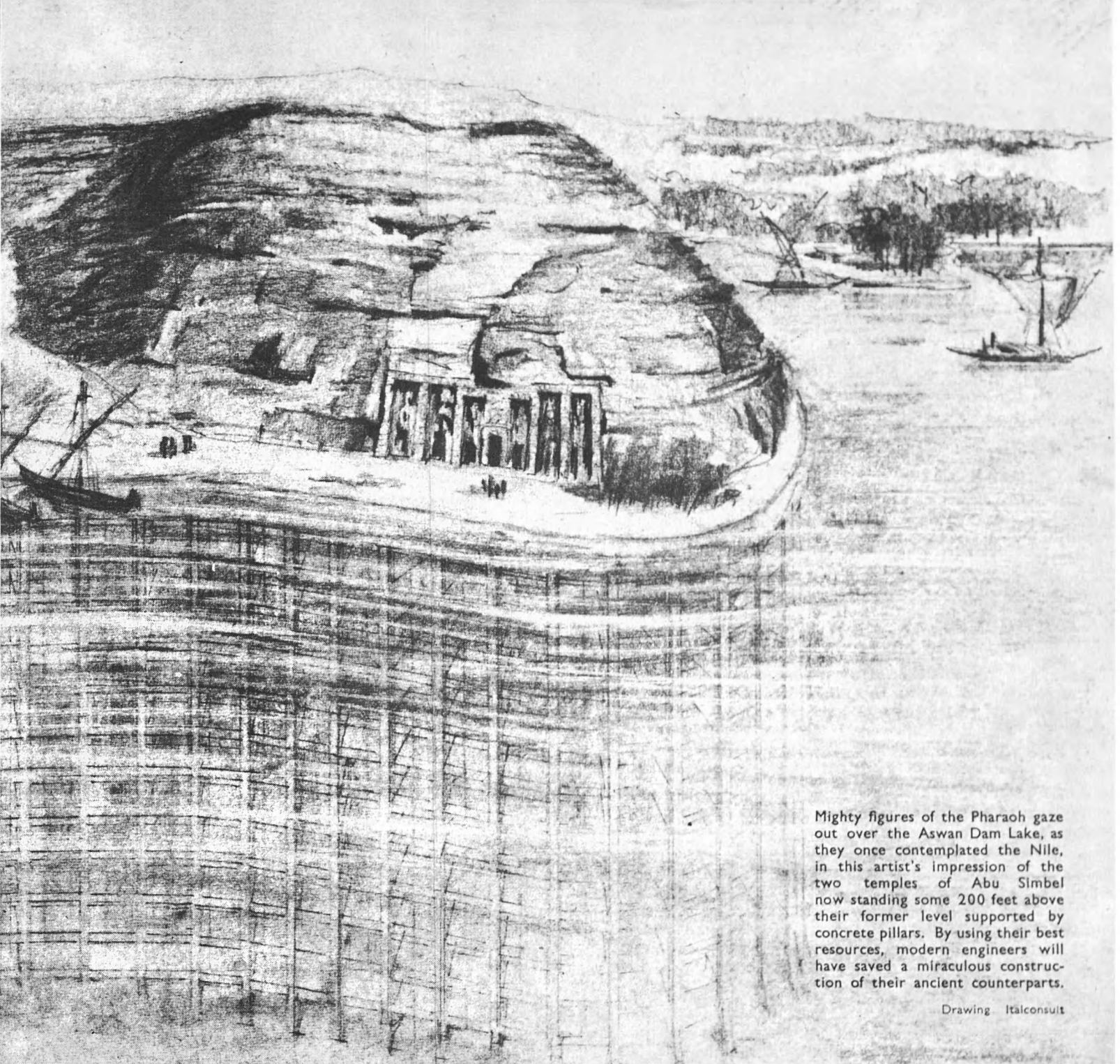
As the blocks rise upwards, the jacks will follow on taller and taller concrete pillars which will form part of

the final supporting structure. The stability of all this stilt-like erection will be guaranteed by horizontal reinforced concrete beams joining the continuous walls. Thus in the end, each temple will be standing on the crest of what will, externally, be an enclosed pillar, surely the biggest of pedestals which museum exhibits have ever had.

This, the direct engineering process, does not take into account the vast "housekeeping" programme involved. Already surveys have discovered where the huge supplies of suitable sand and aggregate can be obtained in the neighbourhood.

There will be a floating quay, which will rise with the waters of the Nile. There will be a network of supply roads; an electricity generating station; a settlement with a working population, and with civilized amenities which will be desperately needed in this tract of desert; workshops, etc., commensurate with one of the biggest engineering enterprises; and when the "surgical" operation of cutting out and transplanting the temples to the point where they will be safe from the encroaching waters of the High Dam of Sadd el Aali is performed, there will be the further job of "plastic" surgery.

The "scalped" mountain will be restored and the features, even the parting, the gully, between the temples will be reproduced, as a replica, on the higher level, of what they are today. This is not merely "beauty treat-



Mighty figures of the Pharaoh gaze out over the Aswan Dam Lake, as they once contemplated the Nile, in this artist's impression of the two temples of Abu Simbel now standing some 200 feet above their former level supported by concrete pillars. By using their best resources, modern engineers will have saved a miraculous construction of their ancient counterparts.

Drawing: Italconsult

ment," or even æsthetics, although those are properly commendable; it is also a question of the future preservation of the monuments.

We talk about "living rocks," transferring a biological simile to geology; but it is certainly true that these monuments have survived with remarkable durability because they have "lived" in balance with their natural surroundings.

The present day experts have a healthy respect for the foresight and judgment of their predecessors of 3,200 years ago. The Ancients chose the site well, for all the reasons which have already been discussed, but they also chose an environment in which exposed masonry could endure. This involved factors of temperature, humidity, shelter from the sand blast, of erosive desert wind and a subtle communion with the waters of the Nile. (Only since the building of the original Aswan Dam with the resulting raising of the water has chemical disintegration, in the base of the Small Temple, begun to appear; this mineralogical gangrene will be halted by the proposed "surgical" operation.)

When the dam is filled the Nile will be approximately in the same relationship to the temples as it is at present, and at the higher elevation, contours similar to the present ones will recapture the environment. The orienta-

tion of the temples will be precisely as now and the morning sun will continue to bring out of the darkness the faces of the Ancient Gods.

MISSING LINK SOUGHT IN NUBIA: An American anthropology-geology research team is now exploring the Wadi Halfa area for relics of the missing link between the very primitive man of Africa and the ancient man of Europe. The leaders of the expedition, Dr Ralph Solecki, Associate Professor of Anthropology, and Dr Rhodes W. Fairbridge, Professor of Geology, both from Columbia University, consider the Nile Valley the only well-watered corridor by which ancient man might have migrated from the northern to the southern hemisphere. They are therefore investigating silt deposits which probably contain artifacts dating back much further than the Egyptian civilization. The Columbia expedition, financed by a \$38,500 grant from the US National Science Foundation and supported by the Sudanese and U.A.R. Governments and Unesco, plans to save such relics of ancient man before they are submerged by two hundred or more feet of water that will rise behind the Aswan Dam.

HOW PHILAE WILL BE SAVED

by Michel Conil Lacoste

Mr. Conil Lacoste is fine arts columnist for the Paris daily newspaper "Le Monde". He has also been a frequent contributor to the "New York Times Sunday Magazine", and the French art magazine, "l'Œil". From 1951 to 1953 he was a teaching fellow at the University of Cairo.

FOR 60 years the island of Philae has been waging a desperate battle against the waters of the Nile. This famous shrine of antiquity which, with its temples dating back to the Ptolemies and the Caesars has long inspired historians of art and religion and travellers the world over, has thus far escaped the death which Pierre Loti predicted for it years ago. But now its reprieve from the waters of the Nile is gravely threatened for all times.

The crux of the problem can be summed up in a few words:

The island of Philae is located between the old Aswan dam downstream (that is, to the north) and the new High Dam under construction upstream. When it is completed the island will be *permanently* covered by water and the temples will be submerged all year long to half their height, the water level fluctuating daily by as much as 20 feet.

Unless protective measures are taken the temples, which at present emerge completely from the waters of the Nile for three months each year, will never again be visible in their entirety and the harmonious ensemble will be permanently destroyed. But even more important, the erosion caused by the daily rise and fall of the waters will be more harmful to the monuments than their nine-month total immersion now caused by the old dam. In the long run the movement of the waters will cut into the buildings like a knife, causing them to crumble and spelling their certain destruction.

A disaster of such magnitude appeared unthinkable. As soon as the dangers were realized, technicians set about to seek ways of saving Philae. In 1955, an Egyptian engineer, Osman R. Rostem, formulated a plan which was afterwards to serve as the basis for the adopted scheme to preserve the island. In a study entitled *The Salvage of Philae* he wrote: "The most effective solution to the question of Philae is the isolation of the island from the rest of the reservoir by building a series of small

dams round it and thus preventing the water from submerging the temples without disturbing them by removal or raising" (1).

The plan put forward last year by the Netherlands Engineering Consultants (NEDECO) on the initiative of the Government of the Netherlands is inspired by the same principle (2). It was adopted earlier this year by the United Arab Republic Consultative Committee concerning the safeguarding of the sites and monuments of Nubia.

Coming up the Nile, the traveller finds Philae about five miles upstream (or south) from the city of Aswan, a little beyond the First Cataract. This "City of Temples", as Champollion called it, seems to be floating on the Nile near the eastern bank where the river forms a small bay strewn with tiny islands, each rich in history, beneath rocky heights which rise from the shore.

Just west of Philae lies the islet of Agilkia, and beyond it the large island of Biga. The two islands together form a north-south chain which almost isolates this area of the river from the rest of the waterway, and Philae lies within their protective shield.

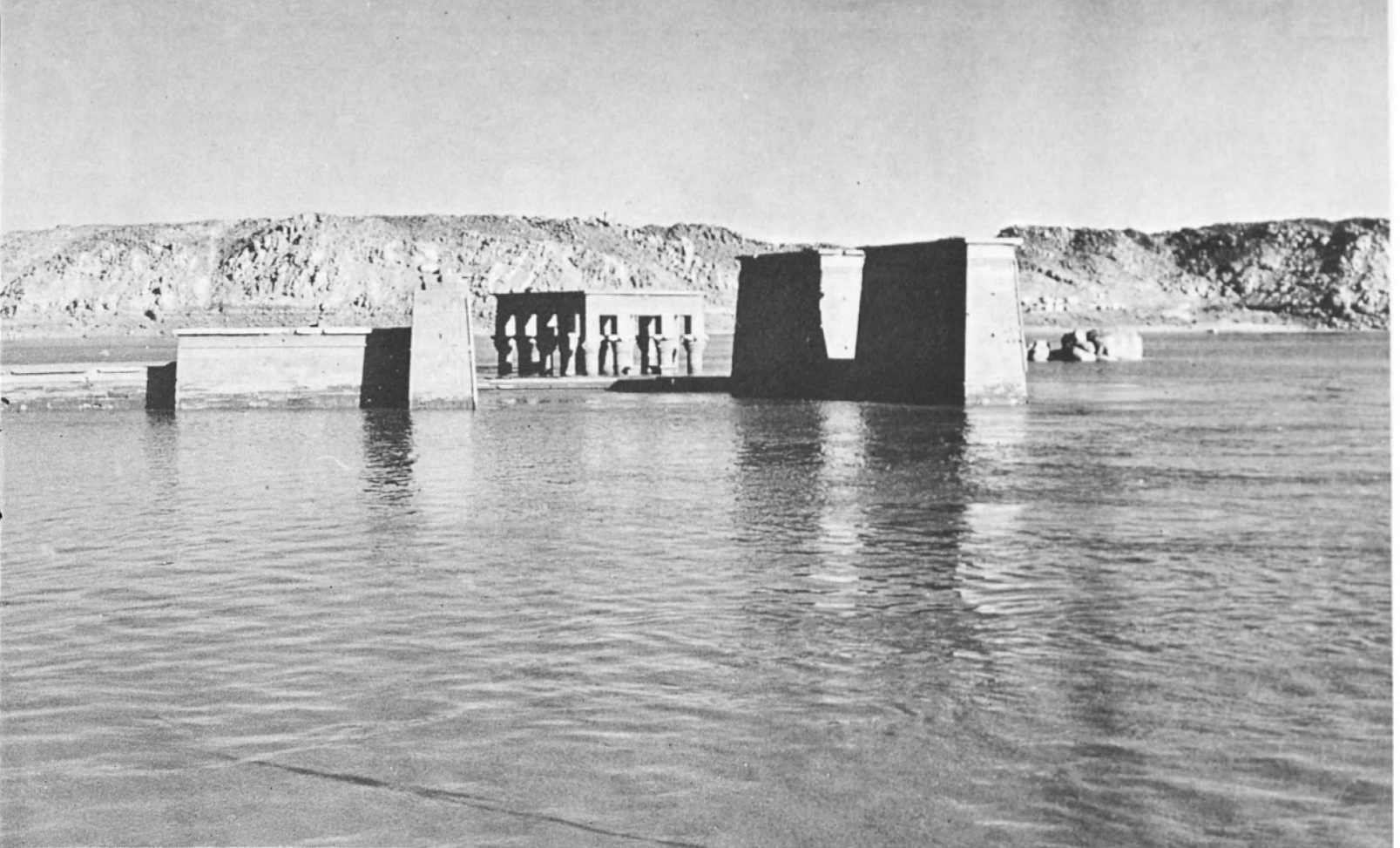
MR. ROSTEM'S scheme, carefully studied and elaborated by NEDECO, completes this natural isolation by a series of three dykes or dams, linking the islands together and each one to the river bank. The entire system of islands and dams would thus form a continuous protective arc to the west of Philae separating it from the main stream of the Nile. The level of the reservoir within the protected area would not be affected by the fluctuations of water between the two dams, and could thus be kept as low as required so that the island of Philae would always be visible in its entirety.

It was Herodotus who first referred to Philae as the "Pearl of Egypt", but the phrase has now become a cliché, and it is perhaps time we dispensed with it. But there can be no doubt that the spectacle offered by the sacred island of Isis with its pylons, its porticos and temples all reflected in the iridescent waters of the Nile is a sight which never fails to move the beholder.

Poised on the edge of the Aswan desert, Philae, the first stop in Egyptian Nubia, is unequalled in beauty except for Abu Simbel, the last stop before entering Sudanese Nubia—if I can be permitted to compare such widely differing examples of architecture.

(1) Osman R. Rostem: *The Salvage of Philae, Supplement to the Annals of the Antiquities Service. Published by the Imprimeries de l'Institut français d'Archéologie orientale. Cairo, 1955.*

16 (2) Netherlands Engineering Consultants Nedeco, *The Hague: Report on the safeguarding of the Philae monuments, prepared for Unesco by order of the Netherlands Government. November 1960.*



Unesco-Van der Haagen

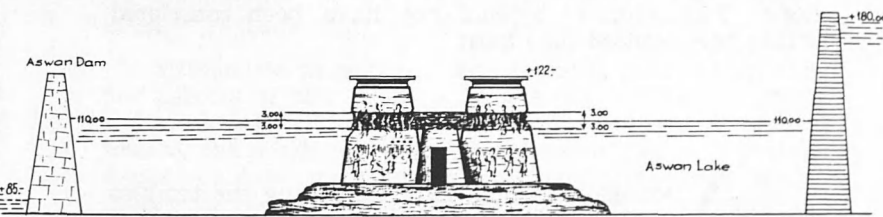
WHEN THE NEW ASWAN DAM is completed, the Island of Philae will be submerged by the Nile to the height shown in the photo above. At present, the Island's monuments are completely covered by the Nile, save for the tops of the main pylon, nine months of the year. Diagram, below left, shows

the present situation, the future situation if nothing is done, and finally how the temples will be saved by the construction of protective dykes. Map of Philae and surrounding area shows new and old dams and the position of dykes which will be built to protect Philae from the waters of the Nile.

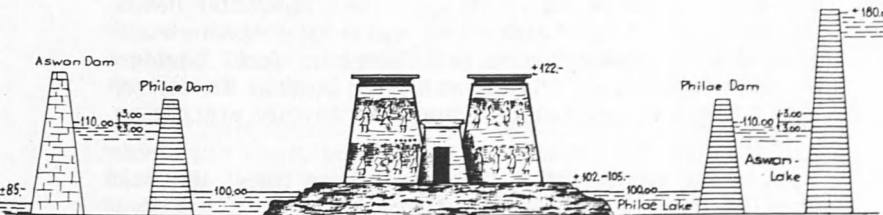
PRESENT SITUATION



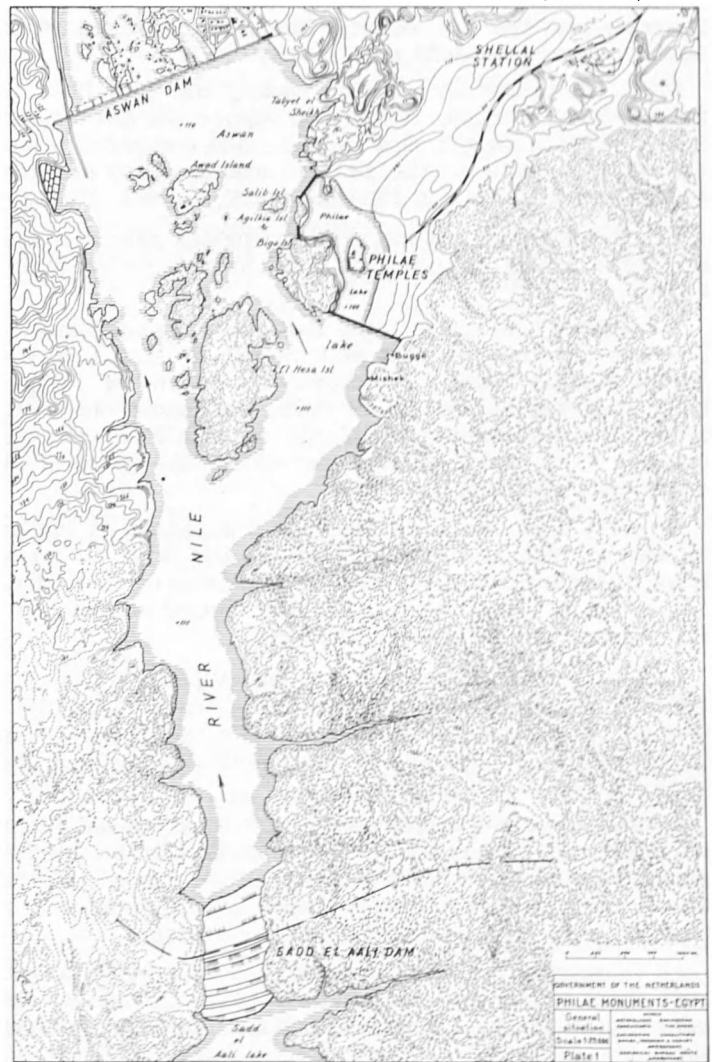
FUTURE SITUATION



PROPOSED FUTURE SITUATION



From "Report on Safeguarding Philae Monuments", NEDICO, 1960.



PHILAE

(Continued)

INTERIOR COURTYARD
of Temple of Isis at Philae with famous colonnaded "mammisi" or Birth House of Horus. The monuments of Philae will be saved by a system of three protective dykes, a plan proposed by Netherlands experts.

Unesco - Albert Raccah



Before the first Aswan dam was built, a palm grove (now ruined by the waters) added a note of cool enchantment to this "Vision of Paradise", as the French Egyptologists, Georges Bénédite and Canon Drioton, called it. Though deprived of its vegetation, Philae has maintained its grace and youthful beauty "like a bird perched on an island pointing straight south."

Philae is young not only in beauty but also in time, for none of its temples dates back beyond the 4th century B.C. This is a short period indeed when compared to the 470 million years of the natural granite amphitheatre which forms the setting for the "pearl" which is Philae.

But the island is not merely a prodigious *site*; it is also a *sanctuary*, and "an open air museum of Egyptian architecture and art."

A sanctuary, because it was from here that the cult of Isis, the universal goddess and mother of Horus, spread during Roman times far beyond the realms of Egypt; here that "the last refuge of dying paganism" knew its long twilight and defied the Christian faith long after the triumph of the new religion had closed the gates of all other temples along the Nile.

At every step one stumbles upon the sacred at Philae, on nearby Biga and even beyond, on the large island of Hesa where funeral steles mark the remains of an ancient necropolis in which the faithful were buried at a respectful distance from the tomb of Osiris.

Philae is a museum, or more exactly a city of five temples, the largest of which is dedicated to Isis. It is fronted by two gigantic pylons and the famous *mammisi* or "birth house" devoted to the annual mystery of the birth of Horus, the Son-God.

To the east lies Trajan's celebrated Kiosk, to the south the Kiosk of Nectanebo from which an avenue of sphinxes (or *dromos*) leads to the first pylon of the Temple of Isis. These buildings are completed by the famous gate of Hadrian with its chapels and three colonnades.

All these monuments with their delicately moulded pillars, their exquisitely intercolonnaded walls, recall the influence of Greek architecture and form a unique ensemble in Egyptian art.

In the light of its artistic and cultural importance, it is not difficult to understand that the experts who examined the various proposals for saving Philae were as often swayed by aesthetic considerations as by the technical factors involved.

One project proposed that a giant wall or earth dam 30 to 40 feet high be built to isolate the island from the rest of the Nile. This was rejected as unaesthetic, for the charm of Philae as a floating island would have been destroyed. Besides, the scheme was as costly as the proposal to create an artificial lake.

A second idea proposed the silting up of the area around Philae by building a low dam between the northern end of the island of Biga and the shore, but if adopted, half of the monuments would have probably been buried in silt. A third solution called for dismantling the temples and re-erecting them on the same site after the ground level had been raised 30 to 40 feet. Such an operation would have been very costly and difficult, and entailed risk of damage for the sculptures and inscriptions. Furthermore it could not have been completed within the required time limit.

ANOTHER plan involved dismantling the temples and transferring them to the island of Biga or to the mainland. In addition to the disadvantages just indicated, this scheme was ruled out for aesthetic and archaeological reasons. As Mr. Rostem pointed out as early as 1955, removing all the temples was out of the question, while choosing two or three of the most beautiful ones meant destroying the present architectural ensemble of the island. Philae's unique character lies in its subtle blending of stone and water against the background of fantastic stones and "elephant-feet" boulders on the neighbouring islands and river banks. To disturb this balance and association would be to ruin everything, or almost.

As to the transfer of the monuments to Biga; it would have destroyed the precise historical and mythological



TOPS OF PILLARS are all that show of the Birth House on Philae when the gates of Aswan dam are opened in the month of October and the Nile slowly submerges the island's monuments.

Photo Christiane Desroches-Noblecourt

relationship between the two islands. Philae was the traditional abode of Isis, Biga the sacrosanct realm of Osiris, unapproachable to humans. Regrouping the monuments of both divinities on Biga would have been an act of sacrilege in the eyes of Egyptologists, and at the very least would have deprived them of their present significance.

Actually two of the proposed solutions mentioned, i.e. the raising of the monuments and their dismantling and re-erection elsewhere, had been envisaged at the time of the construction of the first Aswan dam in 1902. Fortunately, the final decision was to leave the island as it was despite the risks involved, which were further increased by the successive raisings of the dam in 1907-1912 and 1929-1934. But this brave decision resulted in two vital measures being taken on the initiative of the then director of the Egyptian Antiquities Service, Gaston Maspero: the systematic recording of all the monuments and inscriptions on the island (just as this is now being done in the whole area threatened by the new Aswan Dam); the consolidation and reinforcement of the foundations of all the monuments. It is to this latter, providential precautionary measure that Philae probably owes its survival.

Egyptologists were for a time panic-stricken when the first effects of the temple's long months of submersion became known. When the monuments emerged from the waters, the sandstone walls had become "so soft that a finger could be stuck into them", and the tourist boats indeed caused a certain amount of damage by scraping against the supporting columns of this artificial Venice. But this damage was insignificant compared to the havoc which might have resulted had not the foundations of the temples been solidly reinforced.

All in all Philae has stood up well to the waters. And in one sense the annual immersion has even done some good. For though the flood waters have effaced the polychrome blues and whites which formerly adorned certain capitals, the same waters have cleansed the stone of destructive salts.

Thus, paradoxically, the *total* immersion of the temples, which was expected to lead to disaster, now appears less harmful than the *partial* immersion which will result from the construction of the new High Dam. What is

more, the 1902 decision to allow the temples to be submerged part of the year, taken only as a last resort, now proves to have been the one solution which did not compromise the future. Had the monuments been raised or removed to another site, today's "ideal" solution (which apparently was not studied or foreseen 60 years ago) would now be out of the question. Thus the drama of the 1900s has made possible the rescue operation of the 1960s.

The NEDECO plan, submitted by the Netherlands Government and now adopted, will safeguard the Isle of Philae in its original setting and splendour by the construction of three dykes, creating a low lying artificial lake within the high Aswan reservoir. In other words Philae will be protected by an artificial lake within an artificial lake—something like a "double-boiler". The "inside boiler" will be the protective barrier formed by the continuous chain of islands and dykes abutting on the shore.

In the summer of 1960 a Netherlands team carried out a preliminary investigation on the site gathering precise data on topography, water levels, meteorology, geology, building materials, and the alignment of the dams. Valuable topographical data, results of soundings and aerial photographs were made available to the mission by various Government ministries of the U.A.R.

THE team also took advantage of the preliminary studies previously carried out near the Sadd el Aali dam site. They examined vital questions such as water evaporation, wind speeds and the resulting waves in Aswan lake, water seepage and capillary action. The local Nilometer was called upon to furnish much information concerning water levels, while the river bed was thoroughly sounded and vertical exploration carried out systematically in the vicinity of the sacred island.

On the basis of this preliminary research, the following proposals were put forward. The level of the Philae lake was set at 323 feet, the top of the works at 380 feet. The north and south dykes would be built first from the bank abutments outward. Rock fill would be used near the

PHILAE (Continued)

ITS TEMPLES WILL AGAIN BE MIRRORED IN THE WATERS

banks and sand in the centre part, reinforced by concrete caissons or a double row of steel sheet piling.

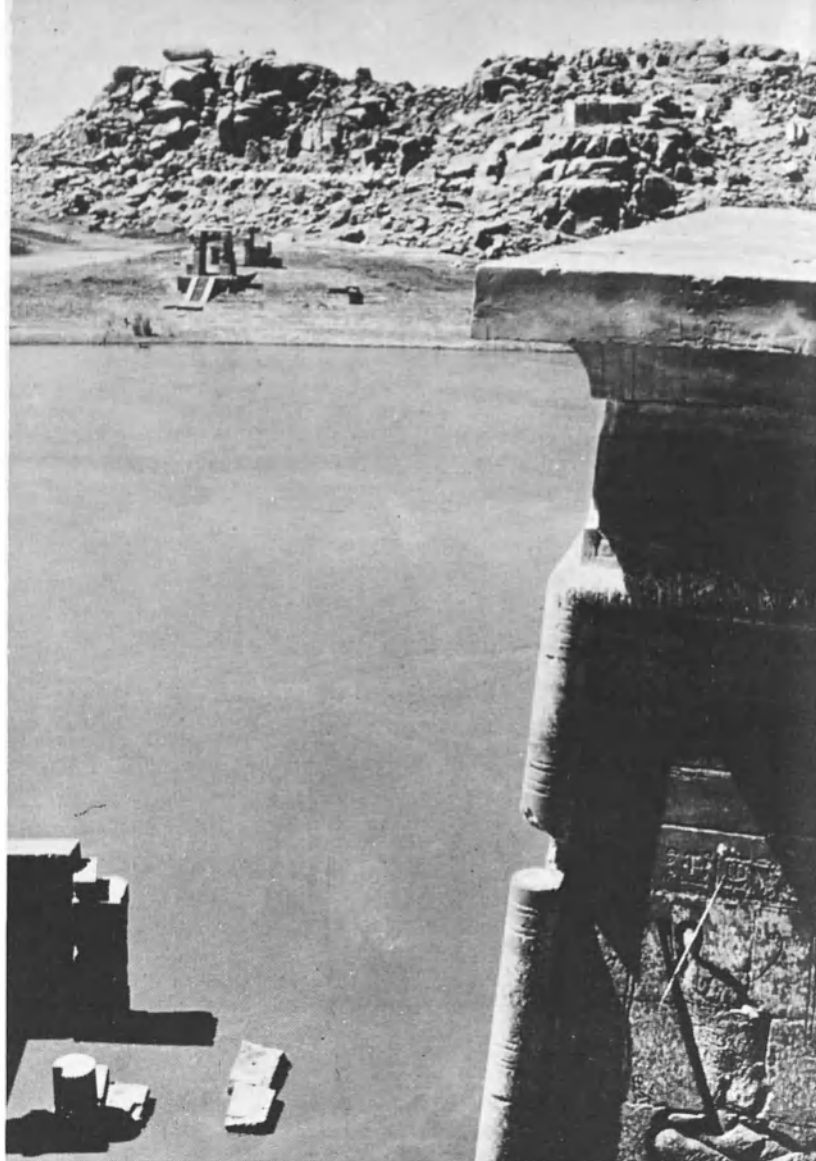
Last of all, the dyke joining the two islands would be built. Though presenting less problems from the technical point of view, this dam is the one that will close the lake and it will have to withstand currents of 10 feet per second. As the gap is reduced, at the final stages, the pressure of water will steadily increase. So this centre dam will be of the rock fill type. During the actual closing, the authorities will be asked to keep the level of the Aswan Dam constant.

The alignment of the dykes proposed in the draft project is a tentative one; the final alignment can be determined only after further soundings have been carried out. At the end of last year the authors of the report were in favour of the shortest span for the northern dyke (though this is not always the cheapest in public works). This dyke would join Agilkia Island to the mainland at Tabyet el Sheikh. They were even more strongly in favour of this course for the centre dyke—the one joining Agilkia and Biga Islands. For the southern dyke further soundings will be required to determine whether a slightly crooked alignment may not be technically preferable. This is a question to be discussed and carefully studied. The plan Mr. Rostem prepared six years ago provided for somewhat different alignments from NEDECO's.

WATERTIGHTNESS is another problem. Up to a point seepage can be prevented by protective blankets on the upstream slopes. Grout-curtains will also be used to filter out sand and silt. But the Dutch consider that it would be more economical to allow for a pumping station than a costly array of devices to prevent seepage, for these would raise the costs considerably. Having regard to the water balance due to infiltration and evaporation—closely calculated for the proposed Philae Lake works—the engineers have determined that a pump discharging 350 litres a second would be the most economical solution for the annual surplus of from 50 to 100 million square feet of water seepage over evaporation losses. Similarly, the lake waters could be changed, and if the pumping capacity were increased to 465 litres a second, the pump could also be used for discharging seepage from Shellal on the east bank, in the event that the Egyptian authorities decide to put that area under cultivation.

The Netherlands plan, briefly described here, will thus be executed under optimum conditions. Elaborated by engineers of a country specialized by its geographical situation in hydraulics, it has been unanimously approved, and no alternative plan is under consideration. The Government of the Netherlands has offered to perfect it and the estimated total cost of US\$6 millions now seems assured since the President of the United States last April recommended that the equivalent of this sum in Egyptian currency be appropriated for the salvage of Philae. And yet, actual operations are not scheduled to begin before 1968...

This may appear to be an astonishingly long delay, until one realizes that at present the island and its surroundings are under water for most of the year. It is only when the new Aswan dam is finally completed in 1968 that the waters of the Nile will be contained and engineers will be able to pitch their tents on dry land and move forward their equipment.



Photos Unesco-Van der Haagen

VIEW FROM PHILAE looking toward Biga Island with its tomb of Osiris, husband of Isis, whose great temple and pylons dominate Philae. Below, one of the pylons of the Temple of Isis showing the wealth of carving on its walls.





© Paul Almasy

ALL OF NUBIA IS TODAY AN ARCHAEOLOGICAL CAMP. HERE EXCAVATORS ARE SEEN AT WORK AT THE ANCIENT SITE OF ANIBA.

NUBIA TODAY: A VAST ARCHAEOLOGICAL CAMP

by *Louis A. Christophe*

Louis A. Christophe, a well-known French Egyptologist, is Unesco Representative for the Nubian Campaign in Cairo, and Assistant Secretary-General of the Institut d'Egypte.

HUNDREDS of archaeologists from more than 15 countries are today working against time to survey, explore and excavate the complex and long-buried vestiges of countless civilizations which, from the beginnings of man's history, have left their marks upon the Nubian valley. As early as 1955 when the announcement was made that the Aswan High Dam would be built, both the Governments of the United Arab Republic and the Sudan immediately began to consider ways in which the archaeological sites situated in the area to be flooded could be fully exploited before they are covered by the lake waters.

A priority list of sites to be excavated in the Sudan was drawn up on the basis of a thorough aerial survey. In Egypt, excavations which had been halted 25 years ago along the Nile near Ballana and Qustul were resumed. At the same time, the Egyptian Antiquities Department suspended excavation work in other areas in order to concentrate solely upon the Nubian valley. A request was sent out to all foundations and institutions already

engaged in work at Pharaonic sites in Egypt to concentrate on the Nubian portion of the Nile valley.

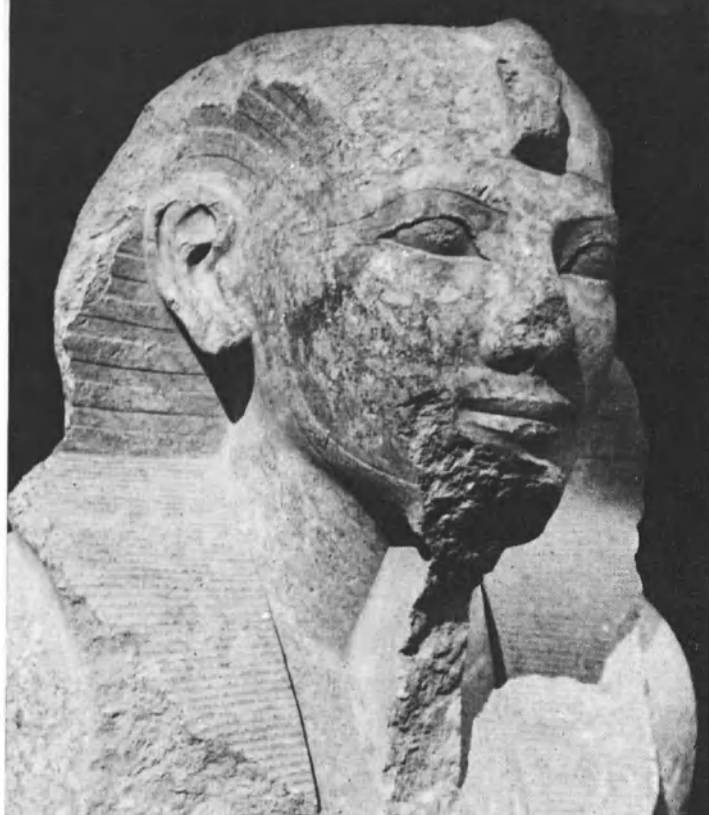
The first response was disappointing. Only two scientific expeditions were sent to Egyptian Nubia—one by the German Institute at Cairo, and the other by Milan University. In addition, the Egypt Exploration Society of London undertook excavations at Buhen in the Sudan.

With dozens of other sites still to be excavated, it became more and more apparent as the months passed that some new action was needed to ensure that all archaeological features of Nubia would be thoroughly explored in the relatively short time which was left. The Minister of Culture for the UAR, faced with this pressing problem, out of all proportion to his nation's resources, appealed to UNESCO. The Sudan, whose sites in the Nubian valley have been scarcely touched before, made a similar appeal.

In answer to this appeal, a UNESCO mission of experts was sent to Nubia and on the basis of their report, the

GIFTS FROM THE LAND OF THE PHARAOHS

The art objects on this double page are a few of the ancient Egyptian treasures which the Government of the United Arab Republic is offering as grants-in-return to countries which contribute to the Nubian campaign. The objects include statues, sarcophagi, alabaster jars and vases, statuettes in faïence, wood sculptures, etc., from the Luxor, Karnak, Giza and Aswan sites. Also offered are five Pharaonic temples. Both the UAR and the Sudan have also offered 50 per cent of excavation finds in the area to be flooded, and Egypt has generously modified its antiquity laws for excavations elsewhere.

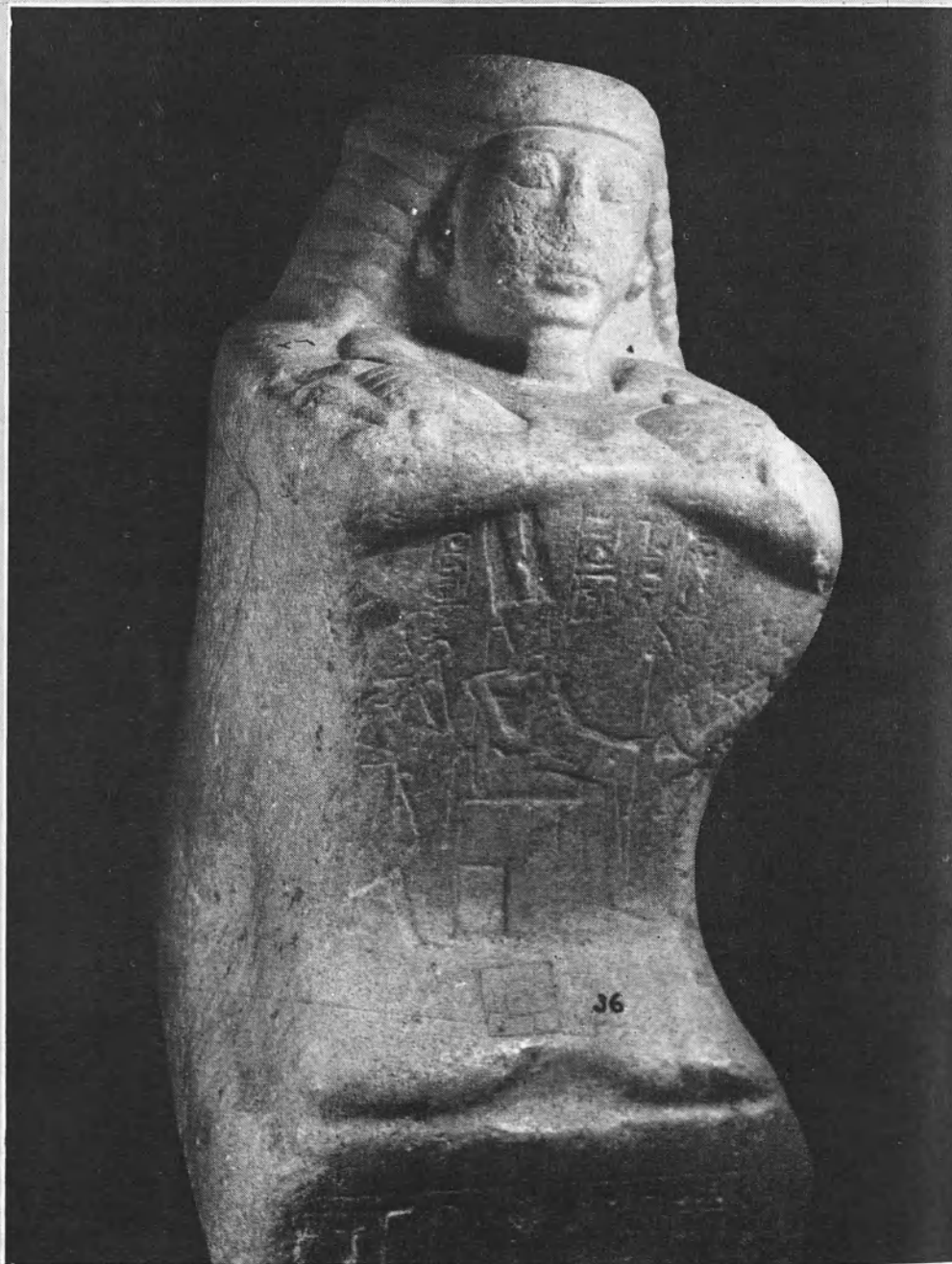


Granite statue of an unknown king found at Karnak, probably New Kingdom (3,000 to 4,000 years old).

Rare wooden statuette from tomb at Saqqara, the necropolis of Memphis, dates from 3rd or 4th dynasty circa 3000 B.C.



Sandstone cubic statue of an Egyptian scribe with hieroglyphic inscriptions, standing about four feet high. Karnak.



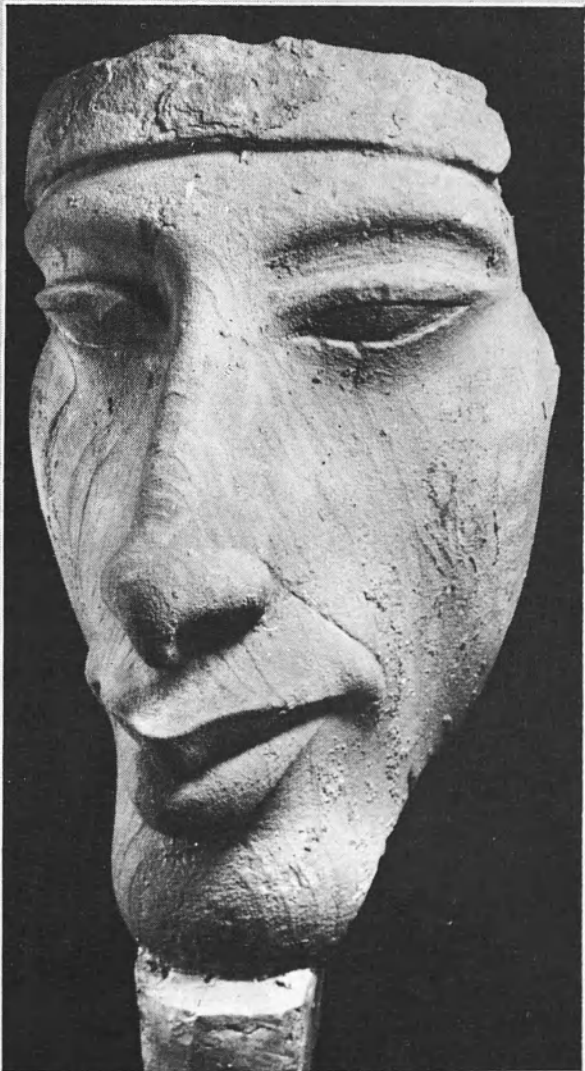
Unesco — Egyptian Documentation Centre, Cairo



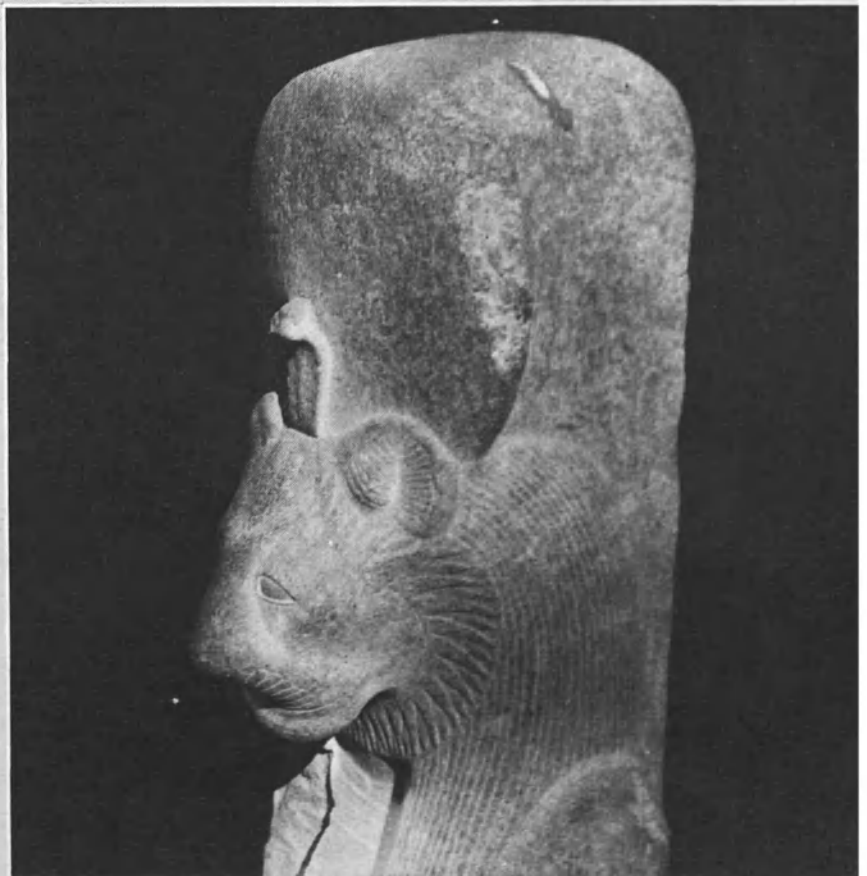
Head of a royal personage, from Karnak, dates from the 18th dynasty and is about 3,500 years old.



Famed King Thut (Thutmose III) who ruled more than 3,500 years ago is here depicted on an osiriac pillar which bears his name.



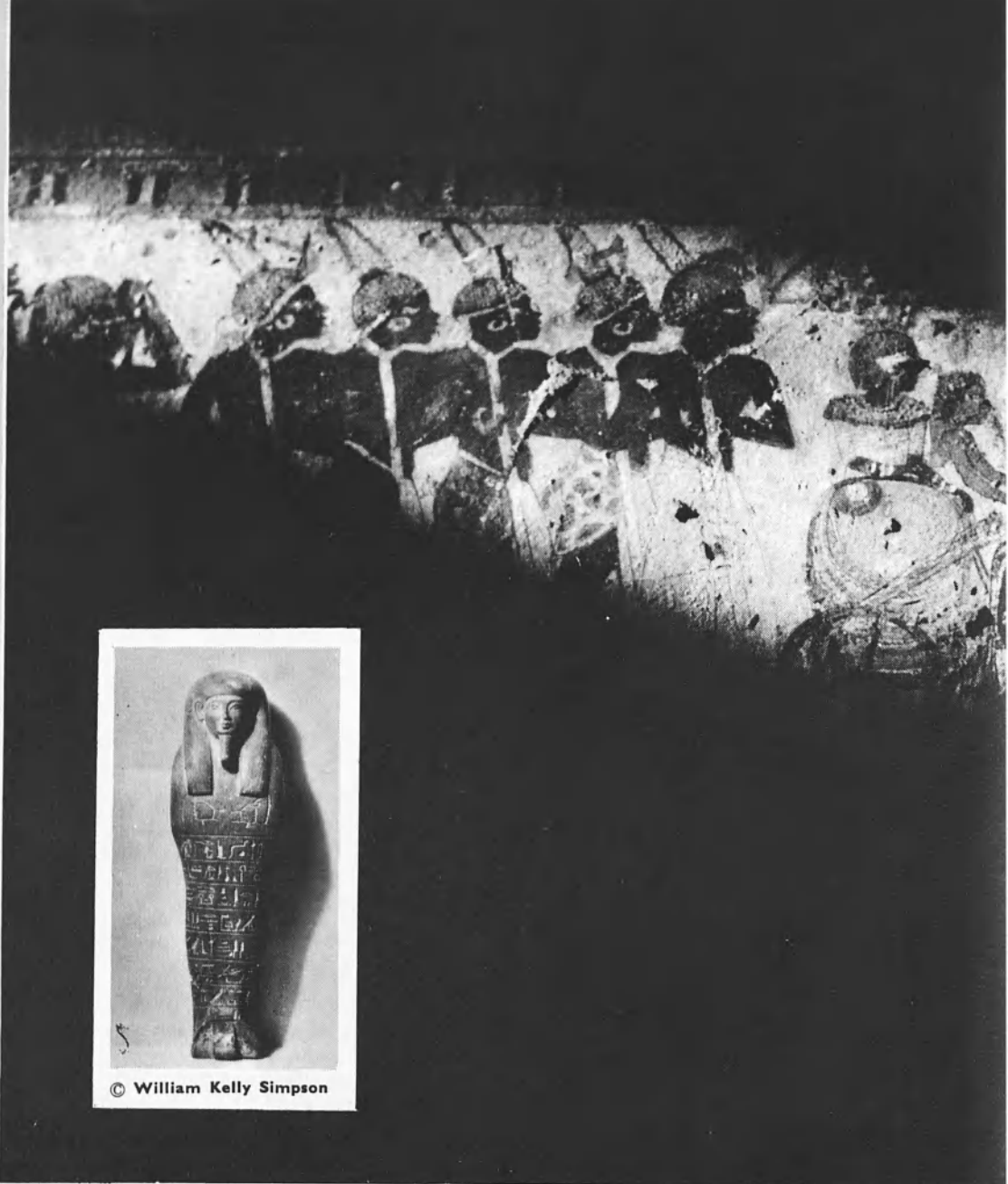
Head of the famous Heretic King Amenophis IV (Akhenaten) husband of Nefertiti, from the temple of the Sun at Karnak.



Sekhmet, lion goddess and daughter of Re, from the Temple of Amenophis III at Gurna.

TOMB YIELDS CLUE TO NUBIAN PRINCE

Prince Heka Nefer of Miam, spent his childhood in the palace of King Tutankhamon three thousand years ago and has long been known to Egyptologists because of inscriptions telling his life's story and a well-preserved painting on the wall of Huy's Tomb at Thebes (right) which pictures and names him as the foremost in a long column of tribute bearers before the monarch. But the whereabouts of his kingdom in Nubia and his burial place had never been discovered. Recently, an expedition from Yale and Pennsylvania Universities, while exploring and excavating ancient ruins in the Aniba area which will be flooded when the Aswan dam is completed, discovered a tomb which is believed to be that of Heka Nefer. Although it was long ago plundered of its treasures, Yale archaeologist William Kelly Simpson discovered five small funerary statues (inset) bearing the name and title of the prince. Inscriptions on the wall of the tomb, as well as rock carvings nearby also identified the tomb as that of the Prince of Miam. For another important find by a Polish expedition, see p. 40.



© William Kelly Simpson



FORMER CAPITAL of the viceroys of the Pharaohs, Aniba has yielded important finds for archaeologists from Cairo University who are excavating here



Photos © Almasy

Dividing up the sites among the searchers

appeal was made by the Director-General to save the monuments and sites of ancient Nubia.

This appeal met with an immediate response. Both the UAR and the Sudan received generous offers of co-operation. Archaeological work began almost at once and now, less than 18 months after the appeal, the results are so encouraging that it is almost certain that the great bulk of archaeological work will be accomplished before the lake waters bury this area forever.

Because Sudanese Nubia is less well known than Egypt, the Sudanese authorities decided to begin with a general archaeological survey of all the threatened territory. The Antiquities Department, with the help of three experts made available by UNESCO, has now prospected the whole of the west bank from the Sudanese-Egyptian border down to Buhen. A general survey of the east bank from the border down to the northern outskirts of Wadi Halfa was made by a joint mission from the Scandinavian countries. By the end of the forthcoming winter campaign, all the archaeological sites of Upper Nubia threatened with submersion will very probably have been explored and identified.

When the original Aswan Dam was raised, first in the years 1907 to 1912, then again in 1929-1934, the Antiquities Department in Egypt excavated all the ancient sites in Lower Nubia. (The Sudan was not affected then as it will be by the new dam.) Nevertheless, as an additional precaution, another general archaeological survey was recently organized in collaboration with London University to make sure that no sites still remained buried under the sand. As a result of this survey four important sites have already been discovered between the Sudanese border and Korosko. Next season the expedition expects to complete its survey in the northern part of Lower Nubia.

YET another vital problem had to be solved. Nubia's prehistoric cultures had never been thoroughly investigated on the spot. Now, Columbia University, USA, has organized an expedition which will make a general survey of the prehistoric sites of Sudanese Nubia and the southern reaches of Egyptian Nubia. This mission is expected to cover the whole of the threatened area before the flood waters arrive.

These general surveys are invaluable. Not only do they give a true picture of the archaeological terrain, but they serve as a guide to institutes and foundations which have not as yet participated in excavations in Nubia.

As offers of help have streamed in from all over the world, most institutes and foundations have already been allotted the concessions they requested. Nearly all the sites in Egyptian Nubia have already been conceded—and in Sudanese Nubia the position will doubtless be the same long before the time for submersion.

Listed in geographical order—starting from the First Cataract and going up the Nile to the Second Cataract—the following sites have been allotted for excavation:

- Debod - Under the temple. Polish Centre of Mediterranean Archaeology, Cairo
- Dehmit - Egyptian Museum, Turin
- Khor, Dehmit, Kalabsha - Oriental Institute, Chicago, and Swiss Institute of Architectural Research, Cairo
- Taffeh - South chapel. Czech Archaeological Institute, Cairo
- Kalabsha, Gerf Hussein - Czech Archaeological Institute, Cairo
- Sabagura - Milan University
- Dakka and Wadi Allaqi - Academy of Sciences, Leningrad
- Kuban - Milan University
- Maharraqah, Ikhmindi - Milan University
- Sayala - Vienna University
- Medik and route to Tomas - Strasbourg University
- Sheikh Da'ud - Spanish National Committee for Nubia
- Aiya - Leyden Museum
- Aniba - Cairo University
- Ibrim - Fortress and cemeteries. Egypt Exploration Society, London
- Ermenneh-Tockhe - Yale and Pennsylvania Universities
- Tamit - Milan University
- Abu Simbel - East bank. Milan University
- Jebel Adda - Necropolis. German Institute, Cairo
- Jebel Adda - Fortress. Alexandria University, Yale and Pennsylvania Universities.
- Ballana and Qustul - Antiquities Department, UAR



Unesco - Rex Keating

under the direction of Dr. Abdel Abu Bakr. Mummies 5,000 years old, in a good state of preservation, have been discovered within an ancient necropolis.



FLOATING LABORATORIES ON THE NILE

by *Christiane Desroches-Noblecourt*

Christiane Desroches-Noblecourt, Curator of the Egyptian Antiquities Department at the Louvre Museum, Paris, is Unesco Consultant to the Egyptian Documentation Centre set up by the UAR in Cairo.

FROM the beginning of 1955, the normally all but deserted banks of the Nubian Nile suddenly quickened with life. Archaeologists arrived and commenced operations. Teams from the Documentation Centre on Ancient Egypt in Cairo worked unremittingly from dawn to dusk, winter and summer alike, oblivious to their isolated surroundings.

For the past fifteen years or so, Egyptological studies had been at a standstill in the region above the First Cataract of the Nile, stretching as far as the Second Cataract close to the Sudanese frontier. It seemed as if no excavation or archaeological survey had the power to lure the successors of Champollion. Only a sparse handful of archaeological missions were at work, either in the Sudan to the south of the area threatened by the High Aswan Dam or in the north of Aswan in that land so richly strewn with temples.

The launching of Unesco's appeal brought a sudden change in the scene of operations. Investigators working in accessible sites wound up their studies, packed their equipment and, spurred by a sense of duty, feelings of loyalty to a common cause or an urge to equal or excel their fellow archaeologists, set off for parched and mysterious Nubia. From now on they were initiating themselves into the archaeological story of Nubia which, though often seeming to be a distorted image of the Egyptian parent state, had also many lessons to teach them.

Those who today follow the course of the Nubian Nile are no longer likely to have the same feeling of solitude which, even a few years ago, was a common experience for anyone returning to the camp of the Documentation Centre where Egyptians and Europeans, latter-day pioneers in a modern adventure, together built the foundations of a new collaboration in Egyptology.

Nowadays it is hardly possible to travel 15 to 20 miles without finding a boat moored to the bank. Passengers in the regular weekly mailboat which serves this distant land are always surprised and fascinated by these floating camps, which also excite the curiosity of tourists who, thanks to the international appeal for the safeguarding of Nubia's monuments, are now rediscovering the great forgotten sanctuaries.

EACH boat encountered is practically certain to be the floating home of an archaeological expedition: Spanish, Italian (from Milan or Rome); Austrian, Yugoslav, American (from Chicago, Yale or Pennsylvania); Polish, Swiss, German, Dutch, Czechoslovak, Belgian, English (from Oxford, Cambridge or London), French (from Paris, Cairo, Lyons or Strasbourg). Others again have been chartered by fact-collecting missions—Russian, Japanese, Indian and others.

The teams from the Documentation Centre are thus no longer working alone in Nubia. Many other investigators have brought unaccustomed animation to the sun-parched river banks. Today too the activities of the Centre have been redoubled. Though it has entrusted the Oriental Institute of Chicago and the French Institute of Oriental Archaeology in Cairo with the completion in extenso of the final surveys of the temples of Beit el Wadi and Wadi es Sebuah, it has itself shouldered the immense task of surveying, down to the smallest detail, all the other sanctuaries of Nubia.

During the first meeting of the Consultative Committee of Experts set up by the Government of the United Arab Republic, the Egyptologist members spontaneously undertook to follow a set of rules designed for the common good. The system used by the foreign missions for recording information about the various monuments is based on the techniques developed and perfected by the Cairo Centre and follows the demands of Egyptological fact-finding.

The Documentation Centre which is, in fact, the national archives of Egyptian archaeology, is to receive a copy of all the monument surveys completed by foreign missions, the missions naturally retaining the publication rights for these reports for a pre-determined period.

The Centre, however, is making itself responsible for nearly all the surveys. It has already boosted its activities tenfold thanks to the construction of a magnificent floating-laboratory in which it is possible to go on working in the hottest weather (summer temperatures sometimes reach 140 degrees Fahrenheit) and which also solves the water problem. Heavily impregnated with silt in summer, the water must be constantly filtered and cooled for all purposes including photographic development.

DURING every season nowadays there are always several of the Centre's missions operating from fully equipped vessels. Egypt's technical and scientific teams, well versed in this specialized and delicate work of collaboration, also are receiving help on an appreciable scale from other countries. Unesco continues to provide an adviser and several specialists. At this phase of the campaign foreign assistance comes individually from countries responding to the appeal. They have sent specialists in philology and archaeology and also technicians, and have provided the funds to maintain them.

The results of all the surveys are centralized at the Documentation Centre and following the 1961 summer missions a satisfying volume of work has been achieved. Surveys on the temples of Abu Simbel are virtually completed as are those on the small temples of Abu Oda and Jebel Shams. The list of other surveying results is impressive: the tomb-chapel of Pennut at Aniba, the Amada temple, part of the Dakka temple and the rock-hewn chapel at Ellesya, part of the Wadi es Sebuah temple and the temple of Gerf Hussein; the immense cliff of Kalabsha with its adjoining chapels, the Beit el Wali temple, the Taffeh chapels and those of Kertassi (not forgetting the astonishing Kertassi quarries) and finally the Debed monument.

At the gateway to Egyptian Nubia, the island marvel that is Philae, with all its sanctuaries, has not yet been completely surveyed. Long before the Aswan High Dam created a threat to the island a French mission and then a German one had begun to publish the results of their surveys. But these results were minute in comparison with all that remains to be done.

Now, at any rate, the work of systematically examining the island, is under way. Last year two French epigraphers sent by the French National Council of Scientific Research, joined their Egyptian colleagues in making as complete an inventory as possible of the Greek epigraphs on the Sacred Island.

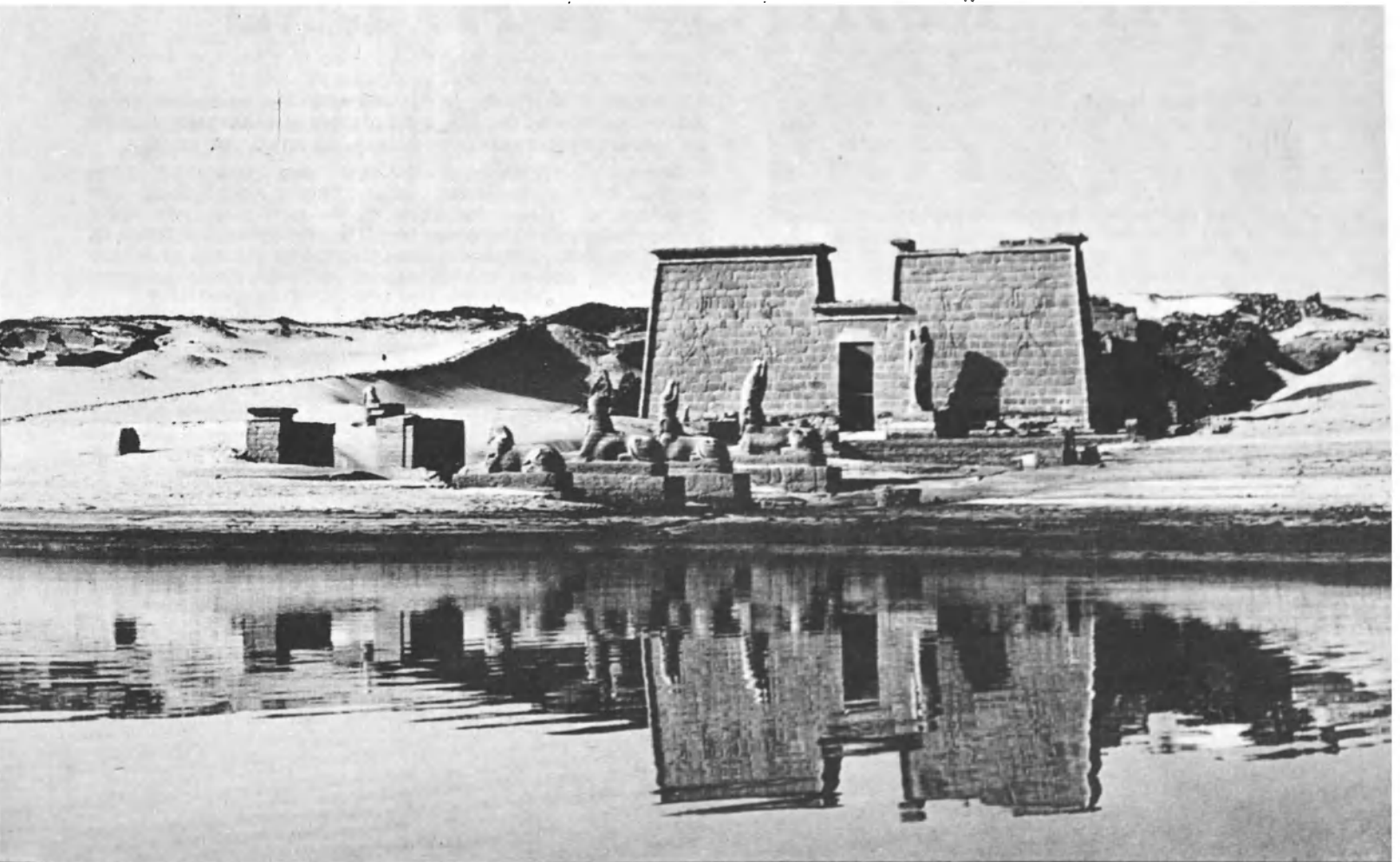
At the same time a mission from the French National Geographic Institute, including five photogrammetry



© Paul Almasy

WADI ES SEBUA (below) one of the most beautiful of Nubian temples, was built by Rameses II more than 3,200 years ago. Its graceful row of sphinxes lead to the shore of the Nile. Like many other temples in the Nubian valley it is threatened by the waters which will rise 200 feet after the completion of the Aswan Dam. Above, a colossal head of Rameses II found in the interior court of the temple of Gerf Husseln.

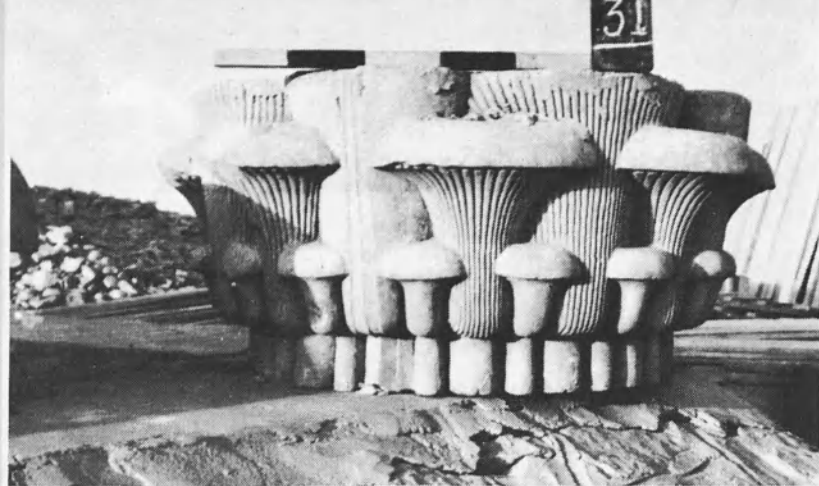
Unesco-Van der Haagen



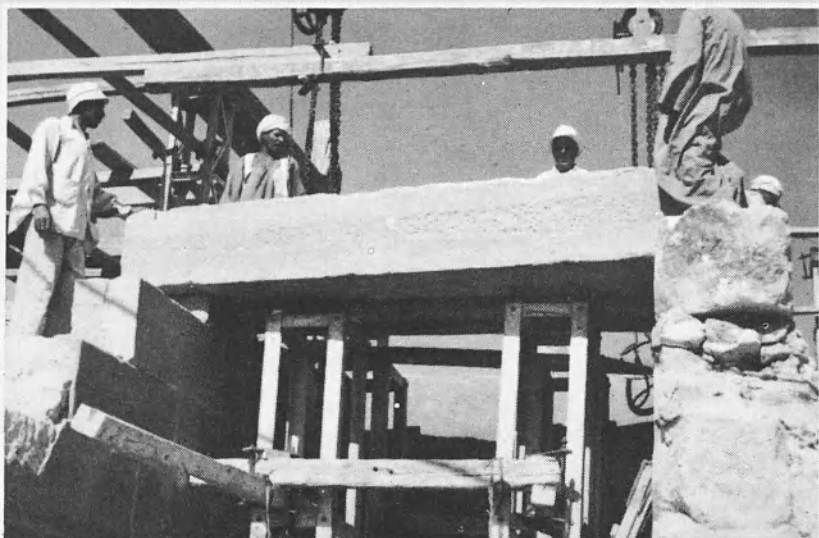
TEMPLES IN BOXES



NUBIA'S SANCTUARIES are being crated up all along the Nile. Above, a block from Kertassi temple is numbered and boxed for shipment.



EXOTIC SCULPTURED capital from the Kertassi Chapel is made ready for crating and shipment. Below, temple at Debod in process of being dismantled.



Photos Egyptian Documentation Centre

FLOATING LABORATORIES (Cont'd)

RACE AGAINST THE RISING WATERS

specialists worked alongside the team of the Documentation Centre and an Egyptian photogrammetry technician, to make a complete record (architectural measurements and photographs) of all the monuments on the island and of the island itself.

Working in the oppressive summer heat, they continued their task in the temples which are only freed by the Nile waters during this season. They finished making surveys of the sanctuaries of Debod, Taffeh North and the small kiosk of Kertassi only a few days before these monuments were dismantled for removal. This would have been the last year in which these sanctuaries would have appeared above the waters.

They went on to make surveys of all the quarries at Kertassi, and of Belt el Wali; they completed the work at Kalabsha, begun two years earlier, and continued operations at the temple of Dendur, at Gerf Hussein and at Dakka.

They even made full surveys of the Byzantine citadel at Sabagura which had only been brought to light a few weeks earlier. Classical epigraphers carried out research and verification work, made impressions, photographed and copied all the Greek inscriptions in the Kertassi quarries and on the temple of Dakka.

In this race against time the work has called for perfect precision and has raised multiple problems. It has demanded from all those engaged upon it a rigorous sense of accuracy, great physical resistance and, above all, an attitude of complete unselfishness—the ability to sink

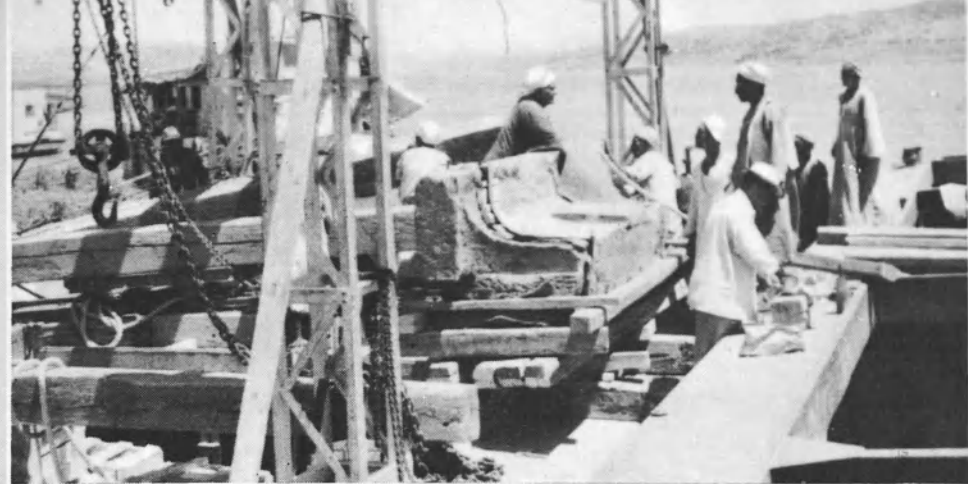
all personal interests in a task for the common good. Altogether it has been an extraordinary example of international collaboration producing un hoped for results.

Some of Nubia's sanctuaries can only be preserved in the hallowed sites chosen for them by priests and deities for they fit so perfectly into their surroundings that it would be difficult to imagine them in any other lieu. But there are others, less famous or whose meaning is not so closely associated with their settings, and these can be moved and preserved for posterity.

In contrast to the two major monuments of Philae and Abu Simbel there are other temples which must be uprooted and taken away if they are not to be lost for ever. Some are hewn from the solid rock and their transfer raises multiple problems, some of which have already been resolved. Others are built on the banks of the Nile and can most likely be removed piece by piece along with their foundations.

Yet even this operation is not as simple as it sounds, particularly when a building is made up of regular stone blocks coated with plaster. The plaster, moulded on the outlines of the ornamental reliefs, is itself covered with paintings which do not correspond in size or form with the surfaces beneath them.

It is thus impossible to remove the stones one by one without destroying an essential decorative element or at the very least seriously damaging something that has come down to us, despite religious feuds, wars or neglect, through thousands of years. A case in point is the



MASSIVE STONES from Debod temple are moved by cranes and manpower (above). Both Debod and Taffeh temples have found a temporary home on Elephantine Island, opposite Aswan, where they have been boxed and stored (right) awaiting eventual reconstruction at another site.



Unesco — Van der Haagen

charming temple of Amada. To plan the safety of this rare treasure France recently set up a special mission supervised by an Inspector General of Historic Monuments.

Another country, the Federal Republic of Germany, has decided to carry out the complete removal of the great Graeco-Roman temple of Kalabsha — an ambitious operation likely to pose many problems. Kalabsha, like other temples dating from the Graeco-Roman period in Nubia, is built close to the river bank and for the past 50 years or so it has been swallowed up for nine months out of every 12 by the waters of the Nile. The fact that its paintings have not survived the annual immersion has at least disposed of one of the dismantling problems.

It was to monuments of this type that the Antiquities Service of the United Arab Republic turned its attention when it discovered that two small Graeco-Roman temples situated near the spot height 100 metres above sea level would be freed by the waters for only a few days during the next two or three summers. They had to be saved while they were still accessible.

Without waiting for a foreign mission to embark on the rescue of these sites, the Antiquities Service, helped by the Documentation Centre and several Polish, Belgian and French specialists, undertook to dismantle the Debod temple and to uncover in a basin at the Kalabsha channel the remains of the Taffeh North chapel which had long since collapsed and was hidden under the mud of the Nile.

Between July and September 1960 the teams hastily surveyed and collected information at these two sanctuaries, while specialists numbered the blocks of stone, traced their positions on reconstruction plans, packed every painted or inscribed stone in cases, established index cards for each piece and then took away all this material.

In many cases the cement used in the restoration work dating from earlier this century and supervised by Gaston Maspero, the then Director of the Egyptian Antiquities Service, which held the blocks together during their annual immersion, was found to be more solid than the rocks. This made dismantling even more delicate.

Working all day under the pitiless sun in the stifling, airless desert atmosphere, harassed by the knowledge that the waters would soon rise again and forced to live in overcrowded conditions on their boats, the teams nevertheless finished their task in time and brought to Elephantine Island the cargos of stones in their wooden cases.

These temples of Debod and Taffeh have been designated by the Government of the United Arab Republic as gifts for countries which contribute actively to the work of saving Nubia's monuments. They are not to be reconstructed in Egypt. Instead their stones together with all the scientific and technical documentation concerning them will be handed over to new guardians.

In addition, the Ministry of Culture decided to dismantle and carry away the Kertassi chapel, taking advantage of the equipment that had been brought to Nubia for the original removal operations (boats, scaffolding, etc.) and of the presence of specialists used to handling large blocks of masonry.

This operation was completed in September 1960, but before any of the walls and colonnades were dismantled teams of photogrammetric specialists made complete recordings of the chapel. Kertassi is now carefully stored, stone by stone, in packing cases. It will be raised again not far from its original site on a cliff on the west Nubian bank, overlooking the great lake.

All that can now be seen on the former sites of these three sanctuaries are traces of their foundations and beneath these the remains of earlier temples.

It is now the turn of the diggers. The recording, inch by inch, of these buildings is to be followed by studies and searches on and under the ground.

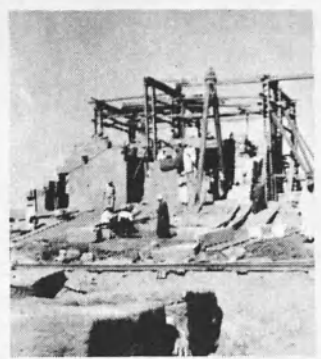
Thus a new archaeological phase is due to begin.

Fresh facts in the story of the great religious edifices of the Egyptians kings in Nubia are about to be revealed. And whether or not the archaeological prize includes gold and precious stones does not really matter. Those who search are pledged to rescue priceless artistic treasures from oblivion and to bring to light the buried pages of history.

TWENTY-THREE MONUMENTS WILL BE REMOVED

DEBOD

Small temple 10 miles from Philae. Augustus and Tiberius appear on the façade amidst the gods. Built by a Nubian king. Monumental doorway adorned with the symbolic winged sun. Offered with four other sanctuaries by the Egyptian Government in recognition of foreign aid. Debod has already been dismantled and removed to safety on Elephantine Island preparatory to re-erection elsewhere.



TAFFEH

Ptolemaic Roman period. Taffeh has just been removed, like Debod, in the traditional Pharaonic manner, by the use of human muscle, with no devices other than ropes. Taffeh is being offered by the Egyptian Government in recognition of foreign aid.



BEIT EL WALI

Rock-hewn temple contemporaneous with Rameses II. Courtyard, hall of columns and sanctuary decorated with polychrome reliefs and inscriptions. Battle scenes depicting the king in combat. Later used as a Coptic church. Will be removed.



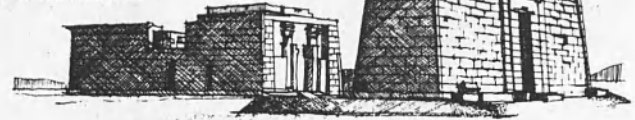
GERF HUSSEIN

Hewn out of a sandstone terrace at the behest of Rameses II. Extraordinary colossal statues in a unique regional style and probably the work of local artists. Cannot be saved. Some sections will be detached and kept in museums.



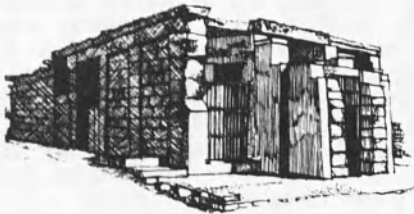
DAKKA

Built by a Nubian king during the Roman Ptolemaic period (three centuries B.C.). Decorated at different periods. Low reliefs in a perfect state of preservation. Now submerged for eight months of the year. Will be transferred.



AMADA

Belongs to the culminating period of Egyptian art. Built by the pharaohs some three thousand years ago. Harmonious lines, delicate sculpture and marvellous paintings all intact. Of great historical interest owing to its inscriptions. Must be removed in one piece. Method now being studied by France,



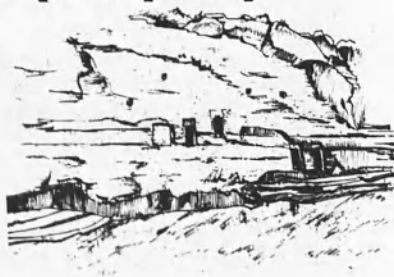
DERR

Rock-hewn temple of the time of Rameses II. Dedicated to the Sun God Ra-Horakhti. One hall is decorated throughout with reliefs filled with red iron oxide and painted. One of the five Nubian temples Egypt is offering in return for foreign aid. Will be excavated and transferred.



KASR IBRIM (Chapels)

Four rock chapels dating back 3,500 years. The two lower chapels are submerged when the Nile is in flood. Painted reliefs in the two upper chapels are still intact. Will be sawn out of the cliff in several parts and transferred to another site.

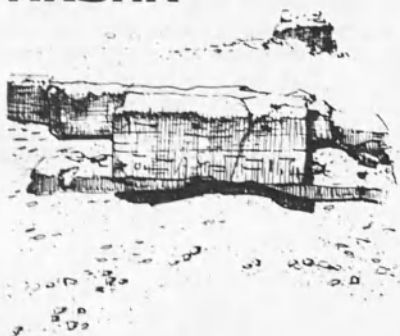


ANIBA

Pennut's Tomb. Pennut was Controller of Taxes under Rameses VI. The inner walls of the tomb are decorated with minute painted incised reliefs. To be removed in one piece to another site.



AKSHA



Not far from the second Cataract. Small temple built by Rameses II. Reliefs and inscriptions. The main scenes depict Rameses seizing two Africans. Lists of peoples of Asia and Africa conquered by the Pharaoh. To be taken to a museum.

BUHEN (Temple)



Built by Queen Hatshepsut and transformed by Thutmosis III some 3,500 years ago. Unusual colonnade alternating square pillars and round columns. Decorated inside with polychrome reliefs. Part of the huge fortress of Buhen in the Sudan. Made of mud bricks, fortress cannot be saved. Temple will be dismantled and rebuilt.

KERTASSI (Temple)

Roman temple. The kiosk must have been similar to the one at Philae. Greek and Coptic inscriptions. Now dismantled and packed in cases on Elephantine Island, close to Philae.



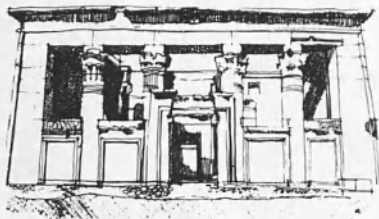
KERTASSI (Quarry)

This quarry, 28 miles away from Aswan, supplied the building stone for Philae. Its small sanctuary was hewn out of the rock by the quarriers. Inscriptions and busts of master-builders and superintendents of works.



KALABSHA

One of the finest examples of Roman Egyptian art. Known as the "Luxor of Nubia". Temple raised to Mandulis, the Nubian Sun God. The reliefs are connected with his cult. Almost as large as Notre-Dame de Paris. The German Federal Republic has agreed to dismantle and remove it.



DENDUR

Known as the Temple of Augustus, Dendur was dedicated to two heroes who were drowned. It still has its landing-stage on the Nile and its monumental doorway. Richly decorated inside and out with intaglio and low reliefs. Offered by the Egyptian Government in recognition of foreign aid.



MAHARRAQAH

Colonnade similar to those of the Roman Ptolemaic period (Philae, Kalabsha, Dendur, etc.). First described by the Swiss traveller and orientalist, John Lewis Burckhardt, who discovered the Great Temple of Abu Simbel, almost buried in the sand, in 1813. To be transferred.



WADI ES SEBUA

Temple dating from the time of Rameses II. Hemi-speos (that is, partly hewn out of the rock). An avenue of tiaraed sphinxes leads up to the pylon. Incised and low reliefs abound. Many Christian paintings attest to the transformation of the temple into a church.



ELLESYA

Speos hewn out of the rock 3,500 years ago under Thutmosis III. The inside walls are entirely covered with reliefs. Offered by Egypt in recognition of foreign aid. It will be excavated and placed elsewhere in the cliff face.



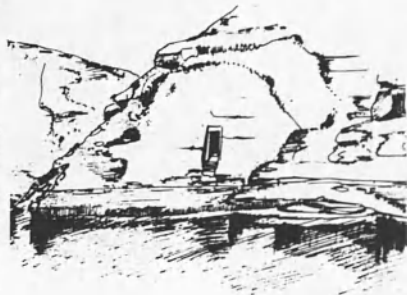
KASR IBRIM (Church)



The church stands within fortress. Some of the stones were doubtless taken from an earlier Egyptian temple. A column of Aswan granite is still standing near the apse. Ornamental motifs on the arches. To be dismantled and rebuilt nearby.

ABU ODA

Temple hewn out of the rock in 1325 B.C. Converted into a church in Christian times. Some of the paintings that covered the Pharaonic reliefs still exist, including a large Christ on the ceiling. Will be transferred in separate parts to a specially prepared site.



JEBEL SHAMS

Tiny rock-hewn chapel dedicated to the Nubian Prince Poeri some thousand years before our era. Poeri was known as the Royal Son of Kush. He occupied the important post of Royal Fly-flapper. A statue of Rameses the Great was set up in the chapel. All the figures face this statue.



SEMNA WEST

Imposing fortress built two thousand years before Christ. With Semna East it defended the southern frontier of Egypt under the Middle Kingdom. Temple built by Thutmosis III. Numerous coloured incisions and reliefs. To be transferred to a nearby cliff on the opposite bank of the Nile.



SEMNA EAST

Temple of Sudanese sandstone built under Thutmosis III. Inscriptions and reliefs. In the West basement, hieroglyphs cut into the rock recall the fact that in 1800 B.C. the flood level of the Nile was 26 feet higher than it is today. It is assumed that the oldest dam in history existed towards the rocky spurs of Semna. The temple will be removed.



JOURNEY TO THE LAND OF KUSH

by Rex Keating

OUR train was running slowly across a plain; it was a sandy plain blown into wavelets by the strong north wind which whistled through the cracks in the carriage windows. The train travelled slowly otherwise it would have torn up the tracks. Inside the compartment, choking dust hung in the air like a mist. Outside, through the carriage window, tinted as a protection from the harsh light, three colours were dominant, the yellow of the sand, the blue of the sky and the purple of the rocks lining the horizon. Harsh colours all. In this stretch of desert south of Wadi Halfa in the Sudan, nothing grows, because here it rains perhaps only once in ten years.

Over to the west of the railway flows the river Nile, through landscapes no less harsh and forbidding. This land was known to the ancient Egyptians as Kush : today we call it Sudanese Nubia. The great lake which will build up behind the new High Dam at Aswan will flood far south through Egyptian Nubia, across the border into Sudanese Nubia, where it will engulf first the Wadi Halfa district, then the Second Cataract, finally to end just short of the Third Cataract, which is the extreme limit of the flood, some hundred miles inside the Sudan.

WHAT makes Sudanese Nubia so important to archaeologists? Professor W.B. Emery of London University has answered this question. "It is the ancient towns, the cemeteries and the old fortresses of Nubia," he says, "which cannot be considered beautiful but which are absolute treasure houses of information about the life, conditions, hopes and aspirations of our forebears. These remains must be explored and excavated without fail."

A few months ago, I found myself in one of those forgotten fortresses high above the Cataract. It was Shelfak, picturesquely named by the ancient Egyptians—"Curbing the Foreign Countries." In this timeless setting the past assumes almost tangible form and I found myself picturing an Egyptian sentry of long ago looking out over the river to the hostile desert beyond.

The wind was blowing strongly, whistling among the rocks and sending up swirls of black dust from the mud bricks of the sentry-walk below my shoes. With the wind in my face, I looked towards the north along the length of the Nile, and there about a mile away, was a rocky island, bigger than most and rising to a peak. Growing out of the peak was another fortress, its every detail visible clearly in the crystal atmosphere.

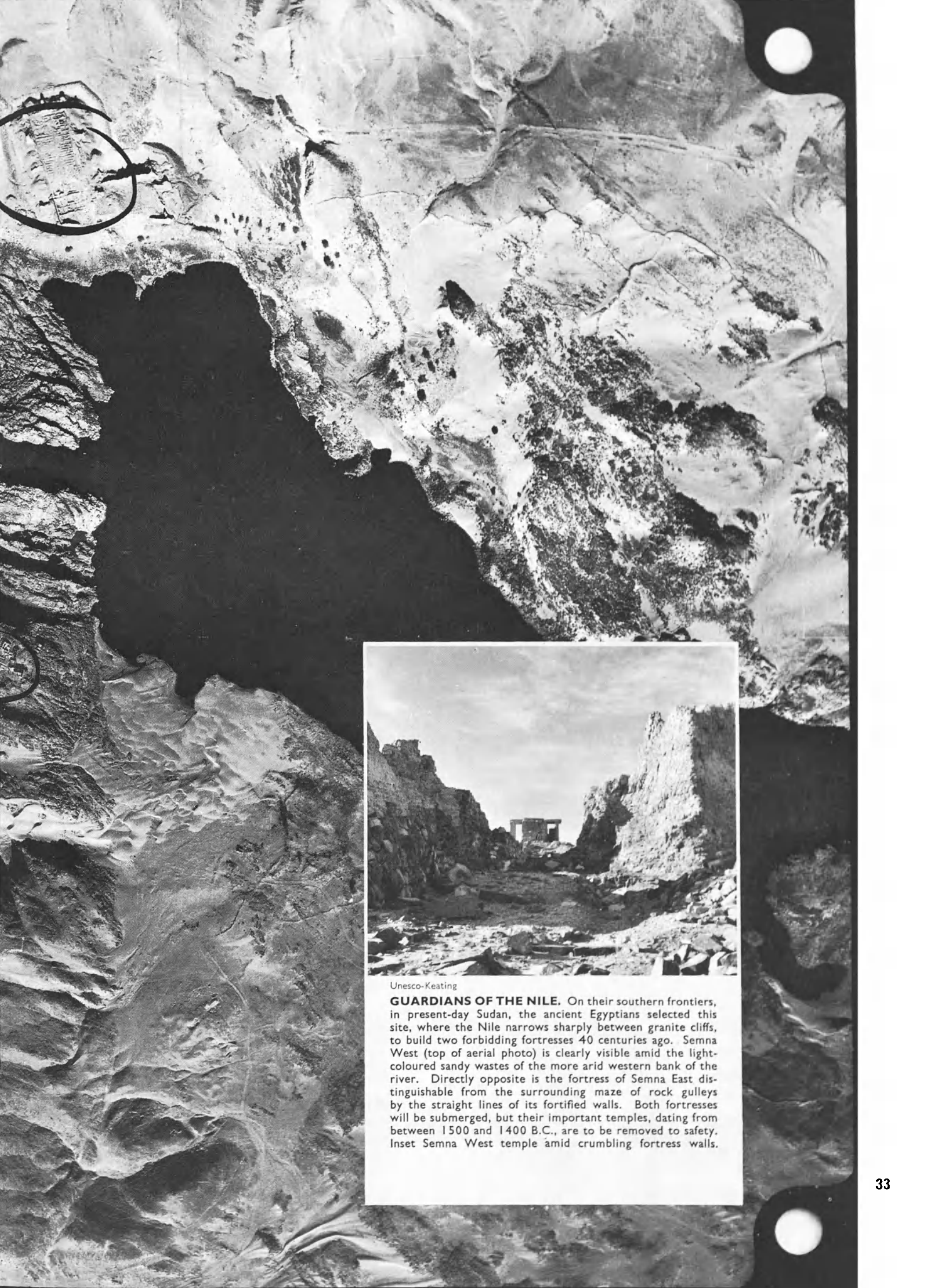
My ancient Egyptian sentry would have seen the rocky peak, but he would not have seen the fortress, because this was built some 3,000 years after his time by a Christian kinglet of Nubia. Neither would he have seen yet another fortress, built at the end of the nineteenth century A.D. by Kitchener in his advance against the Dervish armies.

From this remote Nubian fortress, one can span four thousand years of history. Forty turbulent centuries of life along the banks of this stretch of the Nile. For this was always a great highway between the Mediterranean civilizations of the north and Africa to the south.

Armies have struggled along it for close on 5,000 years,

CONT'D ON PAGE 35





Unesco-Keating

GUARDIANS OF THE NILE. On their southern frontiers, in present-day Sudan, the ancient Egyptians selected this site, where the Nile narrows sharply between granite cliffs, to build two forbidding fortresses 40 centuries ago. Semna West (top of aerial photo) is clearly visible amid the light-coloured sandy wastes of the more arid western bank of the river. Directly opposite is the fortress of Semna East distinguishable from the surrounding maze of rock gulleys by the straight lines of its fortified walls. Both fortresses will be submerged, but their important temples, dating from between 1500 and 1400 B.C., are to be removed to safety. Inset Semna West temple amid crumbling fortress walls.



From the ruined walls of this ancient Egyptian fortress at Shelfak in Sudanese Nubia the eye spans 4,000 years of turbulent history along the stretch of the Nile it once guarded. On a rocky island (upper centre) are the remains of a fortress built about 1,000 years ago by a Christian kinglet of Nubia. Away on the horizon is yet another fortress, built by troops of General Kitchener in his advance against Dervish armies in the late 19th century.

This flat-bottomed boat crossing the Nile to once strongly fortified island of Uronarti in Sudanese Nubia is almost identical to the ones used by the soldiers of the Pharaoh Sesostris nearly 4,000 years ago.

HIDDEN SECRETS OF THE SECOND CATARACT



The discovery a few years ago of the great fortress of Buhen near Wadi Halfa revolutionized previous conceptions of Pharaonic military architecture. Here, workers continue the excavation of its vast fortifications which once kept careful watch over the strategic area around the Second Nile Cataract, dividing Upper and Lower Nubia.

The people who dwell today near the Second Cataract of the Nile offer living examples of Nubia's remote past. Their lives are rooted deeply in unbroken threads of tradition. Below, typical portal decoration of a contemporary Nubian house containing symbols and emblems some of which date back through the Christian era to Pharaonic times.



All photos Unesco Keating

the soldiers of Pharaoh, the dark-skinned warriors from the kingdoms to the south, Greek mercenaries, sweating Roman legionaries, the troops of Islam, the helmeted men of Kitchener's army—5 000 years of marching and countermarching.

I reflected that at last peace was to come forever to this land, for Nubia with its rocks, its temples, its fortresses, its memories of a past incredibly remote, is doomed to vanish beneath the rising waters of the Nile, the river which has given it life from the beginning of time.

But Sudanese Nubia holds more than monuments and relics: it contains the people of the Second Cataract and they are a living example of life in Nubia's remote past, as Mr. L.P. Kirwan, Director of London's Royal Geographical Society, recently told me.

Towards the end of the 19th century the railway from Wadi Halfa struck off across the eastern desert, leaving these people in a great bend of the Nile and creating an archaeological museum filled not only with monuments but with memories of the past.

Their folklore is fascinating in this respect and it links up with archaeological discovery and literary evidence but, as Kirwan pointed out, the people of the Second Cataract must leave their ancient land before the waters close over it. They are to be moved to an area some hundreds of miles away and inevitably the unbroken threads of tradition rooted deep in their homeland will be severed. Within a generation or so the folklore and traditions will be lost so it is important for a social anthropology survey to be made before the exodus gets under way.

Kirwan feels that any such survey should note carefully the architecture and decorative designs of modern Nubian houses: some of the emblems used date right back through the Fung Kingdom of the 15th century to the early Christian era and earlier still to Pharaonic times.

I MYSELF found an example of these enduring traditions in the heart of the Second Cataract. From the Semna fortresses I had followed an ancient wall running north along the river bank for about seven miles to a point opposite the island fortress of Uronarti ("Arti" is Nubian for "island"). I shall never forget the setting.

The island is long and narrow, close on a mile in length, and the fortress springs from a crag high above the Nile at the northernmost tip of the island. The black rocks dazzle the eyes, their surfaces polished to a metallic hardness by immemorial floods. Here the Nile runs swift and deep.

We crossed in a boat as broad as it was long, flat-bottomed, and of a construction unfamiliar to me. And here the Second Cataract yielded up one of its many secrets. Professor Torgny Säve-Söderbergh of Upsala University, Sweden, with whom I was travelling, explained that this boat was built in the tradition of ancient Egypt as depicted on the walls of the tombs. So we sailed across the Nile to the Island of the King, Uronarti, on a craft that would have been familiar to a soldier of the Pharaoh Sesostris, looking down from the sentry-walk high above our heads.

Another fortress on the horizon, built some 3,000 years after Sesostris' day was a reminder that Christianity endured in this part of Nubia for close on 800 years, until the increasing pressure of Islam finally overwhelmed it and the many churches and monasteries fell into ruin.

A few days later, in Khartoum, Professor P. Shennie of the University of Ghana spoke to me about this fascinating period of history. He pointed out that the Christian kingdoms of Nubia, lasting from roughly the middle of the 6th century till at least the 14th, are hardly known.



A Unesco Radio and T.V. expedition, led by Rex Keating, last year visited the threatened sites in Egyptian and Sudanese Nubia. Here Rex Keating descends a street of the ancient fortress of Semna West (Sudan) while other members follow with gear and equipment. Temple is seen on the skyline.



The Rock of Abu-Sir at the entrance of the Second Cataract of the Nile in the Sudan overlooks the ancient Nubian highway along which, for close on 5,000 years, soldiers, merchants, travellers and pilgrims have passed

LAND OF KUSH (Cont'd)

ISLAND WORKSHOP OF STONE AGE MAN

They begin with the coming of missionaries from Byzantium, sent by the Emperor Justinian in the middle of the 6th century, who came up through Egypt to the then pagan peoples of Nubia.

Still in existence are the writings of the Syrian, John of Ephesus, which give a vivid account of the coming of one of these missionaries, of how he suffered from the heat and hid himself in a cave with his feet in a basin of cold water to keep cool during the hot weather, an action with which many of us who know the Sudan during the summer months will be in great sympathy.

On many of the little ruined churches of the area are frescoes of gods, of the Virgin, of saints, all showing very strong Byzantine characteristics. The pottery of the people is also of extremely good quality, a fine painted ware with many motives derived from the Mediterranean.

It is also interesting to see that this State maintained its theological links with Byzantium and did not subscribe to the Monophysite heresy of the Coptic Church in Egypt; as a result of this we find gravestones written in Greek, although in many cases a very bad Greek, right up until the 12th century.

Professor Shennie pointed out that these are the most remote Greek inscriptions known anywhere in the world, and it is quite clear that those who were writing them could have had no contact with Greece itself, probably for many generations.

The Nubians live in a valley of the Nile, which, since the continent of Africa attained the shape we recognize today, has been the main overland route between north and south—between the Mediterranean coast and the vast ethnic group of the Negro peoples of Equatorial Africa. Man must always have used the Nile valley as a convenient highway. Anthropologists have even suggested that Central Africa may have seen Man's first triumph over his material surroundings. This is a measure of the importance of the prehistoric sites which have yet to be discovered on the banks of the Nile.

Only two years ago near the extreme southern limit of

the area to be flooded, a discovery of the first importance was made on the prehistoric terraces of the Nile: among many animal bones, lay the jawbone of a Neanderthal man.

Traces of prehistoric man are plain to see on all sides in the Second Cataract. On the island of Uronarti, for example, Professor Söderbergh showed me what he described as a "Stone Age workshop." There lying on the surface were typical mesolithic implements. Professor Söderbergh remarked that Uronarti must have been inhabited for tens of thousands of years and that before it was lost it must be surveyed and excavated so that its whole history might be revealed.

This deserted island in its harsh and lifeless, yet austere beautiful, setting, induces a fascination that is curiously disturbing. On all sides are tangible signs of the generations of men and women who once lived here, stretching back to the shadowy dawn of history and far earlier, for possibly fifteen thousand years and more. By comparison, the Middle Kingdom fortress on its crag is a manifestation of the modern world.

The earliest of the peoples of ancient Egypt regarded the area south of Wadi Halfa with awe. Its inhabitants were the fierce cattle owners against whom they built the immense fortresses which still stand along the length of the Cataract, spectacular even in their ruin. Yet a thousand years before the fortresses frowned over the river, travellers and expeditions from Egypt came this way.

Standing back from the river Nile is an isolated hill; a shoulder of rock fallen from the hill above and standing a yard or so away from it, conceals on its inner face an inscription. This is by far the earliest inscription in Sudanese and Egyptian Nubia and it records in archaic hieroglyphs that an expedition sent by King Djer of Egypt passed this rock on its way to the south. King Djer was the third king of Egypt's first dynasty, an incredibly remote figure who ruled at the very dawn of Egypt's history some 5,000 years ago. Yet here, in effect, is his signature, a clear indication that he did once exist.



Photos UNESCO-Keating

between the Mediterranean civilizations to the north and those of Central Africa to the south. Here, along the length of the Second Cataract, the peoples of Ancient Egypt built a series of immense fortresses.

Ancient hieroglyphs and carvings on this rock slab at Jebel Sheikh el Suleiman, in the Sudan, are the oldest inscriptions yet found in Sudanese and Egyptian Nubia. Some 5,000 years old, they record that an expedition sent by King Djer, third monarch of Egypt's first dynasty, passed the rock on its way south.

On the rocks round about are other inscriptions, left by travellers, armies, expeditions, traders, who passed this way during the next 2,000 years or so, but it is the Djer inscription with its archaic lettering that stirs the imagination. Who led the expedition of King Djer and how big it was, we shall never know. But we do know that they were very brave men. They believed, in those early days, that they were venturing into what they called "the Land of Ghosts," a territory of nameless terrors, where giants and pygmies lived and monstrous animals. Worst of all, they were venturing to the very edge of Amentat, the dreadful "Abode of the Dead." How many similar rock inscriptions remain to be discovered?

On the site of an archaeological excavation in Sudanese Nubia, I watched the workmen carrying away the sand and singing with the voice of Africa. They could hardly have known the significance of the objects they were helping to uncover, yet these objects may one day reveal knowledge of profound importance to scholars wishing to trace the influences which have fashioned Africa. I suddenly recalled that a few weeks earlier, in south-west Sudan, a thousand miles from Nubia, I had recorded a mountain people singing with rhythms that carried faint echoes of the Nubian song.

All over West and Central Africa strange similarities of form have appeared in widely separated areas. The ancient name of Kush is still preserved in the names of Nubian-speaking peoples living today in south-west Sudan. There are the Kagiddi, for example, who believe, they came from the east under the leadership of a queen, who they say is buried in a large mound grave in Jebel Meldot. The queen was probably one of the last monarchs of defeated Kush, in other words the Nubian Kingdom of Meroe, which lasted nearly 1,000 years from about 600 B.C.

The Kushites were great iron workers. Their capital, Meroe, has been called the "Birmingham of the ancient world" and from their factories, weapons and objects of iron spread across Africa, influencing profoundly the neighbouring African cultures of that day. They have left many indecipherable inscriptions: it is possible that in Nubia lies buried the key to the Merottic tongue.

To this day in Benne City, Nigeria, bronze objects are being made which recall strongly some of the bronzes made in Meroe and Egypt to commemorate the Egyptian god, Amon. From Ghana too, come two bronze lamps

which strongly resemble the lamps found in burial mounds of the 5th Century A.D. in northern Sudan. These are faint hints, but significant.

The link, Professor Säve-Söderbergh maintains, is to be found in Nubia, on the banks of that 300-mile stretch of the Nile which the High Dam will submerge.

Professor Emery described Nubia to me as the cockpit of the ancient African world. From the north, the Egyptians, representing the highest civilization of that time, were pushing south to exploit the gold mines and to trade in ivory, precious woods and other products.

"The people of the south, whose culture, as we are beginning to realize through recent excavations and research", Professor Emery added, "was by no means negligible, were pushing north to the more fertile parts of the valley of the Nile. Consequently there was an almost continuous state of warfare between the peoples of the north and the south, and the results of the battles between them, small as they were in comparison with our modern conflicts, have greatly influenced the course of European civilization and, through European civilization, that of the world at the present time."

At the University in Khartum, L.P. Kirwan explained why he considered the excavation of new sites in Sudanese Nubia to be of the greatest importance.

"This is going to produce world history," he said. It is going to add to the history of Africa, not only of the Sudan but also of Africa as a whole. This is a subject which is of increasing interest to African students and African peoples as they emerge into independence.

"The time for all this work is extremely short and every effort will have to be made by the nations of the world to save history from the floods, so to speak, and to preserve the cultural heritage of this part of Africa for future generations."

We should indeed be grateful for the building of the High Dam for it has drawn the attention of scholars the world over to this forgotten reach of the Nile. Of the slow progress of man from his first faltering steps on the tortuous path towards civilization, every foot of the river's banks bears evidence, either above ground or below. Here truly is an opportunity unique in the fields of pre-history, anthropology and archaeology. We now await the testimony of the spade.

NUBIA'S CHRISTIAN AGE

by L. P. Kirwan

Laurence Patrick Kirwan first began exploring and excavating in Nubia in 1929, when he became Assistant Director of the Archaeological Survey of Nubia undertaken by the Egyptian Department of Antiquities. He later participated in numerous expeditions. Since 1945 he has been Director of the Royal Geographical Society, London.

WHEN we think of Nubia, and the famous historic monuments that are now in danger from the High Dam, most of us think mainly of the great temples of Abu Simbel and Philæ, built by the Pharaohs several thousand years ago. Certainly, these rank with the most splendid monuments of the ancient world. But they, and other smaller temples and buildings of similarly ancient date, are not the only relics of early Nubian civilization in danger of being submerged by the rising waters of the Nile.

In style and origin, these memorials of the Pharaohs are not Nubian at all. They are Egyptian; projections of ancient Egyptian art and architecture into a conquered land; a land which belongs, unlike Egypt north of the First Cataract, to the African rather than to the Mediterranean scene.

By contrast with these Pharaonic monuments, there are many other relics of ancient and mediæval times, more truly Nubian in character. Some belong to the Sudanese kingdom of Meroe, which ruled during the Græco-Roman Age over most of the Sudan and most of Lower Nubia from its capital, Meroe, a hundred miles or so north of Khartum.

Others belong to Christian Nubia, to the era of the Christian Nubian kingdoms. These flourished from 542 to 1323 A.D. and thus endured for seven hundred years after the Moslem conquest of neighbouring Egypt.

This age of Christianity in Nubia was one of great

prosperity and power. Thriving cities and townships, churches and monasteries, were thickly clustered along both banks of the Nile. The administration of Church and State alike was elaborately organized, largely on Byzantine lines. A Nubian school of painters flourished and adorned the walls of the domed and vaulted white-washed Nubian churches with religious scenes in brilliant colours.

Seldom, in the course of their long history, had the Nubian people, in architecture, in art, in civil and military organization, in the independent development of a national consciousness, achieved such a high level of advancement as during this Christian Nubian age.

If further evidence of the strength of these Christian kingdoms is needed, then it can be found in the obvious respect which the Arab rulers of Moslem Egypt paid to the Christian Nubian kings, and in the formidable barrier which Christian Nubia presented, over the centuries, to the southward flowing tide of Islam.

The first of the Nubian kingdoms to be converted to Christianity, between 542 and 545 A.D., was the northernmost, and the most powerful, kingdom of Nobadia. It extended from the First Cataract, the southern frontier of Egypt in mediæval times, as far south as Akasha, beyond the Second Cataract. It thus covered the three hundred miles or so of Nubia which will be flooded by the High Dam.

The Nobades, as the people of Nobadia were called,

ST PETER (below) replaces Egyptian gods to which Rameses II (still depicted on right of niche) is offering flowers in the temple of Wadi es Seba. Nubia was christianized in the 5th and 6th centuries and the temples were often converted into churches. Much of the former decoration was left alongside the Christian imagery.

EARLY CHURCH which was built inside a Middle Kingdom fortress at Serra East in the Sudan. The architecture reveals a marked Byzantine influence, as does the painting. It was missionaries from Byzantium who spread the Gospel in Nubia. The Christian kingdoms of Nubia held out some 700 years after Egypt's conversion to Islam.



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Unesco-Laurenza



Unesco-Keating

CHRISTIAN NUBIA is being thoroughly excavated. Coptic churches, monasteries and fortified towns will undoubtedly contribute to our knowledge of the mediaeval Christian world. Faras, left, was once the capital of the Christian kingdom of Nobadia. (See page 38.) In the background, are ruins of a Dervish fort and a church.

were a warlike people; armed tribesmen riding horses and camels who had often in the past been a menace to the Egyptian frontier garrisons. In the years immediately preceding their conversion to Christianity, however, the Nobades appear to have been on reasonably good terms with their Christian neighbours in Byzantine Egypt.

They traded with Egypt, and their tombs in Lower Nubia contained many remarkable treasures of silver, bronze and gold from the workshops of Alexandria and the Hellenistic world. Perhaps because of this, they were sufficiently well-disposed to accept peacefully the closing of the pagan temples at Philæ on the Egyptian frontier in 535 A.D., though the shrine of Isis there had been the Mecca of Nubian pilgrims for generations.

WHEN the first Christian missionary, Julian, arrived in Nubia from Turkey a few years later, bearing letters from the Imperial Court at Byzantium, he and his companion, Theodore, the aged bishop of Philæ, were received not with hostility but with considerable ceremony by the Nubians and their king.

The task confronting Julian, as we know both from archaeological discoveries and from a contemporary account of his adventures, was far from easy. The climate, torrid and rainless, he found exceptionally trying after the cooler airs of Istanbul.

Then there were the Nubian people themselves. Like their predecessors in the days of the kingdom of Meroe, they were still fervent worshippers of Isis and other Egyptian deities. Even at this late date, moreover, when their neighbours in Egypt and Ethiopia had been Christian for two centuries, the Nobades continued to indulge not only in animal but in human sacrifice, in the primitive belief that horses and camels, slaves, courtiers and wives alike must die when the king died, so that they might continue to serve their master in the After World.

However, despite the rigours of the country and the climate and such deeply rooted pagan practices, Julian, his successor, the missionary, Longinus, and other missionaries whose names we do not know, spread the Gospel, throughout Nobadia, and even beyond, across the desert, and as far as the distant kingdom of Alodia, the Arabic Aloa, whose capital, Soba, lay near the junction of the Blue and the White Nile.

The first visible result of their preaching, as archaeology shows, was the conversion into churches of the pagan temples of Lower Nubia; the small temple of Rameses II at Wadi es Sebuia, for example, and the temple at Dendur, built by the Roman Emperor Augustus, which was rededicated as a church in 559 A.D. Then, or soon after, came the building of the first churches in Nubia, at Faras, near the present Sudanese-Egyptian border, and at Kasr Ibrim, both influential centres in earlier times.

Radiating from such ancient centres, destined to be included among the sites of the six or seven Episcopal sees

of Nubia, Christianity spread to the countryside and by the early years of the seventh century Nubia, outwardly at least, was a Christian land.

Greek was probably the language of conversion and of the liturgy and prayers of the early Church and this, like the distinct traces of Byzantine influence in religious painting and architecture, reflects the predominantly Byzantine rather than Coptic (or Egyptian) character of Nubian Christianity in its earliest phase. Probably after the middle of the seventh century, however, as the result perhaps of a great influx of Christian refugees from Egypt, Nubia swung over to Coptic Church doctrines.

The student of Christian Nubia has some rich sources of information to rely upon: literary, and archaeological too, in the churches, monasteries, palaces and walled cities whose impressive ruins can be seen today all along the banks of the Nubian Nile. Many of these were explored by the eminent Italian scholar, the late Professor Ugo Monneret de Villard. His pioneer work before the last War laid the foundations of the history and archaeology of Christian Nubia.

His explorations, illuminating as they were, were of necessity often superficial, being carried out with few resources and in haste, in anticipation of the last raising of the present Aswan Dam.

Now, under the infinitely greater and imminent threat of flooding from the High Dam, more than superficial exploration is needed if we are to solve the remaining mysteries of Christian Nubia. At least one of the principal centres of occupation should be fully excavated: a centre such as Faras, the early capital of the Christian kingdom of Nobadia, where I myself made some trial explorations early last year. The need to date chronologically the very remarkable painted pottery of Christian Nubia would alone make this worth while.

RUINED churches must be surveyed, planned and studied architecturally. The delicate remains of frescoes, like those which adorn so brilliantly the walls of the little church of Abd el Kadir near the Second Cataract, must be removed and preserved.

Tombs, some of them pillared, and cupola tombs like those at Kasr Ibrim, must be explored and their skeletal remains studied so that we may learn something of the racial origins and characteristics of the Christian Nubians. Tombstones too must be rescued from the flood for these often contain prayers for the dead of great interest to the student of the liturgy of the early Church.

Since archaeology is almost impossible during the Nubian summer, little time remains in which all this must be done. That it should be done, that it should not be overlooked at a time when the flood-lights play principally on the world-famous monuments of Ancient Egyptian Nubia, is urgent. Then, a new chapter will be added to the history of Christianity in Africa and a new page to the history of the mediaeval Christian world.



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TWO MAGNIFICENT MURALS, their colours as fresh as when they were painted, have been discovered at Faras West by Professor Michalowski heading an expedition from the Polish Centre, Cairo. One picturing St. Michael (left) is now at the Wadi Halfa Museum. The Polish expedition also unearthed two Christian chapels in this area dating from the fifth century. Below, recently excavated Christian pottery kilns at Faras North.



Unesco - Keating

ARCHAEOLOGICAL CAMP (Cont'd from page 25)

SPADES REVEAL CITIES UNDER CITIES

Sites not previously allotted between Ermenneh and Sudanese border - Oriental Institute, Chicago.
 Faras West - Polish Centre, Cairo.
 Aksha - Franco-Argentine Mission.
 Serra-East - Oriental Institute, Chicago.
 Argin - Spanish National Committee for Nubia.
 Sites between the Egyptian border and Gemal (north of Wadi Halfa) - Joint Mission of the Scandinavian countries.
 Buhen - Egypt Exploration Society, London.

On the other hand, some finds have filled important gaps in history generally or the history of art.

While excavating cemeteries of various periods at Aniba, Professor Abdel Moneim Abu-Bakr of Cairo University made some interesting discoveries concerning methods of burial and the occurrence of epidemics which ravaged Nubian villages. The most diverse objects were retrieved from tombs. Unsophisticated in style and crudely finished, they tell us much about the beliefs and artistic talents of the people who made and used them.

The discovery of the tomb of Heka Nefer, Prince of Miam, at Toshka East, was a disappointment. It proved to be in a very bad state of preservation. It did at least yield some details concerning a high-ranking contemporary of Tutankhamon whose name was known to us solely by a rock inscription, also at Toshka, and a picture on Huy's Tomb at Thebes. Now we know that Prince Heka Nefer was buried in Nubia—as was Pennut two centuries later, under the 20th dynasty. The leader of the Yale and Pennsylvania Universities mission, Mr. William Kelly Simpson, was unable to find the Prince's remains at the bottom of the tomb well, but he did unearth five of the funerary statuettes. The two finest are of stone and bear classical inscriptions. (See p. 24.)

The lengthy list of allotments (see p. 25) gives some idea of the importance archaeologists attach to excavating in Nubia. Egyptologists all over the world interrupted lecture series and personal research and even sacrificed vacation time to respond to the Unesco appeal. The main attraction, was the possibility of filling in some of the gaps in our knowledge of a region which has harboured so many different civilizations.

Very often new cities were built on top of or beside old ones. After Debod and Taffeh Temples were removed, for instance, excavations were begun under their foundations. Cemeteries and fortresses are also being excavated with the hope of bringing to light older buildings. As a result of international co-operation the history of Nubia's various civilizations may at last be elucidated.

No extraordinary finds were expected—at least in Egyptian Nubia. The excavations carried out from 1907-1912 and from 1929-1934 undoubtedly yielded the most important in Egyptian Nubia. Similarly, at Buhen fortress in the Sudan, Professor Walter B. Emery had already been excavating over a number of years. Furthermore, Nubia was never the centre of an original civilization, except when the rulers of Ballana-Qustul controlled the route between Upper and Lower Nubia. Yet already within a few weeks the efforts of scientific expeditions produced archaeologically interesting results.

Some results have been negative in the sense that so little was discovered—e.g. Khor Dehmit-Kalabsha, Wadi es Sebu, Amada, the east bank of Abu Simbel—but it was at least proved that the previous excavations had been thorough.

Fragments of a long inscription were also found at Akasha, in the Sudan, by the Franco-Argentine mission. Professor Rosenwasser believes that it is a copy of the famous decree of Ptah engraved on the wall between two pillars in the Osirian hypostyle hall of the Great Temple of Abu Simbel.

The main finds made by Professor Leclant, leader of the Strasbourg University mission at Tomas, concern the Meroitic culture (6th century B.C.), of which much evidence had already been brought to light, especially at Ballana-Qustu, and even in the Sudan. Professor Leclant's finds include a big stele with a 24-line inscription and a sacrificial table inscribed on its whole circumference. These texts are still being studied, but it is as yet impossible to judge their importance.

At Faras, Professor Michalowski, head of the Polish Centre in Cairo, found two Christian chapels. Of the four steles he discovered, two indicate that Sudanese Nubia was being Christianized at the end of the 5th cent. The oldest commemorates the first bishop of Faras—or one of the first. It is dated 606.

Archaeologists are understandably reassured with every season. Their enthusiastic response to the Director-General's Appeal was not inspired by a desire to rewrite the history of Nubia, already known in outline. Their sole aim was to salvage the remaining documentary material and to elucidate certain obscurities by conducting thorough excavations before a field so rich in vestiges of successive civilizations was forever engulfed. In this they will soon have succeeded.

Letters to the Editor

Sir,

What a joy to receive your June issue, at long last devoted to Latin America. What a disappointment to note once again the total lack of knowledge concerning my country, Argentina, which according to the literacy statistics published on page 33 is in front place ahead of all of its sister nations of America, is referred to only four or five times in the whole issue—and then only in a passing manner. San Martín gets a mere “postage stamp” photo, and you overlook completely his interview with Bolívar at Guayaquil. Buenos Aires, the largest capital city south of the Rio Grande and one of the most populous cities of the world, is portrayed by its underground “tube” with the worst, out-of-date photo when there are so many other stations artistically decorated with painted tiles which are our pride and admiration. Buenos Aires, modern buildings, its theatres (among these the General San Martín Theatre just completed, probably the largest and technically most modern of all South America), its throbbing cultural life—all these do not exist for your magazine. The Colon Theatre, on a par with the Paris Opera and the Metropolitan of New York, our enormous agricultural and cattle potential, the growth of our industries, particularly automobiles, our iron and steel industry, in a word, our fantastic economic development has been omitted, I hope, for a future issue. Congratulations to your photographer Almasay. But it is a pity that no one showed him some of the things which we here consider essential to know.

**Julio Cesar Saenz
Hurlingham
Buenos Aires Argentina**

Sir

Congratulations for your issues in general and the Latin-American number in particular. But why devote several pages to General Simón Bolívar and say so little about General José de San Martín.

The eternal glory of the great “Captain of the Andes” is not, of course, affected in the least by this “mistake” of The Unesco Courier. But your magazine has a world-wide circulation and in countries where the history of Latin-America is little known or unknown, the impression will be conveyed that the Venezuelan hero is the main historical figure of the continent, or “the liberator of Latin-America” as you call him. And this is false.

The greatest figures of the American continent were San Martín in Latin America and George Washington north of the Rio Grande. Both

reached the pinnacle of power and withdrew with their moral greatness and prestige intact. The same cannot be said of Bolívar, whose military genius covered him with glory, but whose at times turbulent life saw triumph mixed with tragedy and defeat.

Let it be clearly understood that I am not denying the greatness of Bolívar, but I do deny that he is the greatest and best known historical figure of Latin America; this honour must go to the Liberator of Argentina, Chile and Perú, for whom the Cordillera of the Andes was no obstacle and who is appropriately called “The Saint with the Sword”.

**Roberto Lavagna S.
Morón, Province of Buenos Aires
Argentina**

Sir

Your issue on Latin America contains gross errors, either involuntary or deliberate, though I am inclined to believe the latter more likely because of the authors you have chosen. This is a delicate matter, since The Courier circulates all over America and Europe; in the former it will arouse justifiable anger; in the latter it will add to the confusion that generally exists with regard to Latin America.

In your map of Latin America the Falkland Islands are omitted. These belong to Argentina and the South American continent, to which they are linked by a submarine platform. The antarctic areas of Chile and Argentina, which are part and parcel of both countries, are also omitted. In this same page Andrés Bello is described as “the man who was to organize the juridical systems of the Republics which had won their independence from Spain”. Nothing could be less exact, at least as far as Argentina is concerned. Our Constitution, drawn up in 1853, was inspired by the U.S. Constitution, and our Civil Code was based on the work of the Brazilian jurist Freitas and the Napoleonic Code.

O'Higgins is described as Chile's liberator. Wasn't it really San Martín? You state that San Martín was forced to seek asylum in Europe when he fled the anarchy in Argentina. Nothing could be farther from the truth. You devote three pages to Bolívar, and write, “there is no more famous name than his in the history of Latin America”. I think this is biased and misleading. Much as we may acknowledge Bolívar's merit, it is to San Martín's initiative and courage that Argentina, Chile and Perú owe their freedom (not only the first two countries, as you state) and his renunciation in Guayaquil is what permitted Bolívar to crown South America's liberation.

You publish only a poor photograph of Plaza Mayo in Buenos Aires but many large photographs of other countries. In an issue on Latin America, you should have considered the continent as a whole, and not referred almost exclusively to three or four countries which are not the most important. The only really impartial article in the issue is the one by Dr Alfred Métraux, perhaps because he is foreign to South America, and to a lesser degree those of Oscar Vera and Tibor Mende.

I feel that Argentina, all Latin America and historical truth deserve a rectification and clarification from you—not only to satisfy our national pride, but because of the repercussion that your errors and incomplete information may have, and if you are not to lose the confidence of your regular readers in the material you publish in future issues.

**Jorge Miguel Aguilar
Muñiz, Province of Buenos Aires
Argentina**

Sir,

As a Latin American, I am grateful that an international publication such as The Unesco Courier has sought to let people from distant corners of the earth know about the aspirations and ambitions of a continent in process of constant renovation. Latin America expects, not charitable help from stronger nations, but understanding and recognition of her ideals by all peoples.

Speaking as an Argentinian, however, I have several reservations to make about the lack of knowledge of my country displayed in the articles of your Latin American issue. Surely Buenos Aires itself and Argentina in general present aspects far more important than the photograph of the entrance to an underground station, even if that underground be unique in the continent. People of other nations can hardly have any idea of what my country is like from the articles in your June issue.

**Gonzalo Fernández
Buenos Aires
Argentina**

Sir,

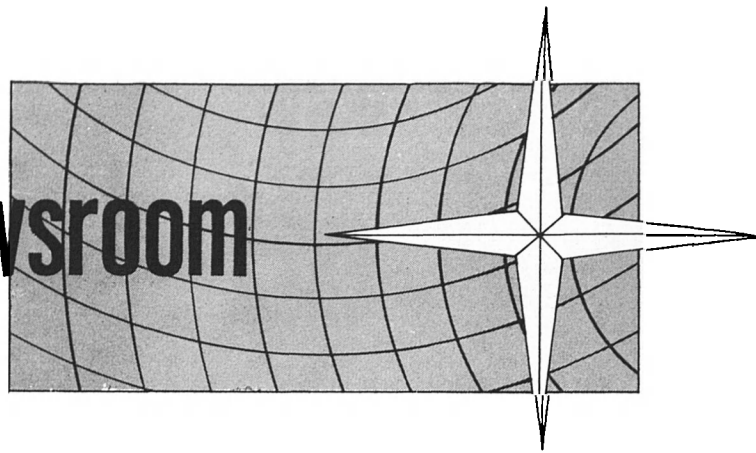
I have just received issue n° 7-8 of THE UNESCO COURIER.

I think this issue deserves a special mention. I found it excellent as regards both substance and appearance.

May I take this opportunity of asking you to convey the congratulations of the National Commission to all those who contributed to the production of this issue.

**Yves Brunsvick
Secretary General
French National Commission
Paris**

From the Unesco Newsroom



UNESCO PAYS TRIBUTE TO DAG HAMMARSKJOELD



Tribute was paid to the memory of Dag Hammarskjöld, Secretary-General of the United Nations, in a short and moving ceremony held in Unesco House in Paris on September 19. It was opened by Mr. Akale - Work

Apte Wold, Ambassador of Ethiopia to France and President of the Eleventh Unesco General Conference. Then Dr. Mohamed Awad, of the United Arab Republic, chairman of the Unesco Executive Board, took the floor to express "a feeling of consternation and grief for the loss of one who literally belonged to the whole world."

Dr. Awad singled out some of Mr. Hammarskjöld's achievements: "At the time of his appointment, the United Nations Organization was facing a difficult situation in Korea, and he was able to emerge with enhanced reputation from that experience. A few

years later, the question of Suez was one of deep concern to all the world. To that period belong two very great achievements: the opening of the Suez Canal in record time and far ahead of schedule and the creation of the first international force which helped preserve peace in a very troubled region."

Mr. Hammarskjöld, said Dr. Awad, "was able to bring about a conciliation within the greater part of the Congo, and was well on the way to complete the task entrusted to him when he fell, in the field of duty, a courageous and indefatigable warrior whose achievements qualify him for a secure place among the immortal servants of mankind."

Dr. Awad was followed by Mr. Rene Maheu, Acting Director-General of Unesco, who paid a warm personal homage to Mr. Hammarskjöld, with whom he had often worked closely:

"... far higher and more lasting than the flame which charred those horrible debris on Sunday night in the African bush", said Mr. Maheu, "the flame of that inextinguishable hope which drove him and consumed him will continue to shed light for us in our night and in our jungle."

"We shall no longer hear his voice, a soft voice restrained by a reserve which threw a veil of delicacy and kindness over the sharp-edged expression, not devoid of irony, of one of the clearest minds and most incisive wills ever to exist. But, until the end of our days and our tasks, we shall hear the call which he tirelessly echoed even in that desert where he was lost forever: the call of freedom, of human dignity and of concord."

"History will record the decisive contribution made by Mr. Hammarskjöld to the building of the United Nations and its efforts for peace and economic and social progress," said Mr. Maheu. "It was he," added Mr. Maheu, "who said one day... 'The man does not count, the institution does'. No man in our time has left a more lasting mark upon the Organization to which he consecrated himself with his exceptional talents."

Well over 1,000 people attended the ceremony, including members of the United Nations Information Centre in Paris, members of Unesco's Executive Board, permanent delegates to Unesco, representatives of the Diplomatic Corps in Paris and members of the Unesco Secretariat.

■ **UNESCO SALUTES PROBE INTO SPACE:** The following message was sent by Mr. Alvin Roseman, Acting Director-General of UNESCO, to the Chairman of the Soviet National Commission for UNESCO in Moscow on the occasion of the Soviet Union's second successful manned cosmic flight:

"The latest outer space achievement of the Soviet Union has deeply impressed UNESCO. I beg you to convey to the Soviet National Commission our warmest congratulations for this further magnificent contribution of Soviet scientists and engineers."

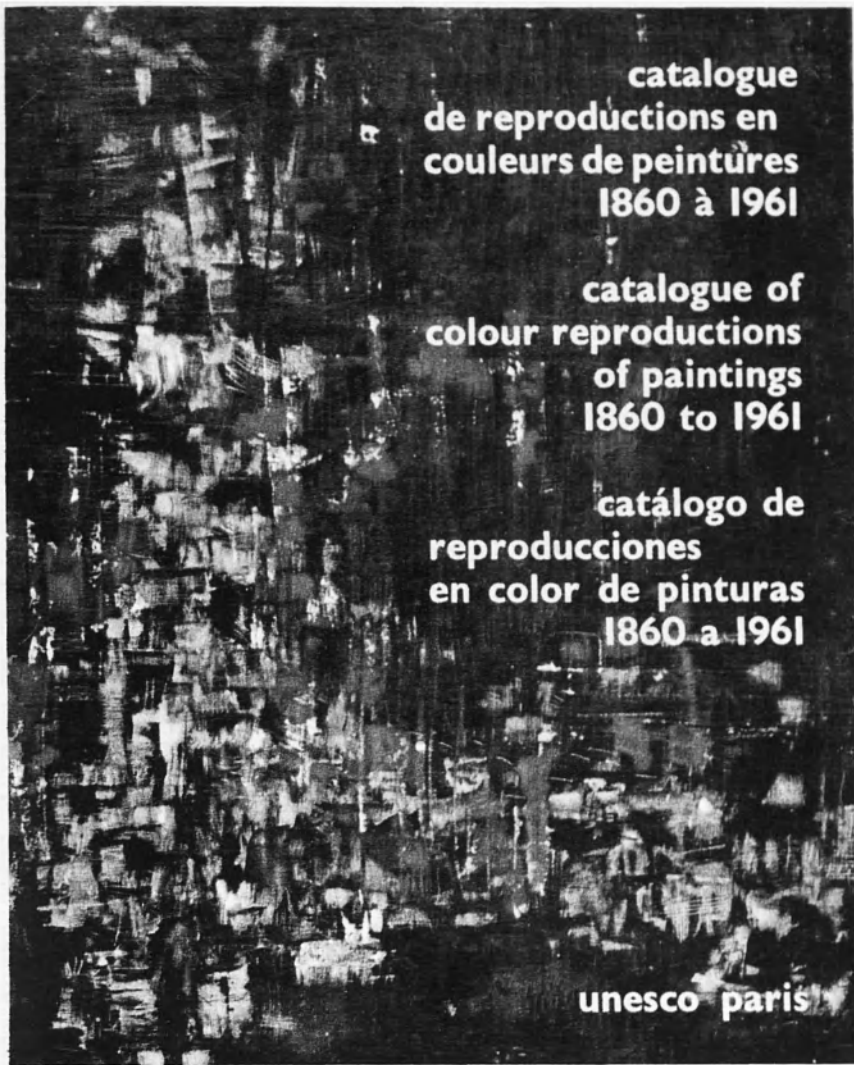
TEMPORARY IMPORTATION: The Customs Co-operation Council in Brussels recently adopted two international conventions designed to ease the temporary admission of professional and exhibition equipment. These conventions are open for signature until March 31, 1962. The first covers materials needed by representatives of the press, radio, cinema and television visiting a country for purposes of reportage, broadcasting or film pro-

duction and instruments required by experts, scholars, physicians, artists, theatre groups, orchestras, etc. The second convention covers material for display or use at exhibitions, fairs, conferences, international meetings—such as films, sound recordings, interpretation equipment, film projectors. In collaboration with the GATT, UNESCO and the International Chamber of Commerce, the Customs Co-operation Council is preparing an additional convention establishing a carnet which would replace national documents when the conventions on temporary importation are being applied.

■ **TEACHING GHANA'S GRANDMOTHERS:** If you educate a woman, you educate a family, says the old adage, and this is particularly true in rapidly developing countries where very often it is in the family, and particularly among the older women, that new ideas must take root if they are to be effective. This is why Ghana has introduced a large-scale programme of adult education for women, with classes designed to make a special appeal to

older women. Results are already being felt in home and family circles. By persuading the grandmothers and older women to accept basic new ideas the teacher is helped to implant these ideas more firmly in the minds of the young.

● **ONE NEWSPAPER TO 100 PEOPLE:** Nearly 70% of the world's people lack the barest information facilities. That is the state of the press in some of the less developed countries of Africa, Asia and Latin America. UNESCO has suggested that all countries should aim at providing for every 100 persons at least ten copies of daily newspapers; five radio receivers; two cinema seats and two television receivers. Poverty of the mass media, UNESCO points out, hinders the spread of education and, hence, economic and social progress. A 45-page report, *Mass Media in the Developing Countries*, just published by UNESCO, surveys the problem and suggests action which could be taken by governments, international organizations and private agencies.



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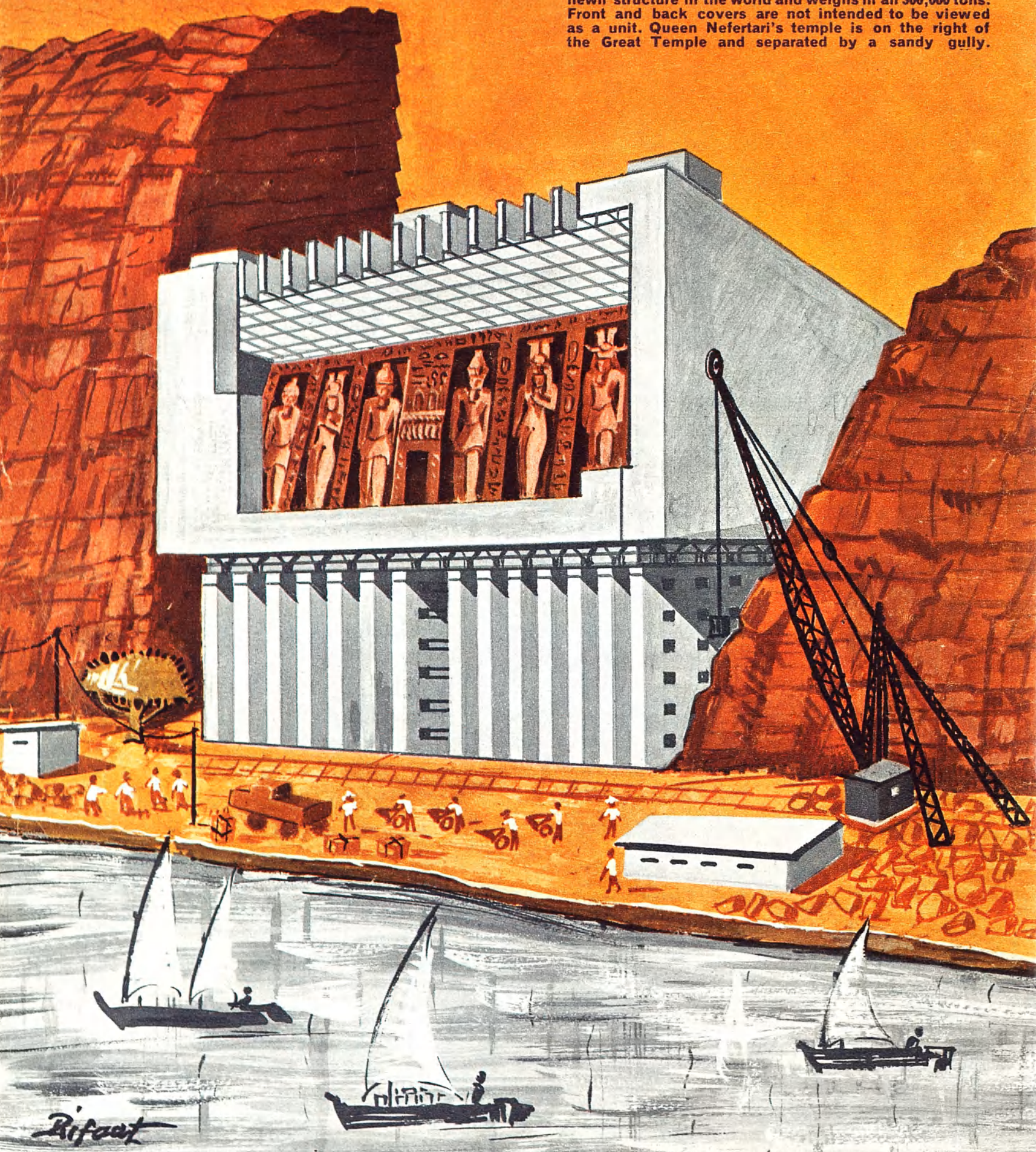
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ARCHIVES

LIFTING A MOUNTAIN 200 FEET

The two temples of Abu Simbel, carved out of solid rock over 3000 years ago by Rameses II, are the most impressive monuments of Nubia in the area to be flooded by the new high dam at Sadd el Aali. To save them, one of the most daring engineering feats of our century will lift two mountains of rock 200 feet—the height of the clock-face of London's "Big Ben". Here, in an artist's conception, the smaller temple of Queen Nefertari (below) and the Great Temple of Rameses (front cover) are seen as they will appear during the lifting process, encased in their concrete boxes (cut away to show the façades). The Great Temple is probably the largest man-made rock-hewn structure in the world and weighs in all 300,000 tons. Front and back covers are not intended to be viewed as a unit. Queen Nefertari's temple is on the right of the Great Temple and separated by a sandy gully.



Rifaat