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The printing of this volume is financed by
The Middle Eastern Culture Centre in Japan

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Editorial Notes

It is now twenty years since Kush XV was published in 1973. The spirit of cooperation and mutual understanding is still preserved. We hope this spirit will continue. This very volume of our journal as a good example. We would like to express our gratitude to Prince Mikasa of Japan, and other members of the Middle Eastern Cultural Centre in Japan for the generous offer to meet the cost of printing the present volume. Kush XVI is also long overdue; we have committed ourselves during the seventh conference of the International Society for Nubian Studies at Geneva in September 1990 to resume the publication of Kush as the vehicle of archaeological activities in the Sudan, and as our message to the community of Archaeologists all around the world for cooperation and mutual understanding for the appreciation of the cultural heritage of man. We certainly hope to strengthen our ties with old friends and acquire new ones as well. The present long array of articles contained in this issue will show how successful we have been in our attempt. From our part we are determined "to keep it up".

Since the publication of Kush XV, bearing the last episode of the UNESCO Nubian Campaigns, and this issue of Kush XVI, the reader will notice obvious changes - almost a gap in the authors' names, area of work, methodology, conceptualization, and several others.

Many more urgent circumstances have pressed upon us to resume the issuing of our journal KUSH any way. Thus we have chosen to keep the serial number and to sacrifice the continuity of contents. We hope in the future to make almost effort to bridge this gap in the forthcoming numbers. The speed and the way this will be attained will depend on the positive response of our contributors of articles. Hence, we are now making this as a call for all kind of contributions to be sent for the next volume of Kush XVII, which we hope to be ready by 1994.

As it has been customary in the previous volumes to give a summary of the various expeditions working in the Sudan, it has been thought as appropriate to give here a brief note about current work conducted in the Sudan during the season 1992/93. The British Institute in Eastern Africa has wound up its seasons of excavation in the capital of the Christian Nubian Kingdom at Soba East.

(a)
Welsby led the team and concentrated their efforts this time in finishing a domestic quarter of the city where important residential units have been unearthed together with another structure which seems to have been a religious structure - a temple. He also began clearing several important graves and one of red brick vaulted type well known from Nubia containing about seventeen skeletons. Another similar tomb has also been excavated by a team from the Board of Antiquities and Museums supervised by the present editor. Meanwhile a wider clearance has brought to light the fact that these two tombs were constructed in the middle of a wider christian cemetery. Now cut into two halves by the road to Ailafoon thus a salvage operation had to be hurriedly mounted to work ahead of the pulldozers. In the same venue a combined team of a Sudano-French composition identified and surveyed the area of the new road -Tariq Al Tahadi- The challenge Road from Geili to Shendi- led by Salah Mohamed Ahmed and P. Lenoble. The Sudan Archaeology Research Society led by Mallinson and Smith undertook to follow the projected route further between the royal city of Meroe and Atbara. As this note went to press the team is still in the field. A Spanish team under the leadership of Fernandez surveying the area of Al Hag Yousif and Soba East for pre-historic sites and have recorded several pre-historic and historic units - some were probably Islamic. In the Fourth Cataract region a Sudanese team has finished exploring and recording series of sites which amounted to almost 750 sites, supervised by the present writer and Salah Omer El Sadig and Abdel Rahman Ali (for details see the articles in this volume). The University of Cassino of Italy sent a team led by Irene Livarani joined effort with the Sudanese team from the Antiquities and Museum Board to conduct a survey and excavation of the area between Jebal Barkal and Khor Mahafur next to ez-Zuma village, many sites related to varoius periods were reporter. Furthermore, the combined Sudano-Italian team cleared several rock cut tombs at the village of Sheba and Hai-al Arab. Most of these are of El-Kurru-Nuri date- Early Meriotic (Napatan?).

Under the directionship of A. Roccati the expedition of the University of Rome continued its work on the Palace of Natakamani. This season was spent mostly on conservation strategy to the structure which is badly suffering from human, water and wind blast action.

At Hambakol the Royal Ontario Museum from Canada continued their excavation work at the christian house (Palace) led by Grzymski and J. Anderson.
At Dongola the Polish expedition led by Jakobielski and Godlewski continued their work with startling results on the city walls of the Capital of Christian Kingdom of Makuria a Monastery is being cleared with a burial of an important dignitaries where several inscriptions were found. The burial was the first of its kind.

J. Reinold continued his excavation at the pre-historic site of the Kadroka as the leader of the French Archaeological Unit attached to the Antiquities Board. He also made exploration and survey on the West bank of the Nile recording several important sites of all periods.

Charles Bonnet work at Kerma is progressing and the great city of Kerma is coming more and more to the light with its four gates, political structures, religious quarter, residential areas, industrial zones and so on. It is worth mentioning that the discoveries at Kerma are receiving more attention in the local mass media. On the other hand the University of Khartoum has awarded Bonnet the honorary degree of Doctor of Philosophy. In that area Welsby is conducting a survey work in the area of Wadi Al-Khewai and arround Kawa to forstall the danger of the unprecedented expansion in agriculture. This work is sponsored by the SARS and the British Museum in preparation for a major work to be conducted in that region. On the East three different expeditions are working. The first of a long standing is the Italian Mission from Napoli led by Fattovich in Kassala pre-historic site of Mahal Teginos (see the article below). His architect also made a special study on the Khatmiya Mosque and its possible preservation and restoration. In the further North Western area Karim Sadr was leading an Italian Expedition of the centre of the Eastern Desert Research with unexpected discovery of golden treasure and records of various sites including Neolithic sites in the area of the Province of Halaib and the Sudanese-Egyptian border.

Finally the French expedition of Sedenga led by K. Berger worked a successful season of excavation with interesting discoveries regarding the pre-historic level below the Meriotic cemetery. At Musawart es Sofra S. Wenig led a German team from Humboldt University to conduct a photogrammatry work in preparation of a major work of restoration and preservation. As part of a Red Sea Project between Univeristy of Khartoum and the Norwegian government, Anwar A. A/ Magid is conducting an ethnoarchaeological survey of the area between Sawa-kin-Sinkat-Ariab area. With the financial support from Ford Foundation, Grueb, seconded by Germany, and Mohamed Hamid, from the Ethnographic
Museum, it was possible to acquire the only working sagia along the Nile Valley from Uli Island in IV Cataract region. It is a precious acquisition of this museum. Further addition is being planned.

To conclude, it is hoped that the call for cooperation to salvage the cultural heritage endangered now by the planned construction of Merowe (Hamadab) High Dam will be answered, and that this cooperation will continue to increase and to develop into new area and to new fields.

It is with great regret that we record the death of Prof. Dr. Phil. Dr. h. c. Fritz Hnitz, who had been a great friend and a perpetuator of the spirit of Kush who died on 30th March 1993.

Ahmed M. Ali. Al Hakem

May 1993
MEROWE (HAMDAB) HIGH DAM AND ITS IMPACTS
by Ahmed M. Ali Al-Hakem

The water of the Nile was used for irrigation for several millennia back, yet it seems that only in this century that regulation and abstraction of the Nile flow by major construction began in the Sudan. The first Dam to be built was Sennar (Mekwar) Dam in 1925 on the Blue Nile, which provides irrigation water for the Gezira Cotton Plantation Scheme. Unfortunately, in spite of wellcome's work at Jabal Moya (1913), Garstang at Meroe and Reisner's at Begrawiya, no archaeological survey or investigation was conducted. Though accidental chance discoveries were briefly reported; even the famous nearby site of the Fung capital - Sennar - did not raise any interest. In 1937 Jabal Aulia Dam, located 40 kilometers south of Khartoum, on the White Nile, was constructed to ensure a continuous flow of water level during summer low-flow season in Egypt (this was preceded eventually of course by the Aswan Dam in 1964). The increased water level upstream of Jabal Aulia made it possible to develop major pump scheme on the White Nile, yet again no archaeological survey, or study of its impact, was associated with its construction—though major sites were known to have existed at Geteina and Kawa. However, as a sequel of the resettlement of Wadi Halfa people at Khashm al Girba in 1964, few archaeologists followed the "Nubian Exodus" to New Halfa, and that area of Khashm al Girba Dam on the Atbara River saw, and still this seeing archaeological activities with great interest, several teams have been working in the area for more than a decade, with starting results. Finally, the Roseires Dam, on the Blue Nile, near the Sudano-Abysinian borders, was completed in 1966, to provide water for irrigation for the Gezira Extension of Managil, and further to generate electricity. Unfortunately again no archaeological work was associated, although several chance findings still being reported.

Merowe Dam

The Egyptian Ministry of Public Works carried out a study on the Fourth Cataract region in 1942 - 1952 for the purpose of building a Dam at Merowe Island as a flood control measures, and storage plant at MSL 298m. Merowe Dam figured out again in a study conducted in 1979 for the Sudan Ministry of Irrigation (Coyne et Bellier, 1979) for the Sudan Ministry of Irrigation (Coyne et Bellier, 1979) for the Hydroelectric Plant with FSL at 298m. which produced a run of air photograph at the Dam site at the scale 1:37,000. The project was
also addressed by Sir Alexander Gibb, Merz & Mclellan in 1983 in their study of water development of 4th Cataract Region for their "The Power IV Project. Feasibility Study". It was then that electric power generation was firmly considered, and a two dams senario was suggested. In 1984 - 6 a Swedish Constorum (Sweco) made a pre-feasibility study of the same project, between Abu-Hamad and Merowe, suggested a cascade of three dams for hydro-generation- where extensive aerial photography and mapping were made.

The present government of the National Salvation Revolution, represented by the Ministry of Irrigation and Water Resources, and the National Electricity Corporation, took the matter further and signed a contract with the Canadian Montenico Consultants Limited in Oct. 1989. The funding for a feasibility study was provided by the International Development Association of the World Bank. The purpose of the project, as outlined, were stated to be a multipurpose development plant of the water resources in the Abu Hamad Merowe area to the best advantage of the Sudan.

The main objectives being summarized in the term of references as follows:

a) Optimize the hydro-power potential of the 4th Cataract to generate electricity to meet mounting demand in the sectors of agriculture, industry, government, house holds and commerce.

b) Increase agricultural development whether in the reservoir perimeter or down stream.

c) Improve the navigational and fisheries potentials and stimulate other development in the area of influence.

d) Ensure against any adverse effect of the project on the future development of the hydroelectricity potentials in the third or fifth - sixth Cataracts, or on social and physical environment in the area or its surrounding regions.

After considering series of options centred around:

a) Three successive dams in a cascade,

b) Two Dam scenario,

c) Single High Dam,

and their possible location. Agreement has been reached to a choice of one single High Dam at Marwa Island without fundamentally prejudicing other development for the future, when circumstances permit.
Main feature of Merowe (Hamdab) Dam:

It is a multipurpose Hydroelectric project, based mainly on a dam to be built accross the river at a point 500m. downstream from the upstream end of Marwa Island, located about 35 klm upstream from the town of Merowe. It will be a concrete rockfill dam whose crest will be at an elevation of 300m. to meet a maximum Flood Supply Level (FSL) 298m. and Low Supply Level (LSL) 290m. The Dam will extend to 8.6km. long. Thus a reservoir will be formed whose water effect will reach as far back as 170km. upstream at Ras el Gezira of Mograt Island. The total surface area amount to 724sq. km. Low level sluices provided at low supply level (when the Nile is at its lowest level) will ensure that the most heavily silt laden flood will be flushed through the reservoir, hence no silt accumulation within the flooded area.

Importance of the Hydro-electric component:

The National Electricity Corporation generating system in the Sudan is a mixed hydro-thermal system- composed mainly of three hydro plants at El-Roseires, Sennar on the Blue Nile, and Khasm el-Girba on the Atbara River, generating 65% of the electricity consumed. The thermal plants contain steam units at khartoum North, disiel units at Burri with gas turbine units which account for the remaining 35%. Most of the regions suffer from under supply, and it is quite common for industry and commercial users, even in the area covered by the National Grid, to provide their own backup, or primary supply. Khartoum has been experiencing programmed power cut even for the industrial sector. Nevertheless, the demand for energy and electric supply is mounting up annually and at a higher rate. It is estimated that before the commissioning of Merowe plant, the demand will be ten fold its present level. Even with the commercial exploitation of oil and natural gas resources in the Sudan to generate thermal electricity. Still the demand for hydro power will be there and at a higher rate of increase. This fact becomes very clear when we realize that most of the present thermal plants will have to retire in about ten years time, when Merowe hydro electric plant will be commissioned. This plant will generate enough energy to meet all these demand and its projected natural increase, or any possible development in Electric power consumption. Still further there will be an excess of power, and it is envisaged to export this further northward to Egypt.
The Impoundment Area:

The bedrock forms the prominent feature, composed mainly of pre-Cambrian Basement complex of metamorphic and igneous rocks. They form the banks of the Nile, the core of over 48 islands depending in several cases on the time of the year, and the jutting rapids in the middle of the course of the River. These were subjected to numerous kinds of weathering and erosion. In many instances these are covered with rock pictures of various periods. It is upon these rocks, and in the crevices, significant layers of Nile silt (in places several scores of meters deep) and alluvium are deposited. Aeolian sand deposition can be met several times. In several places there are patches of thin plain of fine grained soil and gravel. Many burial mounds are dug through this.

It is along this narrow strip of 170 klm. long on both right and left bankes, as well as the islands, of the River Nile, are distributed the following 41 villages, each of which is composed of many hamlets (in one case about 40 hamlets to a village were recorded). It is worth noting that administratively, the villages fall within four Rural Councils.

On the right bank eight villages belong to Kareima Rural Council, while four on the left bank belong to Merowe Rural Council, the whole of Shirri Rural Council falls within the middle of the area and eight villages belong to the Abu Hamad Rural Council; Kareima, Merowe and Abu hamad extend beyond the impoundment area.
## Structure of the Area
### Administrative Distribution of Villages
#### Northern State

<table>
<thead>
<tr>
<th>Merowe Rural Council</th>
<th>Abu Hamad Province</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kareima Rural Council</strong></td>
<td><strong>Shirri Rural Council</strong></td>
</tr>
<tr>
<td>Hamdab Sharq المندوب شرق</td>
<td>Birti بريتى</td>
</tr>
<tr>
<td>جزيرة المندوب</td>
<td>Dirbi ديري</td>
</tr>
<tr>
<td>Gezirat Hamdab جزيرة المندوب</td>
<td>Boni بوني</td>
</tr>
<tr>
<td>Gezirat Uli جزيرة أولى</td>
<td>Arag/ El kirbikan الأراك/ كريبكان</td>
</tr>
<tr>
<td>El Argub المرقب</td>
<td>Sur الصور</td>
</tr>
<tr>
<td>Umm Durras أم دوراس</td>
<td>Us الاوس</td>
</tr>
<tr>
<td>Ishish / Mish عيش / ميش</td>
<td>Sharari شراري</td>
</tr>
<tr>
<td>Amri Kabirah عمرى كبيرى</td>
<td>Hosh Faraneib حوش فرانيب</td>
</tr>
<tr>
<td>Amri Sharq عمرى شرق</td>
<td>Al. Ashamein الشامى</td>
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<td></td>
<td>Shirri شيرى</td>
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<td></td>
<td>Shirri Sharqiyah شيرى شرق</td>
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<td>Al- Amarein الصامى</td>
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<td>Al- Safeiha الصفيحة</td>
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<td>Esma اسما</td>
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<td>Al-Kir الكير</td>
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<td>Kabna كابنا</td>
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<td>Al Heiba الجبهة</td>
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<td></td>
<td>Umm Duweima أم دومى</td>
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<td></td>
<td>Al- Kab الكاب</td>
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<tr>
<td></td>
<td>AlGamamiya الجامعية</td>
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<td></td>
<td>Umm Saffiya الصافية</td>
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<td></td>
<td>Al Al العالي</td>
</tr>
<tr>
<td></td>
<td>Shamakhiya الشامى</td>
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<tr>
<td></td>
<td>Ginefhab جنيفاب</td>
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<td></td>
<td>Abu Tein أبو طين</td>
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<tr>
<td></td>
<td>Al Shallal الشلال</td>
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<tr>
<td></td>
<td>Ras AlGezira رأس الجزيرة</td>
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<tr>
<td></td>
<td>Al Saihan السحان</td>
</tr>
<tr>
<td></td>
<td>Kalesaikal Bahri كالسياكل بحري</td>
</tr>
</tbody>
</table>
The total population is estimated to be 60,000 individuals excluding Abu Hamad township. The major ethnic groupings include the ja'aliyin, the Mira-fab, the Shaigiya as extensions into the region traditionally supposed to belong to the Rubatab with their major subgrouping Al -Bedriya, Al-Faraneib abd Al Deifab and the Manaseir divided mainly into 5 lingeages: Al Wahabab, Al-Kubanah, Al Seleimaniya, Al- Kujobab and Al- Khubarraa. (Shukaire 1967,). Basically, the population is settled riparian agriculturalists with a long inherited traditional technology which seemed to have been well adopted to this isolated zone. However, in several places, where suitable flood plain becomes scarce, or disappears entirely camel pastoralism prevails using the valleys in Atmour desert on the North ( Right bank) or Bayuda desert on the South (left bank). On the other hand, several camel nomads, whether Bega of the Atmour such as the Bisharin and the Ababda, or Hassaniya- Howawir from the Bayuda desert frequent the region and mixed with its population.

The total area of arable land to be permanently lost as a result of the project amounts to 24, 859 feddans. Date is the main cash crop of the area, and a total of date-palm trees amounting to 673,52,1 productive trees will be lost. Moreover, the type of date is of non -Nubian, known only in this region as Wad Laggai, Mishrigi, Breira and Wad Khateab.

**Resettlement Issue:**

Three resettlement options have been finally identified:

1. The west of Abu Hamad in a triangle whose base lies parallel to the river, facing Mograt Island, and its two sides being the railway line branching from station No. 1 and Kareima line. The area is extensive flat cultivable plain, intersected by wadies where 32,000 feddans are easily available for immediate exploitation.

2. The lower Reaches of Wadi Mugaddam and Wadi Al-Milk before debouching into the Nile River are two possible regions.

3. Selected isolated small patches along the Nile Valley down stream of the dam, but not far from the present day homestead.

Although option number one is finally identified for recommendation, certainly the others remain still as targets for possible future consideration. On the other hand, committees from the local population are considering other type of options outside Abu Hamad - Merowe area. In fact, towards further southa-
ward to the White Nile Pump schemes or the Rahad - Kenana Projects. New Wadi Halfa and Kashm al Girba being quoted for comparison.

The pre-feasibility study naturally emphasize the target area for development, no doubt this is expected issue to be reckoned with at the final stage. For the present study, it is enough to emphasize the fact that the area will be seeing drastic changes which calls for multi disciplinary research work, in which Ethnography, material culture, folklore and history will be equally important for our archaeological research.

The Fourth Cataract Zone:

The area of 170 km which is going to be permanently under water by year 2,000 starts at the downstream tip of Mograt Island at Ras al- Gezira specifically which itself lies immediately opposite of Abu Hamad town. It is here that we have an easily accessible shortest route from the Nile Valley to the Red Sea coast in straight east bound direction- crossing the Red Hills through passages to Aidhab - Halaib and to gebeit al Maadin - Mohammad Gol, the traditional gold mining zones and to Tumala to Port-Sudan /Swakin/ Agig-international ports of call for high seas ships. It is also at Abu hamad that the famous North bound route to Egypt passing through Korosko via Morat Wells in the Atmour Desert, touches the Nile Valley on its way going southward or eastward.

Furthermore, the Nile here makes a great turn, and for a distance of about 200 km. penetrates, in a south westerly course, the Bayuda desert, passing by Kareima and Gebel Barkal to Korti and ed- Debba, when it turns again northward. This made the Nile to run through most rugged area, in many places it almost looses itself into minor streams, untill it collects itself again, running in almost a gorge like; 47m deep has been recorded in some places, and in others the drop was so great that rapids are formed. Thus navigation throughout the entire region is almost impossible (except for few days during maximum flood level between August - September). Downstream of Abu Hamad the railway line does not pass through near the river except at el -Kab. However, the entire area is negotiably by four wheel drive cars and lorries on both banks. Crossing to the islands can only be effected by boat, and then walking the islands, some are few kilometers long. One would guess rubber boats will be more handy, though local wooden boats are available. Crossing by cars from one bank to the other is possible in limited ferry boat crossings at Merowe and at few kilom-
eters south of Abu Hamad. Furthermore, these two places are excellent base
camp regions for supplies and services, and are readily reached by buses or rail-
ways and in case of Merowe by domestic air flight from Khartoum.

At present there exists reasonable sets of maps which are readily available:
a: Whole Sudan 1: 4,000,000
b: Northern State 1: 1,000,000
c: Sudan Map Sheet 1: 250,000
  Berber Map sheet 45 G
  Abu Hamad Map sheet 45 C
  El Kab Map sheet 45 B
  Merowe Map sheet 45 F
  Bayuda Map sheet 45 J

These are the map sheets and scale used for the National Record Reg-
istry to produce the National Archaeological Map. There also exist now
other more detailed maps: e.g.
d: Scale 1:50,000 with contour line at 10m interval.
e: Scale 1:10,000 with contour line at 5m interval for dam site.

Further detailed maps are being prepared by Excavation Department
of the Sudan National Board for Antiquities and Museum.
f: There also exists land sat images RBV in colour.
g: Set of Aerial Photograph carried out by Sweco in 1983 at scale of
  1:37,000.

J: Survey Department Aerial Photograph set at scale of 1:63,000.

**Down Stream Region:**

Immediately west of the dam site lies one of the most important archaeo-
logical zone in the Sudan, the Kushite Royal Ceremonial Centres of the Napatan
Region namely, the Kushite Ancestral cemetry of El-Kurru, the Great Royal
Pyramids of Nurri, the Gebal Barkal Temples, Pyramids and city of Napta; the
ceremonial town of Sanam Abu Dom with the temple of Taharqo; The newly
discovered Rock -Cut tombs at Sheba and Hillet al - Arab, the Tumuli of Ez-
Zuma , and the unrecorded as yet Islamic monuments including mosques, Khal-
was, Dome-tombs, fortresses and Royal Palaces.

Contrary to the reservoir area which is situated in the middle of impervious
basic complex rocks, the archaeological sites are distributed over an area formed of the Nubian sandstone rocks, hence are opened to all danger associated with the fluctuation of water table. It has been forecasted that after the completion of the project, the average water table will increase significantly, and its fluctuation regime will change drastically. This will have definite adverse effect on the stability of water table. On the other hand, the creation of a water mass of the size as indicated, adjacent to this Nubian sandstone area will subject the archaeological sites to the danger of possible water seepage, through cracks or foliation in the basement complex, specially the superimposed layers. In addition, the effect of this extensive lake to be created on the micro-climate will have to be assessed carefully. No doubt this calls for assessment of all these dangers and possible conservation strategies have to be developed.

Furthermore, the hydro-electric power generated will unleash an unprecedented developmental opportunities which will change the whole scene of the region further north, particularly from the agricultural and infra-structural point of view. Thus all sites and centres will be affected in some way or another, including Old Dongola, Kawa, Kerma, Soleb and up till the third cataract region.

**Transmission Line:**

A 500 KV transmission line is proposed between the hydro-electric power station at Merowe Dam site and Khartoum. The route will cross the Bayuda desert towards Atbara, thence to Khartoum and to Port Sudan, thus connected to the Electric National Grid. A main highway road is also projected on the same alignment. The line will be carried aerially by series of steel towers.

**Archaeology in the 4th cataract Region:**

Our Knowledge about the potentiality of the 4th cataract region for archaeological purposes is very little indeed. Its place in the so far known prehistoric cultural spectrum of the Sudan had to be assessed, indications of the presence of prehistoric resettlement is over-whelmingly clear. Evidence for the region's significance during early historic period comes from the existence of Tuthmosides ... (Early 18th Dynasty ca 1500 B.C) at Hagar al -Maru, on the east bank opposite Kurgos, about 35 kms upstream from Abu Hamad. It remains to be seen whether this can be related to Korosko-Abu Hamad Atmour Desert Route which goes through Morat Wells- Um Nabari gold mines- hence to be connect-
ed still further with the gold mining region further east ward, or to be related with Napata and Gebal Barkal, which acquired on its part, great religious and administrative importance during the Egyptian New Kingdom (1570–1080 B.C.).

During the Medieval period, it seems to have acquired political and religious significance. Several Arab writers continued to describe the area as a refuge zone for the king of Dongola in front of the Mamluks armies from Egypt. In particular, the Kingdom of Al-Abwab was flourishing in the area, between the Kingdom of Makuria at Dongola, and the Kingdom of Alawa at Soba. From the ecclesiastical point of view, the key of the Church of Isos was particularly mentioned. Recently a unique ceremonial key was found in Korta Island, near Mograt Island.

About the 15th century, it became a centre for Islamic learning and sofisticated teaching. The great family of Awlad Gaber (15th century A.D) originated from Tareng Island and its environs, which is still venerated. European travellers of the 19th - 20th centuries rarely visited the area, and then briefly referred to. During the Mahdia Revolution (1881 - 1899) it had acquired some strategic importance. Gordon mission for help during the besiege of Khartoum was intercepted by the local population led by Wad Gamar and Abu Hegel at al-Hiba village. This later led to wide spread devastation and destruction by the British Army to the whole area, from al-Shallal village and Salamat, and downstream, before their retreat northward. During the colonial rule it was neglected. Although there existed several accounts of Journeys, interest in the area seemed to have been very low, until Crawford made his famous low intensity foot survey in 1948/49 and draws attention to its archaeological importance. Sayed Thabit Hassan Thabit, the Antiquity Officer (later became first Sudanese commissioner of Antiquities) and T. Gray conducted an exploratory survey whose records still exist unpublished. Under the guidance of the late Bryan Haycock, the History Department of the University of Khartoum conducted a study tour to the area from Abidya to Mograt in 1969 - 1971. Abbas Sid Ahmed published a summary report on Mograt Island in 1971. Ali Gasm al Sid made a similar attempt on the downstream end of the area for a short distance on the right bank upstream from Merowe. Isabela Caniva and Donadoni began surveying the Uli Island.
As part of the pre-construction preparation, an archaeological resource impact assessment is being prepared. The Antiquities Service led by Osama A. El Nur conducted inspection and exploration journey in 1989-90, on the downstream left bank. Jean Lechant, representing the UNESCO, visited the left bank upstream from Merowe, to assess the situation for the UNESCO, as a response to an appeal for help by the Sudan Government.

In April 1991 The National Board of Antiquities and Museums set up the "Hamadab Dam Project Research Council" to coordinate field research work of the various disciplines, namely, Archaeology, Ethnography, History, Archives, Folklore, Tradintional Technology etc. A plan of action has been developed of three stages:

a. Low intensity exploration and reconnaissance stage to be completed by end of 1993.
b. High intensity field and assessment stage 1994-5.
c. Strategy of action according to a priority list which is hoped to continue beyond the flood year of 2000 A.D.

One would like to stress the fact that these stages as envisaged are not strictly exclusive, but mutually intergerative. Also there is much freedom on the definition of work to be executed. In fact it is a plan for coordination.

In view of the need for information for the pre-feasibility studies the first stage had started, at the present almost 70% was completed. It is hoped that by August-September 1993 all work on this first stage to have been in a advance stage to allow the start of the second stage. On the other hand, from archaeological point of view, we have gathered enough scientific information to allow us to give skeletal basic cultural spectrum to be expected in the region between the Dam site at Marwa Island, and upstream to Mograt Island, including both right and left bank and the islands.

The Perhistoric Periods (Palaeolithic/ Neolithic) makes up about 3% of the sites recorded. Unexpectedly, the Meroitic sites amount to 30%-(757 tumuli were identified in groups). Similarly the Christian period, as expected are represented by not less than 35% including 537 mastaba graves, several churches, houses, and monasteires and uncountable graveyards of various types and shapes of graves. The identified Islamic sites are 7%. Rock drawing sites
amount to 16% and contains all cultural periods -including undoubted pharaonic type boats. Strikingly 4% of the sites recorded are categorized as Forts, whose cultural assignment is still problematical some, like the one at Al- Kab, was built very early, probably in the Meroitic periods, but was definitely existing and was used during the Christian period, was used by a local magnate as late as the beginning of last century. The unidentifiable sites i.e. belonging to none of the above mentioned categories, amount to 5%.

Labelling of sites was done rather arbitrarily, looking for the most obvious identifiable cultural marker. Lithic artifacts and characteristic pottery types were used to identify the prehistoric sites. Meriotic tumuli and the obvious Meroitic painted ware were obvious cultural markers. It was worth noting here that so far no pyramids or temples were recorded.

Monumental structures and superstructure types over the graves identify the Christian sites. Religious functions characterise the Islamic sites. Of course these are based on preliminary surface observations only, no test digging or exploratory methods were made. No doubt high intensity surveys with or without test excavation, and the adoption of some carefully designed, systematic method of identification will give more accurate and finer picture. Even with this preliminary type of work there are so many questions left seeking for answers. Chronology is the least of them, only excavation and some sofisticated specialized work, can find their answers.

**Time Factor:**

It has been recommended by the pre-feasibility study that preparatory work should start by 1994 during which all basic information would have been completed and documentation finalized, particularly regarding contouring and mapping work. Constructional work of the actual dam will start immediately in 1995, which entails the building of two coffer dams -one upstream and the other downstream- of the site at low supply level. However, actual flooding is not expected before year 1999, and full commissioning by year 2000, when all people, and all salvaged cultural material will have been moved to safer places. Considering the previous experience of the UNESCO International Camaign to Salvage the Nubian Monuments, one would guess that very little time is left for us. The Sudan National Board of Antiquities and Museums is now appealing to the International archaeological Community for cooperation and assistance to salvage valuable information which concerns human cultural heritage, in this
unique part of the world, a unique heritage which belongs to all humanity.

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Distribution of Archaeological Sites at: Amri Island:

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Distribution of Archaeological Sites at Staffi Island:

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**Prepared by**

**Abdel Rahman Ali. Mohamed**

**July 1992**

Les interventions se sont partagées entre une fouille de sauvetage dans l'agglomération moderne et la suite d'un programme d'études mené dans la ville antique. C'est la topographie générale du site qui est peu a peu reconnue. Après 17 années à Kerma, il devient ainsi possible de cerner un peu mieux les activités des habitants nubiens dans la capitale de l'un des plus anciens royaumes africains. La connaissance des maisons et des monuments publics fait partie des priorités scientifiques choisies et nous limitons, quand cela est possible, les chantiers aux recherches sur les origines des cultures soudanaises.

**Un batiment administratif ou le "Trésor"**

Une maison du quartier sud de la Kerma moderne a brûlé plusieurs fois et, pour cette raison, l'habitation a été surnommée "Beit El Shetan", la maison du diable (Fig. 1). Lors des premières interventions archéologiques dans ce secteur, des structures en pierre du Kerma Classique avaient attiré notre attention; elles apparaissaient dans la cour du bâtiment. Pour éviter une destruction totale due à un vaste projet prévoyant de nouvelles constructions, il a été décidé d'effectuer un dégagement des vestiges, plus de 15 ans après ces anciens repérages.

Le monument se présente sous la forme d'un ensemble de trois grandes salles (5m sur 7m) contiguës, mesurant au moins 26m de longueur par 10 m de largeur. Les murs sont édifiés sur des fondations en pierre très puissantes de près de 2m d'épaisseur. Avant la pose des premières assises, le sol a été recouvert d'une couche de sable; de grosses perles de faïence, de quartz vitrifié et de cornaline ont été éparpillées dans ce niveau de préparation, sans doute pour des raisons votives (Fig. 2). Dans la partie centrale de la construction, une sorte de
puits carré s'enfonce à faible profondeur. De petites dimensions, ce dispositif a peut être été prévu pour déposer des objects précieux ou comme réserve d'eau. Il était suffisamment utilise pour que l'architecte aménage une cloison de protection l'entourant sur trois côtés.

Perturbés lors de l'aménagement de l'angle sud-ouest du monument, trois magasins semblent avoir été transformés à la suite du chantier. Ces locaux étroits et allongés étaient établis en maçonnerie de brique crue et se distinguaient du reste des installations. Dans les déblais de ces structures ont été inventoriés plus de trente fragments d'empreintes de sceaux qui avaient été appliquées sur des coffres de bois. Ces documents sont de grand intérêt car ils semblent démontrer la continuité des relations diplomatiques et commerciales avec les forteresses de la 2ème cataracte. Il paraît presque acquis que, durant le Kerma Classique (1750 - 1550 avant J. - C.), l'administration égyptienne de ces forteresses était en mesure d'envoyer certains produits vers le sud. Certes ces quelques cachets devront encore être analysés. (4) les magasins pourraient avoir été abandonnés lorsque le grand monument a été bâti mais l'installation d'un contrefort évoque le maintien d'une partie des murs en brique.

On peut supposer que dans une zone proche du Nil s'est installée l'infrastructure nécessaire à la vie du port, D'ailleurs, dans le voisinage immédiat, ont été dégagés les restes contemporains d'un temple et d'une chapelle, ainsi que l'extraordinaire puits en pierre appartenant vraisemblablement à une tombe princière. Plus anciens sont les trous de poteaux de premiers établissements en bois, datés par un matériel du kerma Ancien et Moyen, ils montrent bien que dès l'origine de la ville antique une organisation portuaire est mise en place. Il reste à mieux apprécier son importance. (5)

La ville antique

Entre le quartier nord et la partie nord-ouest de la ville restait une large surface de terrain à dégager pour établir la liaison de toute la zone urbanisée. Malheureusement cet emplacement est fortement érodé et des rangées de tombes méroïtiques ont détruit les vestiges. C'est donc un peu plus près du centre que le dégagement d'une série de maisons a pu apporter un complément à la topographie (Fig. 3). Vers le nord, il ne sera pas possible de restituer le type des habitations, même si quelques traces de murs assurent que les terrains étaient bâtis.
Une quinzaine de maisons ont été analysées (nos 97 a 112), même si elles ont des plans très diversifiés, elles paraissent appartenir toutes à la période du Kerma Moyen (2050 - 1750 avant J.- C.). On distingue au moins trois ensembles de trois à cinq habitations; ces regroupements sont vraisemblablement liés à des propriétés de famille. Chaque ensemble est constitué d'une maison principale autour de laquelle ont été installées des unités complémentaires plus modeste, peut-être après l'augmentation des membres de la la famille. Un enclos réservé aux silos circulaires (112) fait également partie des adjonctions (Fig. 4).


L'exemple de la maison 100 donne une bonne idée de l'organisation de ce que nous pensons être un ensemble familial. L'unité principale est formée d'une cour centrale et de deux corps de bâtiments placés de part et d'autre. Chaque aile est partagée en deux chambres accessibles de la cour intérieure. Un second espace fermé est aménagé au sud, il est de plan triangulaire et clôturé par un épais mur de brique. Il s'agit d'une sorte de parc où sont installés une zone artisanale, des enclos pour le bétail mais aussi les cuisines et les réserves alimentaires. On entrait dans la maison en passant par cette cour extérieure. Les montants de la porte ont été retrouvés du côté oriental.

C'est là, près de cette entrée, qu'un curieux dispositif était conservé. Accessible de la grande cour, cette construction est de forme semi-circulaire; deux contreforts marquaient une large ouverture sans doute partiellement bloquée par une barrière en bois. Une base en pierre restituée, au milieu, l'emplacement d'une poutre destinée à supporter la toiture. A l'origine, le sol de l'abside avait été soigneusement enduit d'un badigeon d'ocre rouge. Des trous de piquets, dont la fonction nous échappe, ont été observés sur le sol, ainsi que plusieurs traces de feu (Fig. 5).

Cette installation pourrait appartenir à un lieu de réunion ou de culte. Aujourd'hui encore, les membres d'une même famille se retrouvent chaque soir dans un local, le "messid", placé un peu à l'écart de l'habitation. On s'y réunit
pour discuter de certains problèmes et pour prier. Les visiteurs de passage y
demeurent aussi parfois. Typiquement nubiens, ces petits édifices n'ont pas
de équivalent ailleurs. L'exemple retrouvé dans la ville antique en montre peut-
être l'origine.

Une deuxième maison (102) est ajoutée au complexe, auquel elle s'adosse
du côté est. Elle est constituée de deux salles et d'une petite cour indépendante.
Un long passage étroit relie l'habitation à la grande cour qui se rattache donc à
l'ensemble décrit.

La nécropole méroïtique

Le cimetière méroïtique dont G.A. Reisner avait reconnu 52 tombes (6),
s'étend sur une immense superficie allant du "Kôm des bodegas" jusqu'aux bâtiments
du Kerma Classique fouillés dans la ville moderne (soit plus de 2 km). Notre recherche n'a pas mis l'accent sur cette période et la plupart des tombes
repérées sont laissées pour de futures excavations. Toutefois les décapages ont
touché les fondements de plusieurs pyramides en brique crue et il a été procédé
au dégagement complet des superstructures et des caveaux leur appartenant.

Le mobilier inventorié est presque inexistant car ces tombes ont fait l'objet
de pillages systématiques. De rares tessons fournissent une datation du ler siè-
cle après J.-C. et, en l'absence d'ossements humains, il est impossible de présen-
ter d'autres informations. Cette découverte permet cependant de compléter l'image du site de la ville antique à l'époque méroïtique. Il existait ainsi au nord
de la deffufa plusieurs groupes de deux ou trois pyramides. Alors que la ville
était abandonnée depuis longtemps, on a utilisé le champ de ruines comme néc-
ropole. Des tessons abandonnés dans l'une des chambres de la deffufa témoi-
gnent aussi d'une occupation du lieu de culte qui avait probablement gardé son
prestige.
Notes


2) Il s'agissait de Béatrice Privati, archéologue; Louis Chaix, archéozoologue; Christian Simon, anthropologue; Thomas Herbst, technicien de fouilles et de Marion Berti qui s'est occupée de l'intendance et d'une fouille de sauvetage.


Fig. 2 Kerma. Perles de faïence et de quartz vitrifié retrouvées sous le bâtiment administratif.
Fig. 3. Kerma Le quartier nord-ouest de la ville antique
Fig. 4. Kerma. Des silos circulaires prévus Pour les réserves alimentaires

Three areas towards the northwestern edge of the town of Kerma, sites 144 and NN5, were chosen for excavation in the 1969-70 season. A number of reasons prompted this choice. Firstly, the site was dug in 1969, as NN5 was found that further investigation would be worthwhile. In the case of NN5, a number of features, large and small, were found, and other occupation layers were found, but no significant pottery or MNS. A number of post holes were uncovered in the area. The great quantities of S. S. ware and the appearance of a number of mud brick structures in the area increased the
Fig. 5 Kerma. Le lieu de réunion de la maison 100.
INTRODUCTION

This interim report covers the results of the first season of excavation, in the current three season campaign, which took place from December 1989 to March 1990.

Soba lies on the east bank of the Blue Nile, 22km upstream from its confluence with the white Nile at Khartoum. During the campaign of excavation at Soba conducted by Daniels and Welsby on behalf of the British Institute in Eastern Africa from 1981-86 (Welsby and Daniels, forthcoming) some slim evidence for a Meroitic presence was found, but the bulk of the surviving evidence related to the medieval period. Whereas the exact chronology of the site still eschews us, the earliest building so far investigated, building A on mound B, appears to date to the 9th or 10th century. This ties in with the first mention Soba as the capital of the Medieval Kingdom of Alwa by al-ya'qubi, who wrote circa AD 872-891 (al-ya'qubi in vantini 1975, 78). The evidence of the traveller David Reuben, that Soba lay in ruins at the time of his passage in Reuben, that Soba lay in ruins at the time of his passage in 1523, is corroborated by the evidence of the pottery, the bulk of which dates to the 12th century and earlier, and to no later than the 14th or 15th centuries. So far, only a handful of Funj pottery has been found at Soba, although the site is said to have become a major Funj metropolis after the funj conquest in the early 1500s.

Three areas towards the north-western edge of the site at Soba, MN3, MN8 and M12, were chosen for excavation in the 1989-90 season. A number of reasons prompted this choice: firstly, the sondages dug in 1982 at MN3 and MN8 suggest that further investigation would be worthwhile. In the case of MN3, a gravel mound, large quantities of pottery and other occupation debris were found, but no evidence of structures; at MN8 a number of post-holes were uncovered, but very little pottery. The great quantities of Soba ware and the apparent absence of red and mud brick structures in the area increased the
likelihood of finding early occupation levels undisturbed by later settlement; therefore it was considered to be of interest to extended investigations in both areas, in the hope of excavating domestic timber structures, a previously unknown quantity at Soba. Mound M12 was chosen because it is a red brick mound, and we wish to test the hypothesis whereby such mounds are thought to cover red brick churches, as opposed to any other kind of red brick building. Mound M12 was chosen because it lies on the outskirts of the site, and it would, therefore, not necessarily conform to what appears to be the norm at the centre of the site.

At the request of the Director General of Antiquities a red brick tomb adjacent to mound UA was investigated. This tomb was found by chance in 1988 when a lorry broke through its vault.

Footnote list of team members: Abdel Rahman Ali, Julie Anderson, Pamela Grace, Elham Mohammed Elhag, Susan Hedley, Charlotte Lewis, Isabella Sjostrom, Richard Stone, Tag el Asfia Musa Ettayeb, Derek Welsby.

**THE RED BRICK TOMB**

The tomb lies a short distance to the north of the churches at the western end of mound B and immediately to the east of the red brick mound UA. It is a rectangular structure, measuring 2.49 x 1.5m internally, aligned east-west and entered through a narrow door with a triangular pediment set in the centre of its west wall. Red bricks were used throughout the construction of the tomb, the chamber of which had been cut into the bedrock; both interior and exterior were coated in a whitewashed mud plaster, which survives in a fragmentary state. Two horizontal courses of irregularly shaped stretchers were laid over a ledge cut in the bedrock wall before the springing of the pitched brick vault. The east and west walls are built with alternating courses of headers and stretchers up to the top of the vault. A total of 15 or 16 adult skeletons have been found within it, piled one upon another. All the internments would appear to be contemporary.

In front of the entrance of the tomb the floor of the construction pit had an uneven pavement, made up of trapezoidal vaulting bricks, as well as red brick fragments, laid in a matrix of hard-packed earth. The mud-plastered red brick wall which separates the tomb from its unexcavated neighbour to the south rests
on the pavement.

Once the sand, which had blown in from the hole in the vault, had been cleared away a layer was found inside the tomb containing rocks and red vaulting bricks, which did not, however, appear to have fallen from the vault, lying on top of fragments of the ceiling plaster. The plaster lay on top of a layer of moist, sandy earth, 20cm deep, which contained the skeletons. Many of the stones were large, the largest measuring 32 x 38 x 15cm; among them were a saddle quern and a grindstone. These must have been placed in the tomb together with the vaulting bricks before the chamber was finally sealed by the infilling of the construction pit. this must have taken place shortly after the completion of the tomb, as there was no trace of any wind-blown sand lenses over the pavement. The fill material consisted of black earth and white gravel which was presumably derived from the excavation of the construction pit itself.

Adjacent to, as well as cutting the fill of the pit, were six child burials aligned east-west with the head to the west, some crouched, others laid on their backs and extended (fig. 1). No grave goods were recovered, but there is no reason to doubt that the tomb and the subsequent burials all date to the Medieval period, between the 6th and the 15th centuries.

The hole in the vault of the tomb was repaired after the preliminary excavation of the tomb (the skeletons were left in situ to await study), the doorway was blocked and the construction pit backfilled in the hope that the occupants will remain undisturbed until next season.

**AREA MN3 (TRENCHES MN10 & MN13)**

This area consists of a low gravel mound covered in a mass of pottery including a large amount of the Early Medieval Soba ware. Excavation of an area of 175m² revealed a sequence of amorphous deposits with abundant occupation material in the form of ash, pottery and bone, but no structural remains. It was only at a depth of 50cm that a hard surface was found, cut by a large number of post-holes and with the first upstanding remains of mud brick walls and traces of hearths. Beneath this surface was a build-up of a number of gravel and earh floors each pierced by post-holes and associated with five mud brick walls and a number of hearths (fig. 2). The average size of the mud bricks
was roughly 30-35 x 20 x 7-8cm. All the mud brick walls belonged to buildings which lay largely outside the excavation area. Two walls meet to form a T-junction in the south-east corner of trench MN13; they are circa 60 - 65cm wide, built header-stretcher fashion but not according to any precise pattern. The bottom course is partly made up of bricks on their swords'. The wall in the north-east end of the trench is much narrower (30-35cm, the length of one stretcher), and was also built with some of its bricks on edge as headers in the bottom course. it stood five courses high, and continued into trench MN10; its original length is not known as it comes to an end in the middle of MN13 without turning a corner, but is survives for a length of 5.80m. In (MN10) it is bonded to another mud brick wall, forming a slightly obtuse-angled corner.

Along the north-west side of the trench another rectangular mud brick feature, presumably the end of another wall, was found jutting out of the section. It stood five courses high. All the walls were apparently built from the same level. The small section of wall visible along the north-western side of the trench is roughly aligned with the wall which runs into (MN10), while the walls forming a T-junction in the east corner of (MN13) are also approximately on the same alignment.

Surface (MN13)74 was the best quality 'floor' so far excavated in MN13, a flat and almost concrete-like layer of coarse sand. The surfaces at the northern end of trench MN13 were always considerably less even or less flat than those in the area further to the south and east, but no specific reason was found to account for this; presumably this area lay outside the building occupation area and was, therefore, more consistently subjected to erosion. Similar to those in the adjoining trench, while the rest of the trench was much broken up and disturbed, containing an extensive layer of ash, bone and pottery. This layer began just under the present ground surface, and bore every sign of a rubbish deposit, containing some particularly fine pieces of Soba ware. In the middle of this deposit there stood a mud brick hearth, but no structures were found associated, although the hearth only lay at a short distance from the outside corner of the walls. Hearths were also found in MN13, but the bricks had largely disappeared, although the construction technique was probably similar to that of the more complete hearth. It should be noted that, once the first surface pierced with post-holes had been found, there were traces of a hearth or what appeared to be an ashy pit in all the floor surfaces in the central-eastern
part of MN13, as well as adjoining ashy patches, as if more temporary hearths had been used contemporaneously with the main hearth.

In the south-east corner of room 1, in MN10, a globular pot was found, complete but for the rim. Nothing of further interest was found in this room, except for a general build-up or rubbish deposits cut through by animal holes.

In the south-west corner of MN10 there was an unusual feature, consisting of two sides of a square (?) cut 6cm deep, facing the corner of the trench, straight-edged and with three postholes associated, one at each corner of the cut, extending out of the trench. A few sherds of Soba ware were recovered from one of the post-holes.

As mentioned above, little could be made of the alignments of post-holes in the successive surfaces, although a couple of alignments deserve some discussion. The most plausible ones are in the coexistent layers 87 and 96, a layer which goes underneath the mud brick walls (the last to be exposed during the 1989-90 season). A straight line of four post-holes with an average diameter of 19cm runs approximately east-west across the middle of the trench for a distance of 3m. Other post-holes on this alignment were visible in later levels, but they did not extend the line beyond the three metres. Surface 60 also had a considerable number of more regularly laid out post-holes. It was not possible, however, to determine the relationship between the mud brick walls and the post-holes. although two post-holes in particular virtually abutted the walls in the east corner of MN13. The post-hole to the north-east of the northern wall was dug from level 74 as is evident from the outline of its post-holes with surviving, differentiable, post-pit/post-pipe fills that might give us a clue to the life-span of the posts, and to the build-up of floor levels within the life-span of each individual timber structure.

Excavation in the 1989-90 season was halted at the base of the wall foundations, but it is likely that a considerable depth of stratigraphy remains to be investigated before the subsoil is reached.
MN8 lies 120m to the south west of mound M12, on the other side of the Khor. Excavation uncovered an area of 291.5m² and revealed over 400 post-holes and pits. Building plans were rarely apparent, but traces of two circular timber huts were noted, one measuring 5m in diameter with an area of burning in the centre, presumably indicating the position of a hearth. The other hut had a diameter of circa 4.5m, with part of its mud floor still surviving. A raised kerb 4-5cm high which ran the course of the hut’s perimeter remained in situ. Perhaps associated with the hut was a complete beer jar type vessel which had been set into the ground with its rim level with floor surface, and with a black burnished bowl serving as a lid. The apparently random layout of the great majority of the post- and stake-holes is presumably due to wind and water erosion of the site, which have removed the individual levels from which the post-holes had been cut.

A large pit in the northern corner of trench MN11, measuring 1m in diameter and 1m in depth, was of special interest. The Early Medieval Soba ware was rare in its fill, but a number of pots which appear to be in the distinctive Post-Meroitic style were uncovered together with Meroitic style pottery. This material may therefore represent a pottery assemblage of the transitional phase between the late Meroitic period, the Post-Meroitic pagan Kingdom of Alwa and the pottery styles current under the new Christian ideology when the potters drew the inspiration for their decorative motifs from Christian mural art (see Welsby, forthcoming).

The post-holes found throughout the trenches are often, due to the eroded nature of the surfaces, difficult to recognize as significant patterns; they represent a confusing palimpsest of the sum-total of occupational activity over the area. It was, however, interesting to notice that the post-holes in the pre-church phase on mound M12 were paralleled by similar occurrences in the pre-church phases on mound B. The occurrence in both areas of excavation of pits containing Soba ware was particularly interesting, as it suggests the widespread use of timber as a major building material in the early Medieval period.
MOUND M12

M12 (trenches M14-16) is a prominent, largely natural mound, crowned by the remains of a red brick building, 800m to the west of the tomb. As is usual with the red brick buildings at Soba, it has been extensively robbed, but its ground plan was clear (fig. 3) and occupation deposits survived in many of the rooms.

The 'Pre-Church' period - pre-church features were relatively unspectacular, consisting chiefly of an extensively random series of post-holes and irregular pits, with the exception of (M14) 40, a conical pit with an opening measuring 3.20m in diameter and 2.30m in depth the bottom being rounded). This feature had a mud brick wall running the course of its circumference which was found standing two courses high; the interior of the pit was rendered in mud mortar. The upper layers of fill included mud brick rubble which possibly was part of the mud brick circumference wall; the rest of the fills included charcoal and ash lenses in a brown, sandy and gravelly matrix, with occasional mud brick fragments interspersed throughout. Among the large amounts of pottery recovered from the pit were late Meroitic/post-Meroitic beer jar necks, a complete, though broken, qadus and quantities of Soba ware.

Excavation was continued down to the subsoil or the bedrock over the whole area of the trench, a total of 412m².

The 'Church' Period - The building was aligned east-west, with three aisles and two ranges of rooms to the east (fig. 3). The main structure measured 17 by 11m in size, with an L-shaped room (7) at the western end, possibly secondary, measuring 15m by 4.40-7m. It extended beyond the line of the south wall of the structure and was entered through a doorway on the south side: there is a small stone post-pad on the eastern side of the doorway. The roof over the aisles was supported on timber posts resting on stone post-pads. At least some of the internal walls were coated in a mud rendering, white-washed and painted in red blue and yellow. In places there are suggestions that the external walls were rendered in a hard white lime mortar.

There is virtually no surviving evidence for the construction phase of the church: the construction trenches were presumably obliterated at the time of the
intensive robbing of the walls and floors. However, the large construction pits, dug to receive the stone post-pads in the nave, and filled with gravel, were excavated. In the earliest church phase feature, a large, 'bathtub' -shaped pit (3.04 x 1.51m at the top) was dug into the bedrock along the western edge of room 1 to a depth of 1.24m (1.48m including the ledge). The vertical sides, rounded into the bottom, were rendered in a brown mud mortar. At or close to the ground level at the time of construction, a ledge 14-17cm in width ran along each side of the pit and the sides extended at least a further 24cm heigh. No indication of function was found, although the most plausible use might have been as a tomb, as the pit clearly was contemporary with the church. However, its north-south alignment would seem to belie this hypothesis; nor was an inhumation found. When excavated, the feature was found to contain large quantities of red brick rubble - overfired, deformed bricks - in its upper fill layers. Because the bricks were probably wasters it is extremely unlikely that the rubble in the pit is the result of the collapse of the church. The pit must have been purposefully filled in, once its original function had been superseded, before the general collapse and robbing of the church. The function of room 1 is altogether unclear, being superfluous to the usual Nubian church plan. However, church A on mound B has a range of rooms behind the sanctuary which includes a crypt.

The east-west alignment of the building, together with the presence of a timber alter and two phases of higab, (the screen dividing the sanctuary area from the body of the church), one of timber, the other red brick (see room 6) indicate that the building was a church. The timber higab appears to have been built with the support of six posts, resting on small stone post-pads: three of these lie immediately in front of the later red brick higab, which rests on top of the fill of the southernmost post-hole, but not over the post-pipe itself. The northern part of the brick higab has been robbed out, while the stone post-pads and post-holes remain visible at this end. At the western end of room 6 there survive, towards the middle of the wall, a number of fired bricks along the alignment of the wall which most probably are the post-pads for timber doorposts. Otherwise there is no evidence for doorways within the main body of the church.

Throughout the life-span of the building layers of sandy soil built up in most of the rooms: it is notable that with the exception of (M14)28, in room
one (M15) 509 in rooms 6 and 7 no floor surfaces as such were noted. The surviving red brick floor in room I, was coated in a hard, white lime mortar. It reuses broken bricks as well as whole ones, which measure on average 40 x 20 x 6cm, identical in size to those used in the walls of the building. No remains of bonding mortar were detected. A mixed layer of earth, pebbles and red brick fragments subsequently built up over the floor surface, comparable to a similar layer which underlay the floor. The few surviving wall fragments are unexceptional, surviving to a maximum height of 3 courses in the case of (m16)21, but normally one course was all that remained. The bricks were sometimes laid in alternate courses of headers and stretchers or in courses combining the two, but too little survives for us to gain any notion of the style of coursing.

The remains of a timber altar were found in room 3; very little can be said about this structure as only a single wooden plank (85 x 25 x 5cm) running north-south was found. The plank was set into a layer of sand with a hard, compacted surface, which in turn covered the top of a pit near the western side of room 3, containing a complete, though broken, jar (with mending holes), measuring 39cm in diameter and 53cm in height. The jar was covered with a piece of wood measuring 38 x 30 x 1cm and filled with soil, but no artefacts; soil samples were taken and are currently awaiting analysis. The function of this feature, which belongs within the life-span of the church is unclear; it could easily have been concealed from view and was presumably used for storage.

An area of 19m² was excavated around the east end of the building, but no burials were found. To the south-west and south-east 108m² and to the north 27m² were excavated, but only two archaeological features were found. To the south of the church a wall fragment [(M14)180] consisting of one course of three red bricks laid as headers was found extending into the section. What kind of structure it belonged to is not clear. The other external feature was a shallow ditch to the south-east of room 1, 20-25cm deep and disappearing into the section after two metres. It is difficult to determine its chronological relationship with the church, but it is probably earlier than or contemporary.

The 'Post-Church' period - this is principally characterised by the robbing of the red brick walls (and floors) of the church, in fact except for a few scraps of wall still in situ, it is only the lines of the robber trenches that give us an
indication of the layout of the building. Numerous post-holes and pits cut the church period deposits, but it was not possible to discern any patterns indicating structures; these would evidently have pre-dated the robbing of the walls, etc., after which the building must have been abandoned and have fallen into complete ruin.

The church on mound M12 is only the sixth known and excavated church in the Kingdom of Alwa, and the details of its construction are therefore of particular interest. Comparison with the other four churches so far excavated at Soba, which could be expected to provide the closest parallels, yields a number of contrasts and similarities.

Attempts to find a modular measurement were inconclusive. The thickness of the walls, in the few surviving instances, was approximately 70-75cm, comparable to the Greek bema, which compares precisely with the walls in churches A and B on mound B at Soba. The size of the bricks used varies somewhat (see below), but on mound B a special effort seemed to have been made to preserve the 70-75cm units of measurement throughout the buildings, although it was only in the central church that it worked as a modular measurement. In the church on mound M12 the bema relates to the dimensions of the main body of the church, but not to the narthex; however, it is in the narthex that the walls whose widths can still be measured are found.

The surface area of the main body of the church was $187m^2$, with the narthex measuring another $67.5m^2$, $254.5m^2$ in total. This makes it only slightly larger than the $198m^2$ of church C on mound B, but it is completely dwarfed by church A ($688m^2$) and church B ($605m^2$). It is not clear what the chronological relationship is between the excavated churches on the different mounds. The church on mound M12 appears broadly to have two phases, the earlier without a narthex but with a timber higab, the later with an added narthex and a red brick higab. However, the addition of room 7 is not necessarily contemporary with the installation of the brick higab. The presence of a narthex is characteristic in early Nubian churches, as is the absence of an apse (Adams 1965, 91ff). The absence of a projecting sanctuary chamber was interesting, not being paralleled by the other churches at Soba.

As in church C timber posts will have stood on the stone post-pads to
supported the roof over the nave and aisles. The bricks used in the walls were close to the average quoted by Adams (1986, 607) for Late Christian fired bricks in northern Nubia, but these dimensions did not correspond to the red brick sizes found in the churches on mound B.

In church A there were two higab phases; the earliest higab was built combining bricks and wooden posts, while the second was built exclusively of red brick. There were also two separate phases of higab in the church on mound M12, one of timber and the second of red brick. There is no parallel for the buried pot in the churches on mound B. No trace of a pulpit was found in the church on mound M12. The unusual 'L'-shape of the narthex (room 7), if this is the function of the later addition, seems to be unique among Nubian churches. Perhaps the layout of neighbouring buildings (or the vicinity of the khor further to the west) at the time of the building of the narthex necessitated that the entrance be on the south side.

Room 3/4 is unusual in that no trace of wall or other partition was found, as would have been expected, to divide the diakonikon from the sanctuary chamber in the haikal range. The extra room behind the sanctuary range is also odd; it is unlikely, for example, that feature (M14)107 was used as a baptismal font as it was not lined with hydraulic plaster, and for the reasons discussed above it highly unlikely to have been a tomb, though burials have been found in a similar position on mound B behind churches A and B. No trace of a baptistery was found.

THE FINDS

Apart from the contents of pit (MN11) 8 (see Welsby, forthcoming), the pottery from the 1990 season has not as yet been studied in detail. A full account will appear in the final report.

The small finds were, with few exceptions, of an unexceptional nature. Large numbers of clay beads were found (a total of 225), unpainted and otherwise undecorated, with a particularly heavy concentration in trench MN13. A considerable number of ostrich egg shell beads (61) and some glass paste beads were also recovered. Clay bungs or jar stoppers were found, but they were much smaller in size and in general more fragmentary than those unearthed on
Mound B in the 1985-86 season. In one or two instances the smaller bungs were found with potsherds still pressed into their undersides, possibly as a means of preventing earth from the bung from crumbling into the contents of the jar, or to stop the bung from dissolving in the case of the jar's contents being liquid. A large quantity of stone rubbers, balls and bases of local sandstones and ironstone were discovered, particularly in trenches MN10, MN11, MN12, and MN13.

Among the more notable finds a number can be paralleled with the finds from the previous campaign:

footnote for the small finds from the previous campaign see Allason-Jones (forthcoming). The numbers quoted here refer to the finds in that publication.

tanged iron arrowheads (cf. nos. 97-100); simple iron latchlifters (cf. no. 125); faience 'melon' beads (cf. no. 255) and thumb-rings (cf. no. 311-315).

A notable collection of crucibles and moulds were found in trenches MN10 and MN13. Two of the crucibles were made of a brick-like fabric; a mould for a cross was also found, which would have measured circa 36.5 x 35 mm. Several pieces of pottery dorming blocks, used for cold-working repousse hemispheres and golbular beads (cf. Ogden 1982, pl. 4.5) were recovered, as were two stamps of fired clay bearing Christian motifs. A quantity of slag was also recovered in these trenches, suggesting at least small scale industrial activity. Two conjoining fragments of a skillfully carved shell object, possibly a bowl, decorated with incised cross-hatching, parallel lines and scroll motifs were recovered in trench MN13.

ACKNOWLEDGEMENTS

The Department of Antiquities in Khartoum facilitated our work in every way throughout our stay. In the field we were assisted by an Antiquities officer, and at the request of the Department of Archaeology at Khartoum University we provided training for two of their final year students. The British Council, through the good offices of their Representative, Mr. Patrick Early, and his
administrative officer, Mr. Kevin Bright, provided us with a variety of vehicles. The project was financed by grants from the British Institute in Eastern Africa, the British Museum and the Society of Antiquaries of London. Five photographic films were provided by Jessop of Leicester and surveying equipment was kindly loaned by the Departments of Archaeology and Surveying at the University of Newcastle upon Tyne and by Tyne and Wear Museums Service through the good offices of Mr P T Bidwell. Surveying and digging equipment was also borrowed from the Department of Archaeology at the University of Khartoum through the kindness of Dr. Ali el Tijani. Lastly, many thanks are due to our landlord, Muzamil el Kurdi, who gave us every help and provided us with comfortable accommodation near the site and showed us unfailing hospitality.

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EXCAVATIONS AT SOBA EAST, CENTRAL SUDAN 1990-91
by Derek A. Welsby

INTRODUCTION

The second season of excavations in the current campaign at Soba East, conducted by a team of eight archaeologists from Britain, Germany and Sweden¹, was in the field from 16th December 1990 until 12th March 1991. The Site of Soba, which was, at least from the 9th century AD the capital of the Medieval kingdom of Alwa (al - Ya' qubi in Vantini 1975, 78) Lies on the east bank of the Blue Nile, 22 km south east of Khartoum. A number of Meroitic stone sculptures have been recovered from the site, but the bulk of the surviving evidence dates to the period from the 6th to the 13th centuries AD. Although the site is said to have become a major Funj metropolis after the Funj conquest in the early 1550s, so far, only a handful of Funj pottery has been recovered. The traveller David Reuben who passed through Soba in 1523, noted that the town lay in ruins at that time.

During the 1989 - 90 season three areas towards the north-western edge of the site, mounds M12 and area MN8, were investigated and a red brick tomb (UA3) lying immediately to the east of mound UA was also uncovered.²

The complete excavation of mound M12 revealed the plan of a small church constructed of red brick which had been very extensively robbed. Beneath it a number of pits contained early³ Medieval pottery and pottery types elsewhere recovered from graves of post-Meroitic date. To the north west, area MN8 had been occupied by a complex of timber structures, but most of the associated floor surfaces had been removed presumably by wind and water partial plans of two circular huts were noted and pottery recovered erosion. The recovered from several pits. The pottery was of the same character as that found

1. Team members: R Burch, T Mennear, I Rogers, I Sjostrom, L Smith, B Uenze, D Welsby G. Young.
2. For the location of these areas see the foldout plan in Welsby and Daniels 1991
3. For a similar basin of identical dimensions recovered from trial trench D9 on the north-west side of the site excavated in 1982 see Welsby and Daniels 1991, 17
sealed beneath the church on mound M12. Mound MN3 covered the remains of a long sequence of buildings of mud brick and timber sealed beneath a rubbish deposit very rich in pottery of early Medieval date, bone and ash. Excavations in this area were not completed in 1990 and were continued of 1990-91 season. So far a total of 13 floor surfaces have been locaated associated in the later phases with mud brick walls perhaps set within timber fenced enclosures and at an earlier date by structures solely of timber. In the final season excavation will again be continued in this area.

It had been hoped to continue the excavation of the tomb during the winter of 1990-91 but circumstances beyond our control conspired to make this impossible and work on the skeletal material remaining within the tomb will be undertaken in the coming season.

**The 1990-91 season**

The present campaign is designed to allow the investigation of a number of widely spaced areas across the site which appear from the evidence provided by the trial trenches dug in 1981-83, to be of differing characters. This should allow an appreciation of the structural diversity across the site and provide information on the city’s development. In pursuance of this aim the second season of excavation concentrated on two mounds at the opposite side of the site over 1.5 km to the south east of mound M12.

**Mound Z1** (trenches Z3 Z4 Z9 and Z10) is a prominent mound rising to a height of over 1m above the level of the surrounding plain. It is the most south easterly of the mounds at Soba and must lie close to the limit of the occupied area in that direction. As such it is immediately adjacent to the south-east boundary post of the Antiquities zone and hence is particularly at risk from damage especially from road building. It is a typical red brick mound, its surface covered with large numbers of red brick fragments and the centre of the mound being dished and filled with wind-blown sand. As with all the mounds of this type at Soba the structure beneath it has been extensively robbed.

Excavation has yet to be completed on the mound and at this stage little can be said with certainty. All the robber trenches belonging to the latest phase of the robbing were emptied and it was clear that by the date of this robbing,
most of the walls had already been removed. The layout of the trenches indicated that the attempt to remove further bricks was not an altogether fruitful exercise. A start was made to excavate the primary robbing phase. This was a systematic enterprise, the robber trenches unerringly following along the wall lines and removing virtually all the bricks. A few fragments of red brick wall did survive, in one place 84 cm wide and built from bricks 38x29x9cm in size. The plan of the building (building G) is still far from clear and the phasing of the visible features has yet to be elucidated.

On the evidence at present available the structure appears to be rectangular in plan, 10.5 m wide by at least 18m in length. At the western end there are three parallel walls of red brick closely spaced, between two of which, is a wall or packing of mud brick. The core of the building, delimited by a wall of red brick, formed a raised platform a minimum of 50cm high built of red bricks set in mud mortar. A number of large stone elements, perhaps post-pads or pier column bases were set into it (pl.1). Towards the eastern end and set symetrically astride the long axis of this podium is another podium measuring 4x4.5m with an outer skin of stone set in mud and with a core of mud. The smaller podium was surrounded by a narrow robber trench (pl. 2) which may originally have contained wall constructed of sandstone. A large number of dressed stone blocks were found in the vicinity, but not a one remained in situ. The digging of this robber trench has severed the relationship between the stone and mud podium and the podium of brick. However, the regular layout of the two suggests that they are contemporary and part of the same structure.

One might envisage a raised brick podium perhaps with access up onto it from the western end, with a further podium or tower towards the east. The brick sizes employed and the plan of the structure suggest the possibility that it may be earlier that the other buildings so far noted at Soba. Bricks used at Soba in its Medieval buildings vary considerably in size but in thickness conform closely to the norm of 6-7cm. Bricks of 9-10cm have been thought to characterise structures of Meroitic date (ccf. Bradley 1982, 163)

**Mound Z1** (trenches Z5, Z6, Z7, Z8,) is a very low mound beneath which a trial trench excavated in 1982 (trench Z2) located a stone foundation. Very little depth of stratigraphy survives, a maximum of 30cm down to the subsoil, but the remains of a complex of buildings are preserved.
Three main periods of occupation were revealed.

**Period 1** - A building (building F) with a central rectangular core 22.75x13.6m and a range of two rooms projecting to the east and west mid way along the structure and with a single room projecting on the central long axis to the south (fig.1). Across the north end of the building is a range of three rooms. The building has foundations of stone set in mud mortar usually from 0.6 to 0.9m wide although the wall between rooms 4 and 8 was only 0.4m wide and that between rooms 4 and 5 was 1.23m wide. Little of the superstructure remains, but what does is of red bricks 41-36 x 19 - 17 x 6cm in size. Floors are small square hearths and a larger example is to be found in the central area. A number of floor surfaces remain in a some of the rooms associated with pits and mud storage bins.

**Period 2** - Red brick walls but the building from the east, west and south and red brick walls also divide up the interior of the structure (pl. 3). However, at this stage of the excavation it is uncertain whether some of these red brick walls have stone foundations and hence belong to the first period of the building. Some of these additions extend out of the excavation area. Sealed beneath one of the sand floors associated with the red brick extensions to the main building (in room 22) was a rectangular pit {(26) 119} with rounded ends 6.45x1.536m in plan and a maximum of 0.8m deep (pl 4). Within it were found sherds of a very large storage pot and a complete, though broken, ceramic basin 1.2x0.6x0.35m in size with a cross in relief at one end above a projecting spout. This find confirms the continuing use of the building into the Medieval period.

**The function of the period 1 and 2 buildings**

There is little evidence from the finds to indicate the function of the period 1 building and of the period 2 additions. What little pottery has been recovered includes early Medieval fine wares and ribbed amphorae possibly of Egyptian manufacture. Two ceramic crosses and one of glass were found in the topsoil and a 176mm length of gold wire was recovered from one of the robber trench
fills. The character of the building suggests that it is an official structure designed for the housing of small semi-independent groups of people although what exactly it may have been is uncertain. A monastery may be a possibility, but no obviously monastic features such as a chapel or a refectory have so far been located.

**Period 3** - To the west and north of room 6 a timber structure was located. The full extent of the structure was not revealed, but a single alignment of post-holes 11.35m long with 19 holes lay at right angles to two parallel alignments only 20cm apart and 3.4m long of three and six holes. At the south end of the alignment there is no indication as to which direction, if any, it may have continued. At the east end of the east-west alignments another possible row of post-holes runs off to the north. The two north-south alignments extend across the line of red brick walls dating to period 2 and it is clear that, by the date of the construction of the timber structures, the foundations of the red brick walls had been totally removed at least in some places. To the south east of the building are two further 'L' - shaped timber structures (pl. 5) which extend towards mound Z1 where excavation has not yet proceeded to the same level.

These timber structures, whatever their precise character, are substantial structures. Although no occupation material certainly associated with them survived there was a complete absence of post- Medieval pottery from the site suggesting the possibility that they are of Medieval date. Their position in the stratigraphical sequence is clear and may suggest why the character of mound Z2 is rather different from that usually found overlying the ruins of red brick buildings at Soba. Very little rubble overlay the buildings in this area indicating perhaps that the building was standing above ground and had not begun to fill with sand and the rubble from its own decay prior to the robbing of its walls. One may tentatively suggest that the building was demolished during the Medieval period, the site being levelled and subsequently built over by structures of timber.

To the north east of mound Z1 in the flat plain a small rectangular setting of red brick fragments with a rounded end to the west was visible in a vehicle track and a number of other similar structures were found in the vicinity. These are presumably marking the position of graves.
Acknowledgements

Throughout the season the team was greatly assisted by the staff of the Department of Antiquities in Khartoum. Thanks are also given to the British Council and the British Embassy for their assistance in locating a vehicle. A small amount of archaeological equipment was borrowed from the Department of Archaeology at Khartoum University through the good offices of Dr. Ali Tijani. The theodolite was borrowed from the Department of Surveying, Newcastle University. As usual we were given the use of a house at Soba by Musamil el Kurdi.

The project was funded by grants from the British Academy, the British Institute in Eastern Africa, the British Museum, the Society of Antiquaries of London and the University of Newcastle upon Tyne.

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EXCAVATIONS AT SOBA EAST, 1991-92
by Derek A Welsby

Excavations by the British Institute in Eastern Africa at Soba East were conducted for a period of three months from November 1991 to January 1992. The ancient site at Soba East is situated on the east bank of the Blue Nile 22km upstream from its confluence with White Nile. The work of the present campaign has concentrated on the excavation of a number of areas around the periphery of the site. From surface indications and from the material recovered during trial trenching of the site in 1981 - 83 these areas yielded material contemporary with the earliest occupation known at Soba.

The earliest literary source to record that Soba was the capital of the Nubian Kingdom of Alwa dates to the 9th century (al-Yaqubi in Vantini 1975, 71). Prior to that date there is no mention of Soba in the historical record and there is no evidence to indicate at what date it became the capital of the Kingdom.

During the course of season the excavations begun in 1989 - 90 on mound MN3 towards the north-western edge of the site were completed, the graves by the northern church on mound B were excavated and the burials within the tomb UA3 were removed for study. The main thrust of the excavations, however, was concentrated on mounds Z1 and Z2 at the south-eastern edge of the site. The team consisting of 10 people from the U.K., Sweden, Canada and the USA assisted by up to 56 local workmen.¹

Mound B - Fourteen graves had been revealed immediately to the east and north of the northern church on mound B during the earlier campaign of excavation by the BIEA (Welsby and Daniels 1991, fig. 2). Twelve of these were excavated this season and the located elsewhere on the site being narrow cuts with rounded ends and often of considerable depth. All contained extended inhumations except for one which was slightly flexed to allow it to fit within the grave cut. They were aligned east-west like the adjacent church. Within the graves the bodies were laid with the head to the west. Five of the

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inhumations were laid on their backs as where those located in the crypt within the northern church and that beneath the circular tomb immediately to the east of central church. The other seven burials have the body placed face down and with one or more bricks laid on the shoulder blades, in the small of the back or on the thighs (p.11). Sometimes bricks had been placed around the skulls to symbolically protect them. On occasion the legs are crossed at the ankles and the hands placed in the pelvic area.

Fragments of textile, leather and basketry were found in one grave, and pieces of textile were found in seven others. All this material, like the textiles found in the crypt of the northern church in 1983 (Vogelsang-Eastwood 1991, 300), was in an extremely poor condition.

The tomb (UA3) - This structure, discovered in 1988 when a lorry broke through the vault, was excavated in 1989-90. During this season the bodies were removed by Mrs Roxie Walker, our paleo-pathologist and are now undergoing examination at the British Museum. A total of 16 adult skeletons were found together with the skeleton of an unborn child. One small fragment of textile was found associated with the bodies.

Area MN3 - The excavations revealed a series of floor surfaces cut by a large number of post-holes which in the later phases were associated with mud brick walls. All the structures at all phases appear to have been rectilinear. Alignments of post-holes were recognised, but no complete building plan could be identified. The posts may have delimited or partitioned enclosures. The mud brick walls relate to buildings which lay largely outside the excavation area. The latest floor surface was sealed by up to 50cm of rubbish material containing a mass of pottery, ash and bone. From whence this material was derived is unknown. Excavations was continued down to the subsoil gravel which formed an undulating surface with a shallow 'ditch'-like depression towards the centre of the area. Throughout all the layers the pottery assemblage is characterised by the high proportion of the early medieval fine painted Soba ware.

Mounds Z1 and Z2 - An area of 2600m² was excavated revealing two building complexes, building F beneath mound Z2 and building G to the south beneath mound Z1.
Features per-dating buildings F and G

Building F overlay a large number of post-holes, including one are of post-holes perhaps representing the wall of a circular timber hut 6.75m in diamater. At least two structures built of timber posts (p1.2) were contemporary with the first phase of building F and went out of use when the red brick additions to the building were constructed and when the enclosure wall around building G was built, if not before. At least two alignments of post-holes extend beneath the mud brick enclosure wall on the north side of building G. The stratigraphical relationship of the post-hole alignments to buildings F and G make it clear that building F is the earlier of the two and that building gG may be contemporary with the second phase in the northern building.

Building F (fig. 1)

There were two major periods of occupation of this building although the contemporaneity of all the phase 2 additions cannot be proven.

Phase 1 - unlike the other buildings excavated elsewhere at Soba this building had foundations of undressed stone set in mud mortar. The superstructure was of red brick. It was rectangular, c. 22.5 x 13.5m in size, with two ranges of two rooms projecting to east and west and a single room projecting to the south west. Across the north-western end of the building was a range of three rooms, the central one apparently open towards the unroofed courtyard to the south.

During the construction of the building the mud used as bonding material in the walls and foundations was extracted from within and immediately outside the building leaving a large number of circular shallow pits which were subsequently filled with a little construction debris and with black earth, material identical to the subsoil which had been extracted from them. One pit contained amongst its fill a cache of fragments from small models of animals made from unbaked clay. These do not appear to be a ritual deposit, rather they were dumped into a convenient partly-filled pit. The upper fills the pits within the building were used as the primary floor surface.

Very few finds were associated with this phase and the only features recovered which gave a clue to the function of the building were two hearths
within the courtyard, which contained slag.
Phase 2 - The additions and modifications to the building, all constructed of red brick, fall into three groups.

1 - The alteration of the southern part of the building with the construction of a complex of rooms.
2 - The addition of rooms to the east of the building
3 - The addition of rooms to the west of the building.

Two walls were also constructed running south from the building, but as they do not delimit rooms their functions are unclear. As a result of these activities the building attained overall dimensions of approximately 40.5 x 27m. The differing styles of construction and the different sizes of bricks used suggest that these modifications were not contemporary.

It is clear that in this phase the building was used for domestic activities. In five of the rooms were small square hearths resting on the floors of sand and two rooms had small semi-circular hearths. Several storage bins were also noted.

The best dating evidence for the building was recovered from a long narrow pit which cut through a floor associated with the secondary phase of the occupation, and was sealed by a further floor surface. The pit contained a large amount of pottery including sherds from a Ballana type 6 amphora, the date of manufacture of which falls within the period mid 4th to mid 7th century AD. Also in the pit was a large sub-rectangular ceramic basin with a small spout at one end and with a large cross in relief on the wall above the spout (p1.3)

After the demolition of at least the western range of the building down to its foundations and in some cases including the removal of the foundations themselves, at least one timber structure was constructed across the area. The large size of this indicates that it was probably a rectilinear enclosure rather than a building.

**Building G (fig. 2)**
The excavation of this structure was not completed in the 1991 - 92 season and it is, therefore, likely that subsequent work will modify to some extent the
conclusions set out here.
Two main phases of construction were observed:-

Phase 1 - The construction of a mud brick wall enclosing a rectangular area approximately 31.5 x 24.6m. Traces of mud brick walls along the western side of the enclosure suggest that there may have been a range of small rooms at that point. Set centrally within this enclosure was a red brick rectangular structure containing a 'podium' 5.2 x 5.1m in size. The core of the 'podium' is of earth revetted by a wall 1.15m wide ferruginous sandstone. None of the stones used to construct this revetment wall are dressed, but some attempt has been made to form approximately straight faces to the revetment. The outer face of the revetment is stepped back c. 50cm and resting on this step is a foundation of yellow sandstone a little over 30cm wide. It is likely that the whole podium was faced in the well-dressed blocks of yellow sandstone which are found in some numbers on the site. This yellow sandstone is also used to form the foundations of three 2.3m wide 'buttresses' which project 1.3m from the south, west and east sides of the podium. Nothing remains of the superstructure so we have little idea of what form it may have taken.

Phase 2 - At the west end of the phase 1 building a series of parallel walls was constructed running north-south and spaced from 1.05 to 0.4m apart. To the east the superstructure of the 'buttresses' was removed down to their foundations and a red brick podium was constructed over them. No trace of the red bricks survived in the area of the stone podium and it may, therefore, have remained in use. Set within the red brick podium were originally six stone post-pads, column or pier bases forming two slightly converging rows of three running east-west in line with the two engaged piers at the west end of the podium.

The most likely function of the parallel walls at the west end is that they are the foundations for a stairway or ramp giving access onto the podium. At present the podium only survives to a height of approximately 10cm above the contemporary floor surface to the west, but a deep stairway would suggest that originally the podium was considerable higher.

Contemporary with the alterations to the core of the building a range of rooms was added around the western end with a room projecting further to the
west on the long axis. By this date the mud brick enclosure wall had gone out of use.

The cemetery - A total of 23 graves were located to the east and south of building G (pl. 3) and further graves are visible on the surface over 30m beyond the excavation area to the east. Some of the graves, which are oriented as the phase 1 building, may be contemporary with it. Others overlying the enclosure wall are more likely to be contemporary with phase 2. There are also several intrusive burials in the cemetery which in several cases cut into the rectangular superstructures of the earlier graves.

A number of different types of grave structure are represented.

1 - a rectangular superstructure formed by a narrow wall constructed of mud bricks, red bricks, or a combination of the two. The area bounded by these walls may have been purposely filled with earth to form a solid platform. Of the three of these graves which were partly excavated, two had a red brick barrel-vaulted chamber (pl. 4) within which was a single extended inhumation placed on its back with the head to the west, one laid in a wooden coffin. The other had mud bricks set on edge and placed across the narrow grave cut forming a roof.

2 - graves, probably with the bodies placed in long, narrow cuts, set within large but shallow rectangular pits. These look very similar to a number of the graves found to the east of the northern church on mound B where the red brick pavements with which they were surrounded had been robbed out.

3 - long narrow grave cuts with red bricks placed over the top of cut.

4 - oval graves containing extended and crouched inhumations with various orientations.

The function of building G

The presence of the graves and the plan of the building suggests a ritual function. A number of features of the construction and of the plan can be paralleled in Meroitic temples in the Butana and at Meroe itself. It bears no
resemblance to any known church plan. However, at least some of the bodies in
the cemetery appear to be buried according to Christian mortuary practice with
the body laid with the head to the west and unaccompanied by grave goods. It is
possible that we have here a pagan temple reused as a Christian church and thus
remaining a focus for Christian burials. The absence of any structural remains
of a church can be explained if they had existed on the red brick podium from
where they will have been totally removed by the activities of the brick robbers.

The date of building G

A number of painted pottery sherds of a very different type to those noted
in medieval layers elsewhere on the site has been recovered from the building.
The style of decoration is similar to that used on fine Meroitic wares (cf. Adams
1986, Meroitic Domestic Style, Meroitic Fancy Style and Meroitic Naturalistic
Style). Also several sherds in a highly distinctive fabric of identical type to
effects found on Meroitic sites in the Shendi region were found. In a pit
overlying one of the building's robber trenches was a terracotta head perhaps of
a leopard which may also be of Meroitic date.

The evidence for Meroitic occupation at Soba continues to increase. The
structures and features observed beneath mounds Z1 and Z2, appear to span the
period of change in the religious ideology from the pagan to the Christian, one
of the most characteristic features of the cultural changes to mark the transition
from the Meroitic to the medieval periods.

Acknowledgements.

The 1991 - 92 season was financed by grants from the British Academy,
the British Institute in Eastern Africa, the British Museum, the Society of
Antiquaries of London and the University of Newcastle upon Tyne. The cost of
R. Walker's participation in the project was met by the Bioanthropology
Foundation of Sausalito, California.

The team was greatly assisted in the field by the staff of the National Board
for Antiquities and Museums in Khartoum. For much of the season a vehicle
was provided and fuel was made available by the British Council through the
good offices of the representative, Mr A Thomas. A small amount of excavation
equipment was borrowed from Dr. A. Tijani of the Department of Archaeology at Khartoum University. The dig house at Soba was kindly made available by Muzamil el kurdi. Patrice and Brigitte Lenoble helped us in more ways than there is space to describe. From the U.K. Dr. J. Lloyd loaned us his theodolite and Mr H Welfare provided a staff.

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THE ITALIAN MISSION FOR PREHISTORIC RESEARCH IN EGYPT AND THE SUDAN: SURVEYS AND EXCAVATIONS IN THE KHARTOUM PROVINCE
1970 - 1989. (1)

The general objectives of the Mission, and the reasons for Prof. Puglisi to set it up, in 1966, consist in the comparative analysis, in different environments, of major cultural changes in prehistory. In particular, the processes connected with the beginning of food production and with the development of complex societies appeared to be of outstanding interest in Africa, both in desert and riverine environments. Previous works in the Sudan and comparable prehistoric research in the Sahara had already suggested that cultural development in the tropical regions could have followed peculiar pathways, compared to Europe and the Near East. Furthermore, it was thought that the river Nile should have represented a very attractive feature in such an environment, especially for hunting-gathering people, so that research along the Nile, south of the Tropic, seemed to be a necessary step for the design of alternative models in prehistoric cultural development.

A preliminary short survey in the Khartoum province was carried out in 1970 by Prof. S.M. Puglisi, together with Prof. T.H. Thabit, then Director General of the Antiquities and National Museums of the Sudan, in order to start systematic prehistoric research in the Khartoum region. The survey covered a concession area north of Khartoum, on the right bank of the Nile, between Geili and Kabbashi (Fig.1). In agreement with the General Directorate, it was decided to start the field activities by excavating the site of Geili, at the northern border of the concession, and at the end of the asphalt road from Khartoum to the Sixth cataract. The site is close to the railway station of the modern village of el Geili and is seriously endangered by the expansion of the modern town. It was already mentioned by Arkell in his report on the Neolithic cultures of the region (1953), but was never intensively surveyed (2).

Excavations at el Geili (1973)

The archaeological deposits at Geili included not only a settlement belonging to the so-called Shaheinab culture now better defined as Early Neolithic, with respect to the later aspects brought to light at Kadada, which
were defined Late Neolithic by the excavator (Geus) - but also cemeteries of different ages, from Late Neolithic through Meroitic, Christian and Muslim periods.

The settlement, dated to 5570+/−100 BP (uncalibrated; Caneva 1988:28), lay on a thick bank of Nile silt, in the former flood plain. A layer scattered with shells was found in all trenches at the base of the bank, at a depth of 2.45m. The layer was dated to 7000–8000 BP (Caneva 1988:28). This information not only gave an idea of the mean depositional speed of the Nile silt at that time (1 m per thousand years), but also provided a natural stratigraphy which corresponded to chronological interval between the Mesolithic and the Neolithic occupations in the region. Both sedimentological and pollen analysis were applied to this stratigraphy, documenting a gradual environmental change in this period, with slowly increasing drought, without any dramatic stress (Palmieri 1988; Lentini 1988).

Several geomorphological surveys in the region revealed that, by the time the site was established, the river had shifted its course about 1 km westwards (Caneva et al. 1986; Marcolongo 1988), so that the Neolithic settlement at Geili was not reverine. Faunal remains, however, included some fish and water molluscs, with both wild and domestic mammals (Gautier 1988). Livestock remains account for either 24 or at the most 50% of the mammalian fauna, the doubt being due to the bad condition of most of the bones, which does not always allow a good determination. At any rate, it is clear that animal breeding was not fully practised at Geili as it was at Kadero, where domestic animals account for 90% of the total. This would suggest a level of incipient neolithisation for the Geili community.

Archaeological materials from the Neolithic debris include the typical Shaheinab pottery and lithic industry. A detailed analysis on pottery decoration was applied to Geili and to the contemporary assemblages from the same province (3). The classification was based on the determination of the techniques and the implements used to obtain the decoration, rather than on the determination of the motifs obtained (Caneva 1988:100) (Table 1), according to a new perspective which considers technological aspects more informative of the action and time involved in the work, and the classification of these aspects less dependent on the subjectivity of the observer. Rocker stamp with
serrated-edge tools is the main technique represented at Geili (45%), especially in the form of unevenly serrated edge implements ("vees and dots" in the literature. The lithic industry includes both microlithic quartz implements and macro lithic rhyolite and basalt tools, the latter concering especially scrapers and gouges. The rate of retouched tools is low, compared to the contemporary assemblages of the region. Gouges and celts are rare and bone celts, so abundant at Shaheinab, are absent at Geili. Bone tools are extremely rare and only two harpoons and some awls can be recorded. The analysis of the materials emphasized a major affinity between Geili and the earlier sites of the Neolithic of central Sudan, such as Zakiab, Umm Direiwa, Shaheinab, showing perhaps an even more arcaic characterization when the economic activities attested by the lithic implements and by the faunal remains are considered.

A great number of graves were dug into the Neolithic deposits, so that the stratigraphy of the ancient site was deeply and extensively disturbed. Most of the graves did not contain offerings accompanying the burials, which meant grave shaft and burial position were often the only attributes available for a cultural classification of the cemetery. Seven main groups of graves were identified, belonging to Late Neolithic, Early and Late Meroitic, Early and Late Christian, Early and Late Muslim periods. Others, especially secondary burials, were not identified, and are thought to be possibly dated to the chronological interval between Late Neolithic and Early Meroitic periods, still not defined as a cultural unit.

Late Neolithic burials were few and not very diagnostic as to the grave goods, compared to the much richer contemporary and very similar graves excavated at Kadada (Reynolds 1982). Kadada seems to have been included in the relationships of the Geili community (almost identical objects were found in the two cemeteries), which, however, kept a very marked local character, especially as far as the funerary rite is concerned (the west-east orientation of the burials, facing south, is a fairly consistent habit at Geili, Kadero and Shaheinab, but not at Kadada).

The meroitic graves were radiocarbon dated to the 3rd century BC (Caneva 1988:28), confirming the attribution made on the typological ground. Like the Neolithic graves, these also seem to belong to a local group, in contact with the rest of the area of Meroitic influence (grave goods are of the type commonly
known all over this area), but showing quite a strong regional character in the funerary rites (shape and size of the grave, a peculiar contracted position and west-east orientation of the skeleton, etc.). A local transition to a Late Meroitic phase seems to be attested at Geili, where a grave containing later materials and dated to 1690+/−60 BP (Caneva 1988:28) shared both early and late features. Textiles from some of these graves were still preserved. They were found to be made with wild vegetal fibres, while cultivated plants such as cotton and flax, common in the graves of the area of Meroe, were absent.

The Christian graves included burials dated to 1100 A.D., as well as at least one belonging to a very late phase (1520 A.D., both dates calibrated; Caneva 1988:28). Both types contained extended burials, often wrapped in woolen mantles and lacking any other object. A microscopic analysis of the textiles revealed that the only fibre used was from goat/sheep hair. Both camel hair and cotton or flax fibres were absent, supporting the hypothesis that this community had a dominant pastoral character.

A number of Muslim graves were identified, although not excavated. They belong to different phases, differing in the way the burial pit is covered, either with clay or with wooden roofing, or just filled up. The orientation is always south-north and the pit extremely narrow.

**Excavations at Saggai (1979)**

In 1977, due to the fortuitous finding of a human mandibula on the surface of another site in the concession area, the Mission was requested to survey the place and carry on the salvage excavations if necessary. The 1979 and following campaigns were then devoted to the excavation of one of the sites of the area, 38 km north of Khartoum, which was called Saggai 1 (Caneva 1983:4). The site was discovered to be almost undisturbed, except for the modern exploitation of the entire area to collect gravel and other material for building.

The most surprising result of the first sondage at Saggai was the depth of the archaeological deposits, up to one metre and more (Caneva 1983: ). The deposits were found to originate from both human and natural accumulation, the latter deriving mainly from combined Nile-wadi overflooding. It was stated that the Nile had quite an impetuous course corresponding to the wet climatic
phase of the 8th millennium, changing bed and often reworking, on the lateral banks, the materials brought down by the wadi (Caneva et al. 1986; Marcolongo 1983). A certain stability of settlement, in spite of this apparent environmental instability, is attested by the archaeological materials. The concepts of both stability and instability need quite an elastic definition in this scenario, in that exceptional floods may have occurred once in a generation and people may have moved away and come back the following season. Elements suggesting settlement stability are mainly in the depth of the deposits, the amount, good conservation and homogeneity of the archaeological materials, including heavy large sized pots and querns. Animal bones were extremely abundant and very well preserved, which only occurs when they are rapidly and continuously buried by human occupation. The frequency of burials (contracted skeletons with no offerings, except for bivalve shells placed to cover the ears) also supports the argument, as well as the absence of contemporary sites inland, except for the areas with similar environment, such as the wadis (like the site of el Kenger West, in the same region) or other water ponds (like the site of Shaqadud, further north). The four C14 dates obtained from different levels of the deposits at Saggai range between 7500 and 7100 BP (7410+/-100, 7320+/-110, 7250+/-110, 7230+/-100, uncablibrated: Caneva 1988:28), suggesting a certain chronological development of the site. The same is suggested by the analysis of the archaeological materials, collected from artificial layers. However, no gramatic stratigraphical breaks were observed during the excavation. Only one of the sondages revealed a clear cut surface which was interpreted as a phase of abandonment of the settlement. Now, however, we tend rather to consider this surface as a preparation for a burial tumulus of historical age, the burial pit being as yet unexcavated and the tumulus largely deflated. Such a situation, which has still to be checked at Saggai, was discovered to be a common feature in this area, and was systematically checked in other sites of the region during the last campaign, in 1989 (see below).

The economic activities of the groups inhabiting Saggai largely included fishing and hunting. Two kinds of antelopes (kob and oribi) account for 80% of the mammals. Their frequency, in contrast with the later sites, suggests developed hunting activities, especially in moments of particular game concentration, for instance during the dry season, when the river was probably a point of attraction for animals and men. Molluscs were also collected, especially
pila shells, of which a great amount is still found in the deposits. While no vegetal elements have been preserved in the deposits, we may suppose that a consistent vegetal cover was supported by the extensive drainage pattern of the area and that certain kinds of plants were collected and processed through grinding and boiling. The hypothesis of broad spectrum dietary conditions is also supported by the high strontium content of the human bones from Saggai. Strontium is abundant in plants and molluscs and almost lacking in meat. It therefore indicates, here dietary practices which include a relatively high percentage of mollusc and vegetable food.

The archaeological materials from Saggai fit quite well in the Early Khartoum Mesolithic definition. The ceramic assemblage shows large globular pots, with unburnished surface, completely decorated with incised (wavy line) or impressed (mainly rockerwise) motifs. Wavy line patterns are more frequent at the base levels than in the upper levels and, in any case, more than at the contemporary sites so far known, such as Khartoum and Sorourab 1. The lithic industry includes mainly microlithic quartz implements, with a high percentage of lunates, notches and denticulates. Big sized querns and a great amount of pestles and grinding stones were found. Bone implements, such as harpoons and awls, are not frequent. All these features point to an early chronological attribution of the assemblage, confirmed by the radiocarbon dating.

Excavations at el Kenger (1984)

An occasion to fill up the gap left in our research between the Neolithic and the Meroitic evidence was offered by a salvage excavation carried out on a threatened site in the concession area. The site, already surveyed by the Sudan Antiquities Service - French Unit, was thought to be the first Late Neolithic settlement site discovered in the Khartoum region, where only scattered funerary evidence of the so-called Omdurman bridge culture had been found. The excavations at el Kenger (5) revealed that more than one site occupied the area and that each of them belonged to a different culture. The three sites discovered were aligned on the northern bank of Wadi el Kenger, about 40 km from Khartoum and 8 km from the Nile. They were labelled "East", "Middle" and "West", according to their position in relation to the Nile. The area had been seriously damaged by the systematic activity of a gravel quarry.
El Kenger West was not damaged. Only one sondage was carried out there, revealing a very eroded Mesolithic wavy line site. The materials were few, mixed with coarse red gravel and appeared to be water rolled. The deposits were very thin and faunal remains almost absent. It is possible that the materials were not in situ, but somewhat reworked by the wadi. No date was obtained for this site.

El Kenger Middle, about 600 m east of the first site, had been very much damaged by the quarry, but parts with undisturbed deposits were still preserved. The deposits were thin (35 cm) and not stratified. The pottery was decorated mainly with the techniques of incision and impression with double progoned implements (alternately pivoting stamp). The lithic industry was limited to a few varieties of microlithic implements, especially borers. This site had two radiocarbon determinations to 5080+/−70 BP (Reinold, Lenoble 1986) and 5620+/−80 (Caneva 1988:28).

El Kenger East, further east into the desert, was almost completely destroyed. The undisturbed parts of the site, all around the area dug by the bulldozer, showed very thin deposits (20 cm) which may have been slightly thicker in the middle of the settlement. Archaeological materials included few lithic implements and potshereds. The latter were decorated with rocker stamp/evenly serrated edge and simple impression techniques. Although the decorative motifs of the pottery from these two sites were very similar, both including parallel lines of dots, the decorative techniques used at el Kenger Middle were not found at el Kenger East and vice versa. In this case, therefore, the advantage of using a typology based on techniques rather than on motifs, such as the one we have proposed since the beginning for this area (Caneva 1983, 1987, 1988 and in press) was quite clear. El Kenger East was radiocarbon dated to 5290+/−80 (Caneva 1988:28).

Given the interval between the two dates for El Kenger Middle, it is impossible to make any sequencing between these sites. Their similarities (production of burnished pottery, with the same petrographical composition; use of domestic animals; small thickness of the deposits; "lightness" of the lithic equipment, lacking groundstones) compared to their differences (use of different techniques in pottery decoration) would suggest to consider them as belonging to different, more or less contemporary, groups, rather than to groups of different ages. The contemporary existence of different groups sharing the
same territory would support the assumptions on the nomadic character of these pastoral communities, already proposed on the basis of the archaeological evidence common to all such sites: thin deposits, light equipment, bad conservation of bones, all elements pointing to a short-term occupation.

**Survey between Geili and Kabbashi (1985)**

At this stage of the research, it was clear that a good strategy of regional study should have included the analysis of the distribution of the collected environmental and archaeological evidence on the territory.

The rescue excavations at el Kenger in 1984 and the analysis and publication of the main results of the previous work at Geili and Saggai, had provided new general information which could be summarized as follows:

a) The gravel terrace now bordering the flood plain, called 'qala'a" by the local people, was a former river bank, rather permanently occupied by Mesolithic hunter-fishermen groups around 7800-6100 BP.

b) The Mesolithic cultural equipment at Saggai was different from that already known at Khartoum (Arkell 1949) and Sorourab (Mohammed Ali 1982), Suggesting a plurality of either chronological or cultural facies in the long Mesolithic development.

c) The Neolithic settlement in the alluvium (Geili) was not riverine.

d) Consequently, it was to be assumed that the shift of the river bed to the westernmost edge of the flood plain had already been accomplished in Neolithic times. No evidence exists of sharp climatic deterioration in this interval.

e) The radiocarbon dates from the Neolithic sites of the Khartoum region were very consistently grouped in a very short interval and the Neolithic cultural equipment was found to be almost identical in all of them, suggesting a single facies.

f) Late Neolithic aspects were discovered on the surface of all the sites
investigated (in form of burials), suggesting a diffuse occupation of the entire region at the beginning of the 3rd mill.

g) The only Late Neolithic settlement sites so far known, at Wadi el Kenger, had shown that the Late Neolithic sites could be interpreted as short-term, not riverine, probably pastoral sites (Caneva 1986).

h) an analogous form of land occupation seemed to be inferred for the Meroitic and Christian periods, as suggested also by the analysis of the human bone chemistry (palmieri 1983).

i) The analysis of the human bone chemistry in the Geili/Saggai population had revealed that the basic meat/fish/mollusc diet of the Mesolithic people gradually developed in blood/milk/meat diet in Late Neolithic/Meroitic/Christian times, with no evidence of agricultural practices.

A tentative chronological sequence of cultural aspects, geological/climatic phenomena and economic adaptive strategies was sketched on the basis of this information (Caneva 1985). The sequence included, in short, three phases:

1) A humid phase following the last Hypothermal (12,000 BP). The river and wadis were very active, transporting and depositing materials on the banks, forming a ridge of natural levees along the edge of the flood plain. The banks were inhabited by people with broad spectrum subsistence adaptation, exploiting seasonally differentiated resources, thus minimizing the need for mobility. This situation is assumed to have lasted for several millennia.

2) A less humid, brief phase, around 6,000 BP. The river flowed regularly only in its westernmost channel. The limits of the flood plain were not well defined and all the alluvial plain was inhabited by people who still depended partially on aquatic resources, but relied mainly on animal breeding and, therefore, on good pasture lands, thus requiring a certain mobility.

3) An increasingly dry phase, starting around 5,000 BP and probably lasting
several millennia. An increasingly mobile land occupation characterizes the region: pastoral people followed the pastures, probably settled only for short seasons by the river or the big wadis, still relying on the Nile for their water supply but no longer for riverine resources. The economy was highly specialized, requiring great mobility in that specific environment.

To support this series of hypotheses with additional data, a more consistent survey was begun in 1985 (Caneva 1986). The basic aim was to reconstruct the distribution and frequency of the prehistoric sites in the reviewed cultural/chronological sequence and geological/climatic environment.

The area submitted to the analysis was the concession of the Italian Mission, between the villages of Kabbashi and Geili. Its total extent is 15x7 km. A brief reconnaissance was also undertaken a few km south and east of this area, where no archaeological evidence was found, except for scattered tumuli of historical age.

The area included all the geomorphological features characteristic of the region: the visibility of archaeological remains therefore varies considerably in the different parts of the area, requiring consistently different survey methods. The strip of Nile alluvium was unsystematically explored on foot, in an effort to determine the possibility of finding archaeological evidence in the bushes and between the houses, in the cultivated fields, under the alluvial deposits. We were informed that during the 1984 flooding more than 20 cm of silt had been deposited, and subsequently redistributed by bulldozer! The results were therefore frustrating, as was to be expected. Even a known Early Neolithic site, located right on the bank of the Nile, close to the small village of el Ansar, which had previously been visited by officers of the Sudan Antiquities Service (Dr. Mohammed Basha, pers. comm.), was no longer found in the survey.

The terrace was easier: there was optimal visibility and minimal modern disturbance except for the construction of earth tumuli with archaeological debris in late/post-Meroitic times.

A total of 25 prehistoric sites were localized in the region during the survey, including the five already excavated by the Italian Mission: Geili, Saggai, el Kenger East, West and Middle. Another two sites, however, must be added to the
list: the Early Neolithic site of el Ansar, which is known to exist even if it is now
buried under the Nile silt, and a second Mesolithic site at Kabbashi, revealed
later, during the excavation. The majority (22) pertain to a broadly defined
Mesolithic horizon. Three sites, Geili, Tamanyat and el Ansar, are classified as
Early Neolithic, while only two, el Keneg Middle and East, probably belong to
a Late Neolithic aspect. A great amount of possibly non prehistoric evidence
(tumuli) was also recorded.

Morphologically speaking, the sites are similar: they either lie on the gravel
terrace bordering the ancient course of the Nile or on the rocky outcrops
overlooking the largest wadis. The deposits are always coarse, made up of
mixed wadi/Nile/archaeological debris. Almost all the sites appear to have been
strongly modified by post- or Late Meroitic tumuli made by heaping up the
ancient occupation debris. Several soundings made at Kabbashi have revealed
that the portion of prehistoric site covered with the earth tumulus was still
intact underneath, except for the limited extent of the burial pit. Compared with
the Geili situation, where not one but dozens of Meroitic, Christian and Muslim
burials have been dug into the site, the sites which were through to have been
destroyed by the tumuli appear, on the contrary, to be the best preserved,
protected from any disturbance for the past sixteen centuries. Conversely,
nothing is left between the tumuli.

Excavations at Kabbashi (1986)
The 1985 survey revealed that a particular kind of dotted wavy line pottery,
with coarse reddish ware, decorated with big combs, was present on the surface
of a number of sites, especially at Kabbashi. The site had been radiocarbon
dated to 6150+/−80 (Caneva 1988:28), the lowest date so far obtained for a
Mesolithic context in this area. The site, as was recorded during the first
localization, consisted in an extensive tumuli field of historical age, set up on an
area which included an impressive amount of prehistoric debris. Three of the
tumuli, located respectively at the eastern and western edge and in the middle of
the field, were investigated.

The three earth mounds were dismantled and revealed different original
settings. The easternmost mound, the furthest from the river (tumulus C), was
built over the natural surface of the gravel terrace, the two others over two
different prehistoric sites:

tumulus B, almost in the middle of the field, was built over a wavy line Mesolithic site which provided the same fine grey ware as Saggai. Remnants of the living floors scattered with animal bones and grinding stones were discovered below the ancient surface, which was easily identified. A Mesolithic burial was also discovered, barely grazed by the tumulus burial pit. The assemblage is typologically dated to the end of the 8th mill. BP.

- tumulus A, at the westernmost edge of the field, closer to the river, was built over a pure dotted wavy line Mesolithic site, which was radiocarbon dated to the end of the 7th mill. BP (Caneva 1988). As expected, the prehistoric debris was still in situ, underneath the ancient perimeter of the tumulus, where as in the surrounding area it had been removed down to the sterile gravel when the mound was built. Only traces of the Mesolithic deposits were found embedded in the sterile soil outside the perimeter of the tumulus. These traces are now covered by loose materials, which have rolled down the slopes of the mound. The real prehistoric site, in tumulus A, consisted of 45 cm deep deposits, rich in pottery, lithics and faunal remains. A living surface was also discovered. The lithic industry included a small number of lunates and abundant grinding stones. Faunal remains have not been examined yet. They seem to include abundant fish bones, molluscs and big herbivores, like those found at Saggai. A great amount of pottery was found. The ware is reddish-yellow, with rough lithic temper. Vessels are globular, with pointed bottoms, and are made with the coiling technique. Most of the potsherds are decorated with impressed patterns, obtained exclusively with the rocker technique. plain wavy line decoration is absent. The most frequent design is the alternating of straight with wavy bands, but designs with several bands of the same type also occur.

The same range of motifs, obtained with the same techniques, has been found in many sites in the Sahara, dating to 9000-8000 BP. Dotted wavy line pottery has been found almost everywhere in the Sudan, but usually mixed with wavy line pottery, even where a kind of superposition of levels characterized by the two pottery decorations was hypothesized, as at el Qoz (Arkell 1953). Only recently was dotted wavy line pottery found in pure contexts, lacking wavy line motifs, at Aneibis, in the Atbara region (Haaland 1986), at Shaqadud, near Shendi (Mohammed Ali, pers. comm.), and at Kabbashi. It is now clear that
wavy line and dotted wavy line pottery characterized respectively two distinct aspects of the prehistory of north Africa.

Additional sondages, made between tumulus A and B in 1989, provided a stratigraphical superimposition of wavy line and dotted wavy line assemblages and thus revealed that the two sites partially over lapped.

The analogies between the so-called "wavy line" and the "dotted wavy line" contexts are apparently impressive: the same environment selected for settlements; the same subsistence basis, largely relying on aquatic resources; the same amount of archaeological materials, especially grinding stones; the presence of burials below the archaeological deposits; the same suggestions of settled life. These analogies, together with several common features of the lithics and pottery, suggest a substantial continuity between the two assemblages.

Pottery decoration is the only remarkable difference. This distinction, which traditionally suffered from a lack of attention (Arkell defines dotted wavy line pottery "a variety of the ordinary wavy line", 1949:84; Sutton uses the 2 types together to reconstruct an area of common cultural ground in north Africa, 1977:Fig.1; Phillipson quotes them together as occurring all over the Sahara and the Nile Valley, 1985:106; etc.), has to be considered a fundamental cultural element: as a matter of fact, wavy line pottery does not occur in the Sahara, whereas dotted wavy-line pottery characterizes the Mesolithic there as from the 9th millennium BP. In the Sudan, the wavy-line contexts are dated to about 8500-7500 BP, the dotted wavy line around 6000 BP. This means that the Nile Valley and the Sahara shared common cultural traits only at the end of the 7th mill. The appearence of the dotted wavy line ware in the Nile Valley, therefore, does not seem to be a natural evolution from the wavy line, but seems to follow a saharan cultural expansion, still associated with a hunter-gatherer economy.

Survey Between Geili and Kabbashi (1989)

A number of problems was raised during the survey made in 1985 and with the excavation at Kabbashi, concerning site dimension and attribution from surface observations. It appeared that the tumuli fields might have included several original settlements, mixing their materials and obviously altering the extent and aspect of their surfaces. This was the case at Kabbashi, which was
first considered a "dotted wavy line" site, and only after a series of soundings 
was it discovered to include at least two Mesolithic sites, only one of which 
contained dotted wavy line pottery (Caneva 1987 b.)

Another problem was related to the artefact density with which to define a 
site. In the recent archaeological debate on survey design and tactics, isolated 
artefacts and low density scatters began to be included as significant regional 
information (Shiffer et.al. 1978). In our case, prehistoric remains were found 
almost everywhere, scattered on the surface of the surveyed area. They might 
have been either transported from elsewhere by human or natural agents, or 
have come from the deposits underneath, or belong to a superficial occupation 
of the land by highly mobile groups, but this can only be detected after the 
evacuation of the deposits and the analysis of the material.

All these considerations led to a different strategy of survey, integrated with 
sondages, which was carried out during the 1989 campaign in part of the area 
surveyed in 1985. 30 test pits were dug into burial tumuli of 5 of the sites 
located in the area. The trenches were always inside the perimeter of the 
tumulus, far from the center, to be sure to find an untouched stratigraphy. In 
spite of these cautions, a number of burials were discovered in the trenches: a 
very deep and narrow Christian grave, dug into sterile deposits; a Late Meroitic 
burial similar to that found below tumulus A at Kabbashi; a muslim grave dug 
into the Meroitic tumulus. The results were the following:

a) it was confirmed that subsurface deposits did not always correspond to 
surface materials, and vice versa, due to the artificial replacement of soil 
when the tumuli were built. These were built on the gravel terrace, 
regardless of the presence / absence of ancient deposits, which means that 
sterile deposits may occur below tumuli where artifacts were found.
b) the size of the prehistoric sites was considerably smaller than that of the 
tumuli fields, which usually extended further into the desert.
c) the sites do not seem to have continuously covered the bank of the nile, 
but were separated by an unoccupied land, scattered with few 
archeological materials.
d) wavy line sites were located further from the river than dotted wavy line 
sites.
e) the chronological sequence of wavy line - dotted wavy line sites was once
more confirmed by one case of overlapping, at Kabbashi.

f) the same kind of tumulus was used for both Late Meroitic and Christian graves, as was already suggested by Lenoble (1987).

Muslim graves were also dug into these tumuli.

g) the prehistoric deposits were mound-shaped, with a greater depth in the centre, sloping down towards the periphery.

h) the wavy line sites had the greatest depth: 1.60m.

The material from the test excavation was only preliminarily analysed on the field, but it seems to fit easily into the general characteristics of the prehistoric cultures of the region.

This kind of Survey has proved to be the only reliable research strategy in this environment and will be continued in the future.

Conclusion

The archaeological activities carried out in these past two decades in the Sudan provided three different ranges of contributions: 1) salvage and preservation of monuments and materials, 2) development of new research strategies, and 3) reconstruction of the past. The activities of the Italian Mission were not directly involved in the first kind of problems, but focused on the two others.

As for the research strategies and methodology, the contribution of the Italian Mission involved both field research and laboratory analysis. A number of very peculiar indications both for survey and excavation purposes was collected. Of these, the discovery that the burial tumuli built over the prehistoric debris had destroyed part of the deposits but had guaranteed the best protection to the other part seemed particularly useful. The future strategy for a prehistoric research, in fact, will not be to excavate around the tumuli, where nothing is left of the ancient deposits, but to dismantle the tumulus itself, locate the burial pits, and then excavate the ancient deposits in their preserved stratigraphy.

Research strategy also involved the analysis of archaeological materials and
the development of methodologies and typologies. New methods for the chemical analysis of ceramics and human bones were experimented, and a new system of classification of pottery decoration, based on a tree-type arrangement of the elements analysed, was proposed.

As for the scientific problems and the reconstruction of the past, the new series of C14 dates obtained in the Khartoum region from the area surveyed in 1985 (Caneva 1988:28) provide a good framework for seven mill history of the region. Combined with those obtained recently from Shaqadud and Sorourab, now quite a reliable chronological sequence is available for the Mesolithic of the central Nile Valley, which seems to be paralleled also in the Atbara province, although with slightly earlier dates (Haaland 1987). The chronological gap which seemed to separate the Khartoum Mesolithic from the Shaheinab Neolithic is now consistently filled by the dotted wavy line cultures of the 7th mill. These regions, therefore, seem to have been inhabited by hunter-fishermen producing "wavy line" pottery during the 9th-8th mill. B.P.; by similar hunter-fishermen producing "dotted wavy line" pottery during the 7th mill. B.P.; and by pastoral people producing mainly burnished pottery with various decorative patterns during the 6th mill. B.P. The greatest change between these three groups was traditionally believed to have taken place at the beginning of the 6th mill. B.P., when the subsistence basis shifted from hunting to herding and pottery burnishing was introduced. However, it is now clear that new Mesolithic cultures, strictly connected with the Saharan contemporary cultures, developed in the Sudan during the 7th mill. B.P., replacing the old traditions, at least as far as pottery is concerned (Caneva, in press; Caneva, Marks, in press) and probably introducing the first elements of economic change. They are characterized by the dotted wavy line pottery and are related to the earlier culture with wavy line pottery in so far as they are found in the same environments and are based on the same economic activities. Traditionally, these Nilo-Saharan contacts, which are now both charonologically and archaeologically more clearly defined, were thought to have proceede and accompanied the diffusion of the domestic animals and the pastoral economy in the Sudanese regions. The Saharan expansion, however, is now dated only slightly before the earliest evidence of animal domestication in Africa, and so far it has not been explained with any ecological or climatic constraint. During the followidng periods, both the Sudan and the Sahara show independent cultural developments associated with the full adoption of a food producing
economy in form of animal breeding. Saharan cultural elements apparently survive in some areas, such as the Shendi province. Here the sites of (Geus) and Shaqadud (Marks) show several ceramic features of Saharan origin (Caneva, Marks, in press). These features were not found in the Khartoum province, where the motifs dominating the panorama of pottery decoration are of a kind which is totally absent from the Saharan ceramic assemblages and very rare at Shaqadud.

Food production in this area was characterized by animal breeding rather than plant cultivation. This is suggested not only by the absence of domestic plants in the archaeological debris, but also by the basic alimentary habits reconstructed through the examination of both the anthropological features (structure of the skull, microwear on the teeth, etc., cf. Coppa, Macchiarelli 1983; coppa 1988), the pathology of the bones (cribra orbitalia, caries, etc., cf Coppa 1988) and the bone chemistry (rate of diagnostic elements, such as Strontium; cf. Palmieri 1983; Coppa, Palmieri 1988). The results point to a progressive detachment from fish and meat, in favour of a less rich diet, probably consisting of milk and blood and lacking cereals, or at any rate having them in minor quantity. Traces of nutritional stresses were absent in Mesolithic populations, but were often observed on Meroitic and Christian skeletons (Coppa, Palmieri 1988).

The debate on the beginning of food-producing cultures in these areas, both in terms of chronology and of pressures towards the economic change, is still open. The data provided by our research are not conclusive in this respect. However, no evidence was found of a dramatic natural pressure, such as climatic/ecological change, or population growth. Geomorphological investigations, sedimentology, pollen analysis, applied to a natural section representing the chronological interval between the Khartoum Mesolithic and the Shaheinab Neolithic, pointed to a very gradual environmental degradation and shift of the river bed. Population size is hard to assess from the archaeological evidence, but the ratio Mesolithic: Neolithic sites in our concession area was 22:3, which would point to a drop rather than to an increase in population density.

The detachment from aquatic resources, suggested by the reconstructed diet and by the decreasing amount of fish bones and shells in the debris, is
confirmed by the changes in settlement pattern. The Mesolithic permanent settlements in riverine environments seem to be gradually abandoned in favour of short-term camps, either in the flood plain or in the savanna. The shorter the occupation, the thinner the deposits and the less substantial the archaeological documents: burials are the only "occupation" evidence for Nubian and Christian people in this region. The phenomenon already starts with the Late Neolithic groups, who are certainly better known through their cemeteries than through their settlement sites all over the Nile Valley. Chemical/petrological analysis of pottery composition reflects the different settlement pattern of the three prehistoric groups: Mesolithic and Early Neolithic ceramic assemblages, although different from each other, resulted in two groups with very homogeneous composition, being produced with the locally available clay, which contained more or less sand, depending on whether the sites were located on the terrace (Mesolithic) or in the flood plain (Neolithic); conversely, Late Neolithic assemblages included various kinds of pottery composition, probably related to the various locations of their camps (Francaviglia, Palmieri 1983; 1988).

The proposed shift from settled hunter-gatherers to nomadic pastoralists is now supported by a number of consistent data collected from different disciplines, and seems to form quite a reliable frame in which all the archaeological evidence so far studied can easily be placed. An additional, a posteriori, support to this reconstruction may be seen in the very consistent pastoral cultural model which characterizes this area throughout its later history. This is apparent now from the data obtained in the region for the Merotic and Christian periods, as well as from the documents on the modern history of the Sudan.

This tentative reconstruction of the history of the region is limited to the Nile Valley, as little is yet known of the desert hinterland. The presence of sites like Shaqadud, more closely linked to the Sahara than to the Nile, suggests that a more complex situation of territorial subdivision and cultural contacts has yet to be discovered, involving groups integrated in a greater ecological, social and cultural system.
Notes

(1) The Mission is supported by annual grants from the University of Rome "La Sapienza", the National Research Council and the Ministry of Foreign Affairs. A special contribution was given by the M. Schiff giorgini foundation for the excavation at Kabbashi, in 1986. The Mission was directed by Prof. Salvatore M. Puglisi until 1984, and later by Isabella Caneva. Members of the Mission were, throughout the years, B. E. Barich, C. M. Burri, I. Caneva, E. Garcea, A. B. M. Kilani, M. Silvestrini, A. Zarattini, archaeologists; M. Arioti, B. Casciarri, ethnologists; B. Marcolongo, M. Mascellani, A. M. Palmieri, R. Raikes, geologists; A. Coppa, R. Macchiarelli, Physical anthropologists; A. Gautier, archeozoologist; R. Caciagli L. Crescenzi, L. Narisi, C. Placidi, D. Terzi, V. Torrieri, draftmen; F. Bassano, R. Capanna, C. Frascatore, V. Giannetti, B. Polia, Photographers; A. M. Graziani, restorer. Sayed Ohman Suleiman, Salah Omar es Sadiq, Hassan bandi, Abd el Hadi M. Fadul, El Tayeb Khalifa, Salah M. Ahmed, Abdallah Idris, Mohammed Taha, Mahmoud, Bushra Abderrahman, collaborated as Antiquities officers. The Mission is deeply indebted to the Sudan Antiquities Service, particularly to its directors Najm ed Din M. Sherif and Usama Abd el Rahman El Nur, for their generous collaboration.


(3) Data were extrapolated from the tables published in Haaland (1987) and Chlodnicki (1984).


(6) Excavations at Kabbashi started in 1986 and were supported by additional funds by the Shiff Giorgini Foundation (cf. Caneva 1987 b.)
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Table 1. Organization of the prehistoric impressed pottery decoration of the Nile Valley

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Table 1 (continued)... Organization of the prehistoric impressed pottery decoration of the Nile Valley

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REPORT ON THE 1991 CAMPAIGN OF EXCAVATIONS
by Prof. Isabella Caneva

The 1991 campaign of excavation of the Italian mission for prehistoric Researches in the Sudan was carried out from October 28th to December 20th, under the direction of Isabella Caneva.

The purposes of this campaign required a team of scientific and technical experts larger than usual. This included the following members:
Prof. Irene Liverani, meroitic archaeologist
Dr. Elena Garcea, Prehistorian
Dr. Rita Vargiu, physical anthropologist
Dr. Domenico Mancinelli, physical anthropologist
Mr. Renato Caciagli, topographer
Mr. Marco Caciagli, draftsman
Ms. Francesca Mancini, photographer
Ms. Silvia Bonamore, restorer

The Sudan Antiquities Service was represented by Mr. Abdelhai Abdelsawi Fedlemula, who provided his most appreciated assistance and cooperation in both field interventions and general organisation. Another member of the Sudan Antiquities Service, Mr. Ismail Hamed, joined the Mission for a part of the campaign and his cooperation in the restoration of archaeological materials was deeply appreciated.

The palaeobotanical analysis of prehistoric pottery was carried on in collaboration with the Department of Archaeology of the University of Khartoum, with Dr. Anwar el Magid.

This year the scientific program included the resumption of the previous excavations at el Geili, a site already excavated during the 1970's, where the reflections made for the final publication in 1988 had deeply stimulated the request for further researches. This was especially felt with regards to the analysis of human bones, which needed to be applied to a larger population sample for the different periods represented in the cemetery. Moreover, the typological study of the grave shafts and goods could be improved through
their characterisation on a more systematic level.

In addition, the prehistoric settlement pattern with mesolithic populations settled on the ancient river banks and neolithic groups less permanently scattered in the flood plain, which was recognised in the southern part of the concession area, had been only postulated for the Geili site and needed to be tested by extending the sondages to the gravel terrace, east of the Geili cemetery. The same held true for the meroitic tumuli bordering the ancient course of the Nile and had never been previously investigated at Geili.

In order to fulfill such requirements, the following field operations were carried out this year:

1. Systematic excavation of a large area of the Geili cemetery (a total of 268 square meters). 49 graves were discovered and documented, out of more than 55 excavated tombs. 10 of them belong to the Christian period, 20 to the meroitic one, 7 to the Neolithic and the rest of them still need laboratory identification.

The neolithic graves were, as expected, very superficial, often disturbed or mutilated by the digging of later pits. The skeletons were always in very bad conditions. Some concentrations of potshereds belonging to the same pot suggest that pottery had to be part of the goods in neolithic graves, but unfortunately no entire pot was found associated with the graves excavated this year. The only major find of this kind was a disk mace-head in a grave where also pieces of malachite were found.

Compared to the cemeteries of the same culture excavated at Kadero, el Ghaba and Kadada, the evidence from el Geili seems to document a less complex social organisation.

The same results previously known were obtained from the Christian graves.

The largest part of the graves excavated this year belongs to the meroitic occupation of the area. Many of these graves were disturbed by others belonging roughly to the same period. They seem to confirm the already proposed long meroitic occupation, which probably extends here from the
3rd century B.C. to the 3rd century A.D.

The shape of the grave shaft and the associated objects show some variations which should be interpreted either in chronological or social terms. One grave had the same shape and orientation of the Late Meroitic graves which are concentrated on the gravel terrace, covered by tumuli. No earth tumuli, however, seem to be present at Geili, where all the pits were dug from the present surface.

2. Test excavation of the Late Meroitic tumuli field, east of the Geili cemetery. One of the tumuli was completely dismantled and the grave excavated. The access to the grave was throughout a short ramp sloping from east to west down to the chamber. This had been originally closed with wooden posts plastered with sand. The same technique was used to cover the upper part of the grave, below the tumulus. The grave had been plundered but four complete pots were still in situ in the chamber (2 bowls and 2 jars) as well as a group of 24 iron arrowheads and an archer loose.

3. Excavation of 7 sondages in the gravel terrace, east of the Geili cemetery. The mesolithic deposit was still preserved only below the tumuli, as it resulted in four sondages. The depth of this deposit never exceeded 15 cms. Pottery and lithic industry belonging to the "wavy line" culture were collected in all of them. Three other test excavations were made to the east and to the west of the major mesolithic deposit in order to check its extension. These three sondages revealed the complete absence of archaeological deposit, suggesting the existence of a small site preserved by the few Late Meroitic tumuli placed at the western side of the modern village at 1.1 km from the Geili cemetery.

As a preliminary conclusion, a confirmation of most of the hypotheses advanced in the past years was obtained for most of the periods investigated. Further and more thorough analyses will be applied with special attention to organic matters (leather, skin, hair, textile) and particularly to human bones.

As usual, we would like to thank the Sudanese authorities and the Sudan Antiquities Service for the kind cooperation and continuous support of its staff.
EXCAVATION OF UNIVERSITY OF ROME AT NATACAMANI
PALACE (JEBEL BARKAL)
Sergio Dondoni

Preliminary Report
The activity of our Mission between February 28 and March 19, 1989 has mainly aimed at recovering a situation, both in the organization and in archaeology, which had been upset by the Nile flood of the past summer. The house of the Mission was literally dissolved in water, the equipment was completely lost, some findings which had remained in the house for restoration have been further damaged. The field of our last excavations, in the "Palace of Natakamani" has been only partially reached by the water of the flood and therefore stained with mud. But as a result of the dampness, the mudbricks and the porous local stone, and digging in the wet mud makes less evident the differences between the walls and their fillings.

The program we had for this season mainly intended to add some new element to the plan of the "Palace" in its NE area, which lies behind a secondary staircase leaning on the Eastern section of the Northern exterior wall. The result of this new inspection can easily be detected on the map, and is useful for a better insight into the structure of the building. But at this point of the research, we think it is time to profit by these new data in order to summarize a general situation, which has become sufficiently clear in most of its features, even if certainly new (and probably important) details may be added by future discoveries.

The building is characterized by its being placed on a platform which was higher ca 1.80m on the surrounding level of the ground. Such platform is what mainly subsists, the walls rising from it being totally destroyed, and recognizable only by their foundations. The platform is exactly square, with a side of 63m., and its outer containment walls was 2.50m. thick. It consisted of a mud brick structure, using bricks of 8/17/34 cm. and protecting its exterior by means of a surface of red bricks, these being coated with a very hard plaster of chalk and pebbles, and finally whitewashed (fig. 1).

At a regular distance of 2.20m on the wall appeared protuding elements of support with the measure of one brick and painted in blue, which seems anyhow
not to be conceived as reaching the top of it, if we take notice that in some instances they support a stone "mensola" of uncertain use at the height of 1.40m. from the ground (fig. 2).

At a wider distance from each other and beginning from the corners, decorative vertical elements are obtained by employing peculiar bricks with a round end. They formed three vertical rows, each of a different colour (red, blue, yellow on a white ground) and they give a certain rythmic scansion to the facade (fig. 3). We have observed that these decorative bands, about 1.10m. wide, do not form perfect rights angles with the ground, but they seem to converge towards the top, so that one may imagine a sort of trapezoid panel enclosed by them. It is difficult anyhow to be definite on this point, as it is also possible that some imperfection in the building technique gives false suggestion, the upper part of the walls being completely missing.

The different level of the building in comparison with the outside ground had as a result that, when it came to destruction, the walls fell down filling the space all around the "Palace" with their ruins, but saving therefore the decoration which was set on their faces. This was found concealed under heaps of bricks, and normally reduced to fragments which could anyhow more than once be put together to get the original shape. We have mostly recovered elements of glazed terracotta, coloured in blue or green, brown or violet, yellow. The simplest ones were glazed square tiles of about 15cm side, which had only a chromatic value; (fig. 5), but for the greatest part, the decoration consisted in round plates containing each the representation of a human bust, many with grapes or crowns in their hands (fig. 6-14). Such plates are not perfectly uniform in size, but they have an average diameter of about 35cm. In one case, the "tondo" contained the representation of a goddess holding her hands on her breasts and ending in a snake (or crocodile ?) bottom (fig. 15). Another cherished decoration consisted in the representation of a sitting lion, grasping in its paws the lunar crescent (fig. 16).

All these decorations were crudely inserted in the mortar of the plaster when still fresh, and sometime they were partially covered by it. It is difficult to establish if they were put at a definite distance from each other, and if there was a criterium according to which they were set on the wall, too many of them having disappeared or being reduced to small fragments, and too much of the wall
having fallen out of its original position. A certain systematic structure must anyhow be admitted, if one looks at the regularity of the single elements employed.

The only side which has been completely dug from the sand is the Northern one, where the entrance was situated, and our conclusion about the wall decoration leans mostly on what we have observed here. We may surmise anyhow that also the other walls were similarly decorated with tiles, in consideration of the fact that we have found them (perhaps a little less numerous) in front of other sections of the exterior wall we have examined.

Almost at the center of the Northern wall a monumental system of access which consisted of a conspicuous staircase of (probably) 20 steps (only 7 partially preserved) developed on 9m. and 3.70m. wide, each step being 0.40m. and consisting originally of stone slabs (fig. 17). The staircase ended at its top in an almost square terrace, measuring 4.40m. in width and 4 in depth. One can not say how this part of the building was arranged, but certainly it was rather complex: just in the neighbourhood of the terrace, fallen down from it, there were two sandstone statue of sitting lions (a male and a female, bearing traces of yellow the one, of blue the other) and a certain number of column drums and capitals (fig. 19-21). A third statue of a lion has been identified, without having been recuperated yet; this leads to the conclusion that on the terrace two couples of lions and a column structure of unknown shape must be imagined.

At the bottom of the monumental terrace there was a gate, whose threshold and lintel are preserved at least partially and in fragments. The threshold does not consist of a single stone, but it is formed by an assemblage of heavy slabs; the lintel was monolithic, and the fragments to which now it is reduced show that it was decorated according to an Egyptian typology with winged sun disk (fig. 18). From the traces on the ground, we can calculate that the entrance was about 2m. wide but it is not possible to give any measurement about its height.

The space to which the entrance gave access is characterized by the presence of two rows of stone bases, three on each side (only three preserved) measuring 0.80m. by 0.80m. and 0.35m. high (fig. 22). We can only guess the diameter of the columns which stood here as the usual marks for their setting on the bass have disappeared everywhere. It may be interesting to observe that
these bases have singular foundations of red bricks.

The fact that the ground of this part of the building had a sort of concrete pavement shows that we are in presence of a court sided by two porches each 2.20m. wide. At the southern end of the western one the inscribed slab was found which gives the names of Natakamani’s wife and son, Amanitore and Arkkhror (fig. 23).

About the middle of the Eastern section of this Northern wall another small staircase of 3+ x brick steps has been built apparently at a later time, but the wall is so badly preserved at that point that we cannot tell how it was connected with the building: its shape (it is not perpendicular to the wall, in order to be as unobtrusive as possible) and its size (7.70m. by 1.80m.) show that we are here in presence of a serveice passage (fig. 24-25).

Before entering into a description of the building which was originally set on this platform, we must put in evidence that all its walls and other vertical elements have been at some moment systematically destroyed. We are therefore in presence of a wide surface in which we can detect the structure through which the platform has been kept solid, that means a set of walls, about 1.60 - 1.90m. thick, perpendicular to each other, forming empty rooms which have been filled with mud mixed with derbis-mostly fragmentary red bricks (fig. 26). This formed a basement strong enough to support the load of the building on it: but the whole has been apparently employed as a quarry for materials, mainly the mud for the bricks, this exploitation went to such a point that even in the foundations the walls have been dug out, in opposition to the filling which gave a poorer quality of mud, mixed with derbis as it was. It happens that often the walls are recognizable at first just because they have been dug deeper than the filling. When we take away the sand which has covered the structures, the general view of the site shows a rather savage series of holes, in which the general original plan must be patiently detected.

In the next area of the building there are three small rooms side by side on the same line. The central one shows traces of passage, and it was presumably employed to give access to the next space. Its importance is stressed by the fact that originally its mud brick walls were coated with a layer of a white plaster on which a much thinner leaf of gold was set.
This gilt passage, of which of course we have found only scanty traces, was leading to a more complex and important hall, where originally six other bases of columns show that it had a ceremonial character. The bases measure about 0.70m. by 0.70m. and are above the ground about 0.40m. On the upper face of three of them are scratched the circles to show how to settle the columns, while on two of the bases the bottom of the column is cut in the same block of stone, and some drums of them have been found measuring 0.70m. in diameter.

It must be mentioned that we have found here a certain amount of fragments of glazed tiles, some with reliefs (fig. 4) (no one complete) some being apparently employed in the floor, and one bearing on its back the image traced in graffito, before being fired, of a king probably spearing a foe, and probably being a sort phylakterion of the building (fig. 28-29).

The lack of a concrete floor and a certain amount of blocks showing an architectural function even if they are not easily connected with each other and with the general feature, show that this space was probably a roofed one: we must therefore imagine that it was a hall, to which one arrived through a gate, the columned court, the gild passage, being itself sumptously decorated with coloured tiles and possibly other ornaments (we have found -at some distance from here but of uncertain origin- a fragment of gild stone relief with the image of a winged goddess which could be imagined here) (fig. 41).

Just behind the "Reception Hall", as we have called it, appear the remains of the most conspicuous building of the complex: it was a structure built in local sandstone, a great deal of which has disappeared, but enough elements of which are still in plan for a general understanding of the original situation. A rectangular plan, oriented more or less E-W and measuring 10m. by 8m. was marked by foundation wall in red bricks, 0.80m. thick (fig. 30). On it originally stood a crown of columns, now disappeared, the diameter of which of 0.70m. can be determined measuring the diameter of those bottom whose is still a part of the stone block forming their base. These stone block, of 0.70m. by 0.70m. and 0.35m. height, are preserved for all the four sides, only one of them (on the W side) being missing. They still bear traces of the colour with which they were originally painted (alternately blue and yellow on red bases). Their disposition is such that on the E and W sides there is an uneven number of columns (5),
while on the N and S sides there is an even one (6). If the columns are no longer here, we have anyhow found some of their capitals, campaniform measuring 40cm. at their lower side, 78 cm. at their upper one.

Within this circle a second series of smaller columns were linked with each other by means of screen walls. This situation is still evident on the ground, as columns and walls of the southern half have fallen down altogether still showing their respective position (fig. 31). Their original height can still be calculated to be about 1.50m. and that of the columns, together with their campaniform capital to be about 5.50m. It is evident that on this wall there was no passage, and it is difficult to assume that something of this kind could be placed on the Eastern or Western sides, because of the uneven number of columns: this means that no central opening may be expected there. There only remains the possibility of an entrance from the North, coming from the "Reception Hall". We are therefore in presence of a very peculiar form of a kiosk, which consists in a sort of a peripteral room closed only by means of screen walls encircled by a corridor supported by columns of a bigger size, and being connected directly with the ceremonial part of the building. One could easily speculate about the possible structural and functional meaning of this part of the complex, but it is perhaps safer to let in doubt for the time being if it was a sort of Palace Sanctuary or the space reserved for an official appearance of the king to the visitors admitted to his presence, or something else.

It is curious to remark that the kiosk lies perfectly in the axis of the complex, being different in that from the other elements of this ceremonial series (gate, court, hall) which are a little displaced towards the West. That means at least the kiosk has been built as the first edifice on the platform (as it seems also obvious for practical building reasons).

Coming back to the "Reception Hall" we observe that on its Western wall, just at the middle of it, there was a passage the pavement of which of stone slabs was partially preserved (the only one till now all over the palace) which leads to what remains of an interior staircase (fig. 32). We have found some big slabs forming its steps and we have identified as such other slabs which had previously been found elsewhere. On the plan the staircase can be identified as such in a very narrow corridor, bent at right angle, in order to let the staircase develop its height in a small space.
If we can see which is the connection between the "Reception Hall" and the staircase, such is not the case for another important room, North of the hall and the kisok, but not on their axis. It is a rectangular room, measuring 8.60m. by 6.40m., in the middle of which a red brick foundation supports the bases of three columns (measures: 0.80m. x 0.80m.). One must imagine that the roof consisted of beams leaning on this central row of supports, the distance between the two N and S walls being too big to allow a unique cover (fig. 33).

At the moment of the discovery the floor of the room was full of ashes and containing a great number of fireplaces. We thought at first that here the kitchen have been placed, but this supposition could easily be excluded as we saw that an architectural element, fallen down from the building, was under the ashes. From this region we have recovered some bronze fragments, and particularly a handle of some table implement with a silenus head (fig. 38). The use of this room remains unknown for the moment, and we may guess that it had a function in the organization of the life of the Palace.

Such hypothesis is based on the observation that just near the hall two small rooms are not filled with the usual mixture of mud and derbis but their walls are roughly plastered with mud and it seems that what was no longer in use was thrown there. Broken pots, remains of blue and yellow pigment employed to paint the walls, bronze fragments of implements no longer in use and so on have been found here and we must say that for what concerns small finds it is here that we have recovered the most interesting pieces: bronze plates from some inlays in wood (fig. 34-35-36), a censer adorned with human heads (or better masks) (fig. 37), a granite basin (fig. 39-40), an ostrich egg and so on. But what was more often thrown in these room were the "cretulae" (fig. 42) deriving from the regular breaking of seals of different types employed to warrant any sort of lock of container. A beautiful series of marks have been collected and they can be usefully studied; they also give evidence of the presence in their neighbourhood, of an office where they were regularly broken and where, probably, rations were distributed, as it shown by the presence of a large quantity of small balls of different colours and sizes, which seem to have been used as token. We must also mention the presence here, under the foundations, of a heap of rough clay moulds for bread, similar to those used in Egypt (fig. 43).
These recognizable elements of the plan leave a great of it still uncharacterized. What remains of built walls can be considered as foundations for actual buildings or as elements of stability of the platform. It is worth observing that from what has been dug till now it appears that a remarkable unity of conception, repeating definite measures and putting analogous structures in analogous positions, is at the bases of this architecture. It is evident that the building has been carefully planned in advance, by competent technicians.

This short report aims at giving a summarized but definite idea of our work till now, in a monument which still maintains a remarkable importance notwithstanding its almost complete destruction. We still have a large part of it to uncover from the sand, and we hope that in the future years the cooperation between our University and the Sudanese Antiquities Services may continue to obtain the good results it has achieved till now.
1. Exterior wall of the Platform.

Decorative glazed tiles from the walls.
17 The main staircase.

Fallen sandstone status of lions near the main staircase.
22. Pillared entrance of the Palace.

23. The Meroitic Stela.
The kisok.

Bronze handle with a silenus head.
"Cretulae"
A DISCHARGE OF CLAY SEALINGS FROM THE NATKAMANI PALACE
by Irene Vincentelli - Roma-Cosenza

A large rectangular room, with coarsely mud-plastered walls about 3.20 x 1.20m. in size, was found in the western sector of the "palace of Natakamani" at Jebel Barkal. The room goes down about 1.10m. Under the elevation of the surrounding floors - as is the case also of other rooms at the intersection of the containment walls of the large terrace upon which the palace was built. (Fig.1).

The room was filled with crushed sandstone, probably waste products (some fragments have some traces of shaping). On the top of this mound, a compacted layer of the same material constituted the floor of a room of the same size as the space below: on this floor the northern wall of the room partly collapsed when the palace crumbled down.

At a distance of 2.10m. from the eastern wall, the fill seems to have been taken away, in order to make place to a series of very compact clayish flows. This part of the room, including the western wall, has been upset by a large pit probably dug in search of material for brick making, once the palace had been abandoned. This pit, while seriously damaging the western wall, has left the clayish flows almost untouched - since they were of no interest for people looking for construction clay.

The mud flows covered a stratified discharge of clay sealings, which, sloping westwards, seem to point out that the materials had been thrown from the center of the room (exactly where the stone fill was interrupted), and formed a mound thinning down, toward its western end.

Three layers of this mound, each of them about 10 to 15cm. deep -at least in the beginning, can be identified, but no basic differences have been noticed inside the stratification, pointing to a typological or chronological sequence. A layer of mud-bricks, disorderly placed and mixed with large fragments of shaped sandstone, as found under the layers of sealings.

It seems therefore that the administrative material (i.e. the clay sealings) was discharged, once obsolete, inside the palace itself, and here stored for a while in a stratified accumulation.

The sealings had been thrown mixed with a very granular sand, which helped in keeping them well separated one from the other and has helped their good conservation. The three layers were separated by flows of a clay quite similar to that of the sealings themselves, and compacted enough to be lifted as a crust, sometimes embedding fragments of sealings where the layer of sand had not been sufficient to isolate them). The clayish layers have also protected the sealings from the infiltrations of dampness resulting from the albeit rare rainfall.

Mixed to the sealings there were some potsherds of unusual ware and notable fineness, some fragments of clay lamps, some white and red little balls, a bronze signet-ring with an engraving unfortunately too damaged to be understandable, some fragments of bronze wire, and charcoal remains.

As for the pottery, the rounded jar-lids are frequent: some of them (9) are complete, others fragmentary; some are carefully finished, others are more coarsely obtained by shaping (and so re-using) fragments of pots; all of them belong to the Burnished Utility Ware, about 8-10 cm. in diameter, and about 0.5-0.8 cm. thick.

The neck of an Egyptian jar, with handle and part of the shoulder, has been found with its own lid still sealed with gypsum. Lastly, a fragmentary jar cover has been found, of imported red ware with an engraved decoration: a series of nh-signs, arranged like the spokes of a wheel from the edge toward the center.

Most of the recovered sealings were originally applied to large jar or bottles. The clay was spread on the cover in a thin and finely smoothed coating and on part of the neck. The two parts (e.g. those belonging to cover and neck respectively) have always been found broken apart, as is to be expected. The seal was mostly impressed on the flat surface (i.e. on the cover), but sometimes also on the vertical rim. The impressions on the back of the clay sealings perfectly reproduce the wheel-made ribbing of the fragments reutilised to make the covers. Three fragments of the same sealing reproduce (as a "negative"
impression) a decorationa made up of a set of nh-signs, that in the original cov-er was stamped in relief.

Two sealings, applied to bottles or pots with a narrow mouth, preserve the impression of a very fine cloth (a kind of guaze). Other small fragments pre-serve the impression of sack-cloth, of sraw-weaving, and of skin.

In one case, the sealing had been modeled as a stopper (9cm. in diameter, 1.5cm thick), but the seal impression is very damaged and the sealing itself is quite coarse both in fabric and in shape.

A second kind of sealing has the shape of an hemispherical clay lump (9cm, in diameter, 3cm, high at the center, with some variability), inside which two very neat groovings preserve the impression of two metal rods interlocking like two chain links. One of the two rods seems to protrude from a flat surface, and here generally the clay lump was broken. The flat (inside) surface of this kind of sealings is always gently convex, and often keeps the impression of the subtle viens of a wooden surface. As for this second kind of sealings, we can perhaps suggest that they were originally applied to wooden boxes or cases. In both kinds of sealings the clay is generally well refined, tempered with very fine sand, and yellow-creme or grey in color.

A third kind of sealings is made up of clay lumps originally applied to proper door lockings: in some cases the impression of a sort of knob is clearly visible. This group of sealings is generally made of a coarser granulated clay-upon which the seal impression is generally less clear and neat, and the breaks are less regular and more frequent.

Lastly, a quite large amount of clay frgments have a smooth surface on one side, and a surface filled with finger impression on the other side. These fragments have various measures in length and width, but the thickness is rather consistent, ca. 1.5-2.0cm. Only one fragment is gently curved, as if it kept the "negative" impression of the shoulder of a large pithos. A peculiar feature of these fragments is that each of them keeps the repeated impression of one fin-ger at the time. In some cases the impressions belong to a large thumb, in other cases to smaller fingers (forefingers, little-fingers, etc.): the skin convolutions are often visible in the finger-marks, and the mail impressions are sometimes
very neat.

On the whole, the amount of sealings coming from this first room only is already considerable: more than 800 fragments with seal impressions have been recovered, while more fragments keep only the back impression of the object upon which they were applied - in any case providing valuable information on their function and use.
N. 1 - Impression of a circular stamp-seal (diam. 3.1cm.) (Fig. 2.1)

The field is occupied by the representation of a lion, stepping rightwards, above an uraeus.

The lion is in profile and the head is full face. The eyes are round and protruding; the mane is thick also under the muzzle. On the head there is a hhmhm-crown. The lifted tail follows the curved contour of the stamp. In the upper left quadrant a winged sun-disk is obliquely set.

The lion is to be identified as the god Apedemak, because of his hhmhm-crown and solar attributes.  

The representational pattern is the same as the standard with the lion in the back wall of the southern pylon of the "Lion Temple" at Naqa.

The drawing is very accurate in detail; but in the frontal representation of the head, an excessive emphasis in the muzzle features provides the animal with an odd look, not really becoming to a lion.

The impression is preserved on 12 fragments of sealing, of the kind used to seal large jars. One of the fragments is the flat upper part of the sealing (10cm, in diam.) with four, regularly spaced, impressions. Another, less complete fragment has five, irregularly spaced, impressions.

N. 2. - Impression of a circular stamp-seal (diam. 2.5cm.) (Fig. 2.2)

The field is completely occupied by the representation of a lion, stepping rightwards, upon an uraeus. The body is shown in profile, the head is full face. The eyes are round, the mane is thick also under the muzzle. The lifted tail follows the curved contour of the stamp. A sun-disk with two urael is set in the upper left quadrant.

The lion is to be identified with the god Apedemak, because of the hhmhm crown and the solar attributes.


The drawing is very fine and accurate. The subject is quite similar to n. 1, the only differences being the lesser size and the presence of the sun-disk with ureai instead of the winged sun.

The impression is preserved on 7 fragments of sealings, of the kind used to seal large jars.

**N. 3.- Impression of a circular stamp-seal (diam. 3.0 cm.) (Fig. 2.3)**

The field is occupied by a scene with different elements. In the lower part is a *nb*-sign, upon which, in the center of the field, a winged lion is sitting, turned leftwards. The lion has a *hmhm* crown on his head, in front of him a two-handled vessel with conical base is set upon a stand. Behind the lion, a female figure with a hawk on her head and a long robe (leaving feet and ankles uncovered), holds in her hand a long palm-frond.

This is a representation of an offering scene to the god Apedemak, to whom the "hawk goddess" pays homage.

The figurative pattern, and the various composite features, are well known in Menoitic iconography. A quite similar offering vessel is set in front of a god with hawk head and crocodile body, receiving the homage of the royal family at Naqa.⁴ The winged lion with *hmhm* crown, a representation of Apedemak, is frequently found in the reliefs of Musawwarat es-Sofra.⁵ The female figure with palm-frond, to be identified as the "hawk goddess" because of her skullcap surmounted by a hawk, is already known from the Naqa and Amara reliefs.⁶

The drawing is accurate and precise in its details, such as the ribbing of the *nb*-sign, the feathers on the wings of the lion and the abundant outline of the female figure.

The impression is preserved on 430 fragments of sealings, of the kind used to seal large jars.

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⁴ Cf. The relief inside the "Lion Temple" at Naqa: TAVO 48/3, vol. II, P1. 9b.
⁵ Cf. Zobkar, Cit., p. 77.
⁶ The identification has been longly debated, cf. TAVO 48/3, vol. I, 37.
N. 4. - Impression of an oval stamp-seal; fragmentary (larger diam. 3.1 cm.)
(Fig. 2.4)
The field is completely occupied by the representation of the god Apedemak, shown as a winged lion with hnhm crown, face turned leftwards, and sitting on a shallow base.

The representation of the winged and crowned lion is similar to n. 37

The impression is preserved only on one fragment of sealing, badly worn out, of the kind used to seal large jars.

N. 5. - Impression of a circular stamp-seal (diam. 2.6 cm.) (Fig. 2.5).
The field is occupied by three elements, all of them standing on a flat base. The central figure, full face, is a lion with hnhm crown; on the right and on the left -in symmetrical position- two human figures are shown in profile with lifted arms. The figure on the left seems to have on his head a conical vessel; but we cannot rule out (taking into account, by way of analogy, also the figure on the right, which has nothing on the head) that we are simply dealing with an uneven breakage in the surface of the stamp.

The drawing of the lion is not detailed, schematically reducing the mane to a rectangular element, like a sort of long bib, from which the two paws are protruding. This is in fact the typical representation of the lion in Meriotic statues. Therefore the impression can perhaps be interpreted as a scene of homage payed to the cult-statue of Apedemak.

The impression is preserved on two fragments of sealings, both made of a coarse and badly refined clay, and very deteriorated. One of them belongs to the massive type, and still has on its flat interior surface the impression of the veins of the wood on which it was applied. The other one is the upper, flat part (diam. 10cm.) of the kind of sealings used to seal large jars.

7. For the representation of the winged lion in meroitic art cf. zabkar, cif., p. 77.

8. Cf. e. g. the lions from Basa, kept in the courtyard of the National Museum in Khartoum; and lastly the lions which were standing at the entrance of the (very same) Palace of Natakanam in Gebel Barkal.
N. 6 - Impression of circular stamp-seal (diam. 2.1 cm.) (Fig. 2.6)

The field is occupied by the frontal view of the head of a lion with \textit{hmmh} crown.

The lion with \textit{hmmh} crown is the god Apedemak. The drawing of the head is similar to the impressions nn. 1 and 2: rounded and protruding eyes; thick mane reaching under the muzzle (as a rounded beard); a vague and probably unintentional anthropomorphic look. In all these seals, the unsatisfactory rendering of the feline features seems the result of the difficulty met with the frontal representation; and also of the willingness to emphasize the terrifying look well fitting to the warlike nature of the god.

The subject in this seal is similar to a golden head kept in the National Museum of Khartoum, and coming from the western cemetery of Meroe (W 254).\footnote{Sudan national Museum, inv. n. 2258; D Dunham, The West and South Cemeteries of Meroe, (RCK V), Boston 1963, p. 268, fig. 164. 8.}

The impression is preserved on two fragments of sealings, of the kind used to seal large jars.

N. 7 - Impression of an oval stamp-seal (diam. 2.0x1.5 cm.) (Fig. 2.7)

The field is completely occupied by a lion head, shown in profile, toward the right, with \textit{hmmh} crown and a large \textit{wsh} collar.

The lion with \textit{hmmh} crown can be identified as the god Apedemak.

The same subject is found on an electrum signet-ring from the western cemetery of Meroe, although the rendering of the figure seems completely different.\footnote{D. Dunham, RCK V, W 33, 77 k.}

In our impression, the drawing is very fine and the details are accurate, notwithstanding the reduced size of the seal.

The impression is preserved on 11 fragments of sealings, of the kind used to seal large jars.
N. 8 - Impression of an oval stamp-seal (diam. 2.0x1.6 cm.)

The field is occupied by the representation of a lion, lying down and turned towards the left. Above the lion, a curved element could be interpreted as an extremely simplified rendering of the "sacred tree".

The motif of the lion under the sacred tree (always in a very simplified rendering), is found in the decorated arm-bands of Natakamani and Amanitere in the Lion Temple at Naqa,¹¹ and on a column inside the Lion Temple at Musawwarat es-Sofra.¹²

The impression is preserved on two fragments of sealing, of the kind used to seal large jars.

N. 9 - Impression of an oval stamp-seal (diam. 3.0 x 2.7 cm.) (Fig. 2.9)

The field is occupied by two lions, sitting on a flat base, shown in profile and facing outwards. A sun-disk is represented above them, with two, uraei from which two wings stem out and reach down towards the heads of the lions. Between the two lions, a small element could be possibly identified as a scarab, according to the clearer impressions.

The subject recalls the 3kr-sign, consisting of two lions, the custodians of the two horizons, which is represented in Egypt on amulets and scarabs.¹³ In the Egyptian exemplars the element between the two lions is generally a sun-disk; but this can certainly be ruled out in our case—even though the interpretation of the central element as a scarab is far from sure.

In the Meroitic area the two lions, sitting and united by their backs are found on a column inside the lion temple at, Musawwarat es-Sofra.¹⁴ The drawing is generally rather simplified.

¹² Zabkar, Cit., p 1. XIX b.
¹⁴ Zabkar, cit., Tav. XXb: the central element in this case is a lotus-flower.
The impression is preserved on 106 fragments of sealings, of the kind used to seal large jars.

N. 10. - Impression of an oval stamp-seal (diam. 3.0 x 2.8cm.) (Fig. 2.10)

This seal-impression is quite similar to n.9, only some minor details being different. In particular, the shape of the winged sun-disk is almost reduced to an arch above the lions, even though in some better preserved impressions the accurate drawing of the feathers on the wings is visible. The lions, moreover, are closer to each other in the seal n. 10 (cm. 2.0 from muzzle to muzzle) than in seal n.9 (cm. 2.5).

It has not been possible to ascertain, in the total group of 106 fragments, how many impressions belong to seal n. 9 and how many to seal n. 10.

N. 11. - Impressions of a circular stamp-seal (diam. 2.5cm.) (Fig. 2.11)

The field is occupied by two lions, sitting on a flat base, shown in profile, facing outwards. Between them is a sun-disk.

The subject recalls the 3kr-sign, like the seals nn. 9 and 10. Differently from these seals, n. 11 has a circular shape; moreover the winged sun-disk is missing, but a sun-disk is set between the lions.

The impression is preserved on 26 fragments of sealings, of the kind used to seal large jars; and on a fragment whose upper part is completely preserved and was applied to a bottle or a pot with narrow mouth (diam. 5.2cm.). A gauze is impressed on the back of the sealing, originally fixing the content of the pot.

N. 12 - Impression of a circular stamp-seal (diam. 2.5cm.) (Fig. 2.12)

The field is occupied by the half figures of two lions, united by their trunks, and crouched on a flat base. A sun-disk with two uraei is set above and in between the two lion heads.

The subject is to be referred to the 3kr-sign, consisting of two lions or two lion foreparts, as in this case, representing the custodians of the two horizons,
and decorating Egyptian amulets and scarabs. 15

The drawing is rather simplified and rough in its execution.

The impression is preserved on 43 fragments of sealings, of the kind used to seal large jars.

**N. 13 - Impression of a circular stamp-seal (diam. 3.4cm.) (Fig. 3.13)**

The field is occupied by the representation of a mythical being, with lion head and hmem crown, lifted arms with hands holding the nb-sign, the body of a scarab (marked by a deep grooving in the middle), the paws of a frog, the wings and the fanshaped tail of a hawk.

The lion head with protruding, rounded eyes, and with a mane reaching down under the muzzle (as a rounded beard), is similar in typology to those in seals nn.1, 2, 3.

In Meroitic art a similar being is shown on a signet-ring from Kawa (with ram-head, however). 16 A ram-headed being with the body of a scarab and the paws of a frog is also shown on one of the arm-bands of king Arnekhemani at Musawwarat es-Sofra. 17

The drawing is very accurate in all its details.

The impression is preserved on 5 fragments of sealings, of the kind used to seal large jars.

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N. 14. - Impression of an oval stamp-seal (diam. 1.9 x 1.5cm.) (Fig. 3.14)

The field is occupied by the figure of a hawk, in a frontal view, with a hathoric crown on its head. The open wings are bent downwards; but above them two subtle arms are stretching out and each holding a nb-sign. The head, also full face, has a vaguely squared outline; in its upper part, two small protuberances look like two small rounded ears. It seems to be ruled out, therefore, that we are dealing here with the head of a hawk - although the interpretation is hindered by the small size and the unsatisfactory state of preservation. The similarity in shape (in a quite minor size) with the head of the mythical being in seal n. 13, make it possible to suggest that we have also in this case a lion head.\(^{18}\).

The apotropaic figure of the hawk with stretching wings, in frontal view, is quite common in Meroitic iconography - from those represented on the shoulders, hips, and neck of gods and kings,\(^{19}\) to those modelled in full relief.\(^{20}\) It is complicated in our case by the insertion of the upper part of an apparently female, lion-headed goddess, stretching her arms out with hanging wings, and also endowed with an apotropaic function.\(^{21}\) Such a goddess is generally shown with a sun-disk and uraeus on her head, while here she is shown with a sun-disk between two horns. The lion head with hathoric crown is not rare, however, in Meroitic iconography.\(^{22}\)

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19. F. Hintze, Musawwarat as Sufra. Der Lowentempel, Tafelband, Berlin 1971, PIs. 29, 31, 33, 37, 49; TAVO 48/3, pls. 5a, 6a, 7.

20. Cf. the ear-drop from the pyramid W 5 of Meroë, now in Museum of Fine Art, Boston; D. Dunham, RCK V, cit., p. 125 a.


22. A silver signet-ring has an engraved lion with hathoric crown, cf. D. Dunham, Royal Tombs at Meroë and Barkal, RCK IV, Boston 1975, p. 141; F. Hintze et al., Der Lowentempel, cit., pls. 80, 81, 96, 97.
In Egypt, an amulet in blue glass reminds - with the only difference of a female head- the pattern of this figure whose synchretism is quite peculiar.  

The figure is carefully drawn on the only fragment of sealing preserved, of the kind used to seal large jars.

N. 15. - Impression of an oval stamp-seal (diam. 1.9 x 1.5 cm) (Fig. 3.15)

The field is occupied by a figure, shown in profile, turned leftwards: its upper part is a hawk, its lower part is human.

A hmlm -crown is on the head, a nb-sign is on the knees. A sun-disk is set behind the figure, at the height of the head, with two uraei and three rays hanging down apparently ending with nb-signs.

The drawing is neat and fine; the feathers on the hawk's tail are particularly evident.

In Egypt this is the typical representation of the god Soped characterized however by different emblems: the scourge in hand and the two-feathered crown on the head.

The impression is preserved on 10 fragments of sealings, of the kind used to seal large jars.

N. 16. - Impression of a stamp-seal; fragmentary (diam. 2.0 + xcm.) (Fig. 3.16)

The preserved part of this impression shows a hawk; turning rightwards, standing on a uraeus with double crown. On the hawk head, just at the edge of the break, an uraeus can be seen.

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23. M.G.A Reinser, Amulets, cit., n. 13418, pls. XVII, XX.

An interesting parallel is provided by a signet-ring from Kawa.  

The impression is preserved only on the fragment of sealing, of the kind used to seal large jars.

**N. 17. - Impression of an oval stamp-seal (diam. 2.0 x 1.5cm.) (Fig. 3.17)**

The field is completely occupied by two hawk heads, facing each other, and joined at the bottom by a linking element following the curving outline of the seal. Both hawks have a double crown on their head.

A ring with two hawk heads comes from the cemetry of Gammal (Tumulus E).  

The impression is preserved on 9 fragments of sealings, of the kind used to seal large jars.

**N. 18. -Impression of an oval stamp-seal (diam. 25 x 1.7cm.) (Fig. 3.18)**

The field is occupied by a ram head, shown in profile, turned leftwards. The swollen wig goes in the front with a vertical grooving, until the middle of the large wsh collar. The curved horns, hardly visible, surround the muzzle down to the mouth. The ram bears on its head a crown with two straight feathers, between which a small sun-disk is set. The poor preservation of the fragment barely allows one to see on the left what seems to be an uraeus (missing on the right side).

This is a representation of the god Amun in form of a ram.

In Meroitic art the two-feathered crown with sun-disk with or without urael, is -in its simpler form- one of the most common emblems of the ram- shaped Amun. With this kind of headgear, it is shown on the columns of the temple of Amara, of the Amun temple at Naqa, and of the Lion temple at Musawwarat es-Sofra.

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25. M. F Laming MacAdam, cit., p. 177.

26. O. Bates- D. Dunham, Excavations at Gammal, Cambridge 1927, pl. XXXIII A.

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A bronze signet-ring with a ram head bearing the same crown comes from the Faras cemetery.  

The impression is preserved only on one, rather worn up fragment of sealing, of the kind used to seal large jars.

N. 19.- Impression of an oval stamp-seal (diam. 1.5 x 1.3cm.) (Fig. 3.19)

The field is occupied by the profile, turned leftwards, of a ram with a crown and a large \textit{wsh} collar. The ram has a swollen wig; the perfectly visible twisted horns go down along the jaw to the mouth.

The subject is drawn in a very rough way, and the state of preservation is not good: many doubts are therefore left about the type of crown. The two horizontal horns are clearly visible, with a sun-disk in their middle; but the two elements on the sides are more uncertain. They could be two straight feathers, set at the end of the horns, and so oblique as to be contained in the small space left in the field. In any case, this is a representation of Amun in the form of a ram.  

The only sealing preserving this impression belongs to the massive type, and it is deformed, and must have been taken away when still wet. The back is crushed and partly bent down on itself.

N. 20. - Impression of an oval stamp-seal (diam. 1.9 x 1.5cm.) (Fig. 3.20)

The field is occupied by a ram head, shown in profile, with a large \textit{wsh} collar and a very elaborated crown, formed by two horizontal horns, two straight feathers above them, a sun-disk in their middle, and two uraei at its sides. From the top of the feathers, two vegetable elements go down along the sides of the figure to the middle of the field.

This is a representation of Amun in form of a ram.


The drawing is quite accurate, and precise in all its details, including the lyre-shaped horns on the ram profile, the lines of beads in the collar, and all the details in the crown are perfectly visible.

The impression is preserved only on one fragment of sealing, of the massive kind (height up to the break: 2.5cm.). The underside has the impression of the wooden surface to which it had been applied.

N. 21. - Impression of an oval stamp-seal (diam. 1.9 x 1.6cm.) (Fig.3.21)

The lower half of the field is occupied by a sun-disk with two uraei. The upper half is occupied by a ram head shown in profile, surmounted by a winged sun-disk with two uraei. The wings of the sun-disk go down, along the sides of the ram head, following the curved border of the seal, to the middle of the field.

A quite similar ram head with a winged sun-disk, is shown on a signet-ring from the west cemetery of Meroe. 29

The impression, although badly preserved, shows anyhow a careful rendering of the details of the drawing.

The impression is preserved on three fragments of sealings, of the kind used to seal large jars.

N. 22. - Impression of a circular stamp-seal (diam. 1.8cm.) (Fig. 3.22)

The field is completely occupied by the figure of an elephant, stepping towards the right, on a flat base line. The trunk is lifted up, and the large ears are underscored by fan-wise groovings.

The drawing of the elephant's ears is typical in the pictorial and relief representation of this animal in the Meroitic age. 30

The impression is preserved on 11 fragments of sealings, of the kind used to seal large jars.

29. D. Dunham, RCK V, p. 277, n. 17w 454

N. 23. - Impression of an oval stamp-seal (diam. 2.2 x 1.7cm.) (Fig. 3.23)

The field is completely occupied by the figure of a horse, stepping rightwards, above an uraeus.

The impression is preserved on 7 fragments of sealings, of the kind used to seal large jars. One of the fragments is the upper flat part of a sealing, almost complete (diam. 9.0cm.), bearing 5 perfectly visible impressions.

N. 24. - Impression of an oval (?) stamp-seal, fragmentary (diam. 1.9 + Xcm.) (Fig. 3.24)

The field is occupied by the representation of a bull, stepping towards the right, above an uraeus. A hawk is set, shown in profile, on the back of the bull.

The presence of the hawk on the back of the bull and the uraei under its paws, suggest that we have here a divine figure, perhaps similar to the bull Bucchis, that in Ptolemaic Egypt was represented with a hawk on its back.\(^{31}\)

A seal impression (on clay) from Faras contains the representation of a bull, stepping towards the left.\(^{32}\)

The drawing is very accurate and precise in every detail, as the gibbosity of the withers -even though the state of preservation is not perfect.

The impression is preserved only on one fragment of sealing, of the kind used to seal large jars.

N. 25. - Impression of an oval stamp-seal (diam. 1.6 x 1.2cm.) (Fig. 3.25)

The field is completely occupied by the figure of a crocodile, plastically rendered and viewed from above.

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The unusual representation of a crocodile (generally shown, by time-honored tradition, in profile) suggest that we are dealing in this case with a precise reference to a peculiar image of that reptile perhaps linked to a special cult form in which the crocodile was venerated in a pool. This suggestion acquires some weight because of the recent finding of a small basin with a bronze crocodile, in the Meroitic Cemetery of el-Hobagi.\textsuperscript{33} On a miniature vessel from Kerma, a crocodile is represented seen from above.\textsuperscript{34} The drawing is very rough and simplified.

The impression is preserved on 5 fragments of sealings. Only one of them belongs to the kind used to seal large jars; the other 4 belong to the massive type (maximum height 3cm. in the center) with wood impression on their bases, and they were possibly used to seal boxes.

N. 26. - Impression of an oval stamp-seal (diam 1.8 x 1.5cm.) (Fig. 3.26)

The seal contains representations of a crocodile and a frog. The crocodile is drawn near to the border, and follows its curve with the elongated muzzle and the tail, while the paws lean on the border itself. The frog -the size of which is largely exaggerated in comparision to the crocodile- is set (with the fore paws lifted upwards) in the curve between the body and the tail of the crocodile, so as to occupy the central part of the seal.

Both frog and crocodile are very common features in the Meroitic imagery (in amulets, reliefs, and pottery decoration), even though generally are not shown in association.

The drawing is elementary and simplified, recalling the forms of the pottery decoration.

The impression is preserved on 5 fragments of the most common type, used to seal large jars, and on 21 fragments of the massive type with coarser clay, the function of which to seal door locks has been hypothesized.


\textsuperscript{35} Cf. the paintings on the Faras pottery: Asholean Museum, Cat. n. 1912. 308, 1912. 401, 1912. 333.
N.27. - Impression of an oval stamp-seal (diam. 3.0 x 2.7cm.) (Fig. 3.27)

The field is completely occupied by an uraeus with sun-disk.

The figure is shown facing right. The cobra in position of attack has a dilated throat, as underscored by two grooving; the eye is round and protruding; the long body is curled up in a spiral. In the lower part of the sun-disk we notice the traces of very fine vertical stripes, and a horizontal band in the middle of the disk, ending on the front by a protruding element not easily understandable (perhaps a knot, or a flower?). This treatment of the sun-disk is rather common in Meroitic iconography.\textsuperscript{36}

The figure is quite precise and well drawn.

The impression is preserved on two fragments of sealings used to seal bottles or vessels with a narrow mouth (diam. of the opening ca. 4cm.). One of the two sealings has the upper flat surface complete, and the back shows the impressions of the content of the pot, probably corn.

N. 28. - Impression of an oval stamp-seal; fragmentary (height 2.2cm.) (Fig.3.28)

The field is occupied by the figure of a Bowman, stepping towards the right. The Bowman, probably a king, has a crown with four straight feathers above a smooth skullcap with an uraeus in front and ribbon on the back, well visible and reaching down to the shoulders. In the profile, the short ritual beard is visible. The dress is long, leaving visible only the ankles and the feet with sandals. The left arm is stretching out, holding a large bow the length of which goes from the head of the man to the hem of his robe. The right arm, turned backwards, is only partially kept.

The headgear with the four-feathered crown is not unusual in Meroitic

royal representations, from the Tanyidamani stela to the reliefs on the columns at Amara. In this case, however, the figure of the king as a personification of Onuris or Aresnufis (as more probable in the Meroitic area) bring about the variation of the bow instead of the ritual spear (and we ignore what could have been held by the left hand).

The iconographic model is perhaps to be looked for in the philae reliefs, but also in other Ptolemaic temples in which the king is often represented as Onuris, in the act of striking down the enemies of Ra.

A group of silver and golden plaques with striding human or divine figures, each carrying a bow in one hand with the upraised rear arm bearing a mace or arrow, have been found in royal tombs of Meroe, but the dresses and the crowns are quite different.

The drawing is precise, the outline is fine, and the details are carefully rendered.

The impression is preserved only on one fragment of sealing, of the massive type. On the back, the striations left by the viens of the wood are clearly visible.

N. 29. -Impression of an oval stamp-seal (diam. 1.9 x 1.5cm.) (Fig. 3.29)

The field is completely occupied by a human head, full face, with a shull-cap surmounted by a very small and simplified atef (?) crown. From the crown, two wings go down along the sides, following the curved border of the seal down to the middle of the field. The figure is completed by a large wsh collar.

38. L. V. Zabkar, cit., Pl. XI.
39. L. V. Zabkar, cit., pp. 97, 98.
41. D. Dunham, RCK IV, Beg. 16 p. 138 (21.3.694); Beg. 18 p. 148 (21.3.661).
The use of the "portrait" in frontal view is well known in Meroitic art, as shown in the large reliefs and in small objects. A group of signet-ring from Sedeinga has a human figure in frontal view, but the subjects are quite dissimilar, the man in the Sedeinga rings being bearded, without any crown.

The rendering of the subject is very precise and accurate, even though the features of the face have been lost.

The impression is preserved on two sealings, of the kind used to seal large jars.

N. 30. - Impression of an oval stamp-seal (diam. 1.9 x 1.5cm.) (Fig. 3.30)
The field is completely occupied by a sun-disk with two uraei, surmounted by a crown with two feathers and a small sun-disk in middle of them. The feathers are set upon a pair of horizontal horns, ending with two uraei:

The subject is similar to the one on a signet-ring from the west cemetery of Meroe.

The figure is carefully and precisely executed.
The impression is preserved on two fragments of sealings: One of them belongs to the type used to seal large jars, the other belongs to the massive type of refined clay (height 3.5cm. up to the break) possibly used to seal wooden boxes.

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It is certainly not yet time to draw a definitive conclusion from this first set of clay-sealings: we have to wait for the study of the large quantity of material recovered in the adjacent room (already dug in the 1988 campaign), and of other sealings which minor soundings have pointed out in other parts of the palace. Yet a few preliminary remarks are already possible.

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43. M. Schiff Giorgini, Sedeinga 1964 - 1965, Kush 14 (1965), Fig. c30, c31, c24, c25, pl. XXIX.
44. D. Dunham, RCK V, cit., 4 w 134.
The whole complex confirms the use-already well known in other areas and historical periods- as a discharge and custom of keeping the sealings inside the same building in which they had been used. The reason therefore was perhaps to avoid any forgery, and certainly the fact that the administrative material of the palace was in any case considered subject to a reserved treatment even in disuse.\textsuperscript{45}

The Gebel Barkal sealings, however, so varied in function and use, testify the protraction of an administrative system, once common to the whole East Mediterranean and Near-Eastern area until the close of the 2nd millennium B.C. but eventually fallen out of use in most regions.\textsuperscript{46} In Nubia, the discharge and storage of sealings in the great Egyptian fortresses of Uronarti, Semna, Buhen, Mirogissa and kerma, all belong to the period of Egyptian occupation, and the seal impressions generally record the names of the Pharaohs and the officials in charge.\textsuperscript{47}

No sign of writing has been recovered until now on the Jebel Barkal sealings, no interest for the names of the king or his officials, no well-wishing formulae. In a period in which, elsewhere, the administration had since long changed its systems and procedures of control, by largely using writing in order to record accounts of the stored goods, in the Natakanami Palace instead, not only the objects (like jars, bottles, large vessels, sacks, wooden boxes) but also the doors of the storerooms (as shown by the many impressions of door-locks) were still sealed without the intervention of other recording devices.

The administrative system in use, therefore, seems to have been rather an archaic one, in which the computation and checking of the stored goods was


\textsuperscript{46} E. Fiandra, Ancora a proposito delle cretule di Festos: connessione tra i sistemi amministrativi centralizzati e l'uso delle cretule nell'eta del bronzo: Bollettino d'Arte 60 (1975), pp. 1-25; an up-to-date survey of the findings can be found now in: p. ferioli - E. Fiandra, Clay-sealings from Arslantepe, cit., p. 457.

entrusted to officials endowed with a seal, but whose function did not necessarily require the knowledge of writing. Opening and closing the store-rooms were regulated by a checking system, in which the clay sealings were applied and taken away according to a tread that we hope to better evaluate after the excavation has been completed.

The goods belonging to the palace were sealed as soon as they were taken in charge, and then again every time they had been opened -a case that could take place also frequently, as testified by the sealings found distorted because taken away when still wet. The same treatment was deserved to jars coming from Egypt still closed (by a gypsum stopper): these had to be opened to check the contents and then closed again and sealed. During one of these operations, the neck of an Egyptian jar, found still closed, must have been broken.

From the point of view of iconography, the seal impressions on our sealings amplify to a notable extent our knowledge of the imagery of Meroitic art. Its inner consistency, the features of continuity to Egyptian tradition, and those of innovation, become more clear. A whole world of magic beliefs, of religious ceremonies, of local traditions is evoked by the representations of mythical beings and gods which have their models in the most important worship-places like Amara, Naqa, Musawwarat es-Sofra.

By their size, shape, and accuracy in design, the impression seem to result mainly from signet-rings, the use of which is widely testified, and which are found in large amount in cemeteries and tombs also non-royal in nature.

Moreover, the close similarity of some of the Gebel Barkal impressions with the subjects of some signet-rings from the cemeteries of Faras and Meroe-west, in tombs of officials the context of which is not particularly rich, seems to point to a centralized glyptic production. This fact fits quite well with the nature of the discharge in the Natakamani Palace, where the seals seem to have been entrusted by the king or by authorized substitutes to officials whose rank was not particularly high and who do not normally use writing.

48. Cf. p. 2

The iconographic motifs are mostly of Egyptian origin, but they have been re-elaborated according to the grouping and superimposing of symbolic features so typical of the Meroitic taste.

It is interesting to notice that the selection of motifs - inside the large reservoir of the Egyptian iconography - and their matching denote a clear disen- gagement from the models. The mastery of the subjects which are already quite different, relates something new, and allude to a mythical and religious world which by now is not Egyptian anymore, but only Meroitic.

This is so for the seal n. 1, representing a religious scene with the two properly Meroitic gods, Apedemak and the Hawk Goddess". It is so also for the figures in seals nn. 13 and 14, the apotheosis function of which is entrusted to fantastic beings with composite body. The single constitutive parts of these being are already known, but the resulting figures are quite new. Also the clear prevalence of motifs directly linked to the cult of Apedamk (and more generally to the lion cult) is not devoid of meaning. 14 seals out of 30 have the lion as their theme - be it Apedemk in person, with the hfmhm crown and other solar symbols, or other lion-like or lion-headed figures always related to the solar cult.

The ram-headed Amun, who had his worship center at Napata itself, is present on 4 seals only. It is certainly too early and too risky to draw any consequence therefrom, yet we are tempted to think that in everyday life and in the imagination of common people, Amun's role was perhaps less relevant than in the official cult, and that the local cults did not receive any special attention in a centralized glyptic production.

Lastly, the large amount of animal representations is note-worthy: the horse, the elephant, the crocodile, the frog, the bull, whatever could have been their devotional value, are the sign of a precise and already known taste in Meroitic art for the world of nature - so alive and widespread in the country.

A little space is left to the king's figure: only two seals show him in his robe and in divine function. We have the impression, considering everything, that the goods of the Palace were entrusted more to the magic power of the beings represented on the sealings, than to any sophisticated security device.