

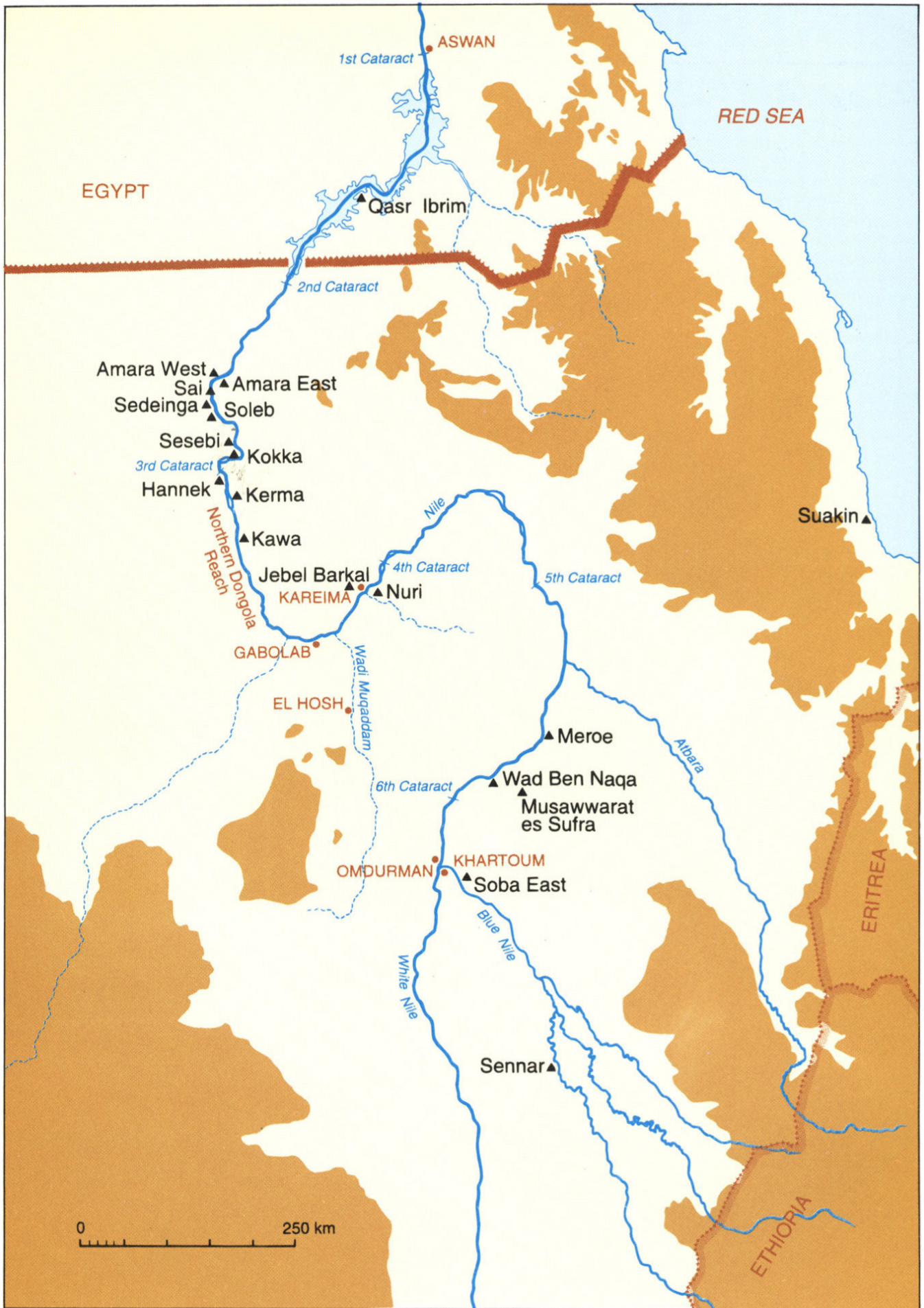
SUDAN & NUBIA

The Sudan Archaeological Research Society



Bulletin No. 1 1997





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Contents

Introduction	1
<i>Vivian Davies</i>	

Field Reports

The Northern Dongola Reach Survey: the 1996/7 season	2
Excavations at Sites O16, P1, P4 and P37 <i>Derek A Welsby</i>	2
Kerma Moyen Pottery from the Excavations of the cemetery at site P37 <i>Isabella Welsby Sjöström</i>	10
Holocene Alluvial History in the Northern Dongola Reach of the Nile: the 1996/1997 field season <i>Mark Macklin and Jamie Woodward</i>	13
Qalat Sai, the most southerly Ottoman Fortress in Africa <i>John Alexander</i>	16
Recent Fieldwork at Musawwarat es Sufra <i>Pawel Wolf</i>	20
Preliminary Report: SARS Survey from Omdurman to Gabolab 1997 <i>Michael Mallinson</i>	30

Recent Research

Amara West: Capital of Egyptian Kush <i>Patricia Spencer</i>	34
Napatan Period Metalwork: Further Analyses <i>Michael Cowell</i>	40

Miscellaneous

Obituary – Prof. Dr Ahmed M. A. Hakem (1938–1996), a personal appreciation <i>Abdelrahim M Khabir</i>	44
The Nubian Studies and Documentation Centre	44
Forthcoming Events	45
The Authors	45

Front Cover: Relief of the Kushite King Taharqo (690–664 BC) in the Temple of Amun, Jebel Barkal. (Peter Hayman)

Introduction

Vivian Davies

The appearance of *Sudan & Nubia* represents an exciting new development for our Society. Replacing the old *Newsletter*, and incorporating colour illustrations, it is designed to be a more substantial and attractive periodical, and of more lasting value. It will continue to publish reports of our own excavations and other scholarly activities but will also include papers dealing with relevant topics and material from other sources. *Sudan & Nubia* will serve, we hope, to promote interest both in the Society and in the field of Sudanese and Nubian archaeology in general, including that of Egyptian Nubia. It will appear, at least initially, once a year, in the Autumn.

This first issue contains an impressively wide range of subject-matter, covering a time-span of nearly five millennia. In the fieldwork section it will be seen that the Society's project in the Dongola Reach directed by Derek Welsby, comprising in this last season the rescue excavation of sites of the Kerma Period and related palaeohydrological research, continues to yield important new data, while a brand new project initiated by Michael Mallinson – a survey of multi-period sites in the Bayuda desert threatened by road-building – looks to be very promising. Pawel Wolf gives an account of the Humboldt University's fascinating and quite unexpected new discoveries at the great Meroitic temple-site of Musawwarat es Sufra. John Alexander reports on his investigation of an Islamic fortress on Sai Island, a military outpost (similar to Qasr Ibrim) which represents the southernmost point of penetration of the Ottoman Empire in Africa. There are two papers on recent research. Patricia Spencer has been reconstructing from old records the unpublished excavations at Amara West undertaken many years ago by the Egypt Exploration Society. She very usefully summarises the results of her work (recently published in full in an EES Memoir), which has shed valuable new light on this important pharaonic town-site. Finally, Michael Cowell provides an up-date on his programme of scientific examination of Nubian metalwork, a subject sorely neglected in the past. The project has now been extended to include Napatan foundation-deposits, source-material of special value for this kind of research in that the deposits are both well dated and richly endowed with metal objects.



Recent Fieldwork at Musawwarat es Sufra

Pawel Wolf

Introduction¹

Musawwarat es Sufra is located about 180 km north-east of Khartoum and about 30 km east of the Nile.² Its ruins, a group of ancient Meroitic temples, some of which belong to the greatest examples of Meroitic architecture, and other remains of human activity, for example artificial water basins, stone quarries, post-Meroitic cemeteries and settlements, are situated within the valley of the Wadi es Sufra. The main complex of ruins, the so-called Great Enclosure, is situated on the western side of the valley: three temples, two of which are built on 3-4 m high terraces, surrounded by a complex of interlocking courtyards (fig. 1 and back cover, top). The terrace temples, their side chapels and auxiliary rooms are connected by elevated corridors with ramps leading down to the courtyards. The architecture of this huge building complex – covering an area of more than 43,000m², it represents probably the largest coherent building complex in the upper Nile valley – was stimulated by Egyptian, Ptolemaic and probably even pre-Aksumite influences. As a whole, however, it will hardly find any parallel throughout the Nile (Wenig 1982). Musawwarat es Sufra, ancient Aborepe (Hintze 1962, 20), and the Great Enclosure must have been of great importance for the religion and the cult in the Meroitic kingdom. Thus, the study of this site can give us an exemplary insight into the history and the mode of function of a religious institution of the Meroitic empire.

Building activity in Musawwarat started probably as early as the Napatan period.³ However, no remains of these early buildings survive. The main part of the preserved ruins was erected during the early and middle Meroitic periods – the prime of Musawwarat es Sufra. The only sovereign known to have built in Musawwarat is king Arnekhamani (c. 235-218 BC). During the late-Meroitic period, building activities were confined mainly to repairs and preservation work. However, even after the decline of the Meroitic kingdom, some of the building remains were reused in the post-Meroitic and Christian periods.

Linant de Bellefonds and Frédéric Cailliaud in 1822 were the first European travellers to visit Musawwarat. Carl Richard Lepsius and the Royal Prussian Expedition made the first thorough scientific documentation of the

¹ This article is based on a paper given at the Annual Meeting of SARS in May 1997. It is a summary of the recent excavations since 1995. For the preliminary report of the season of spring 1995 see Wenig and Wolf 1996: 12-18. Reports on the seasons of fall 1995 – spring 1997 will be published in *MittSAG* forthcoming.

² At latitude 16° 24' 47" N and longitude 33° 19' 26" E.

³ For a short summary of the building chronology of the Great Enclosure see Hintze and Hintze 1970, 51-63.

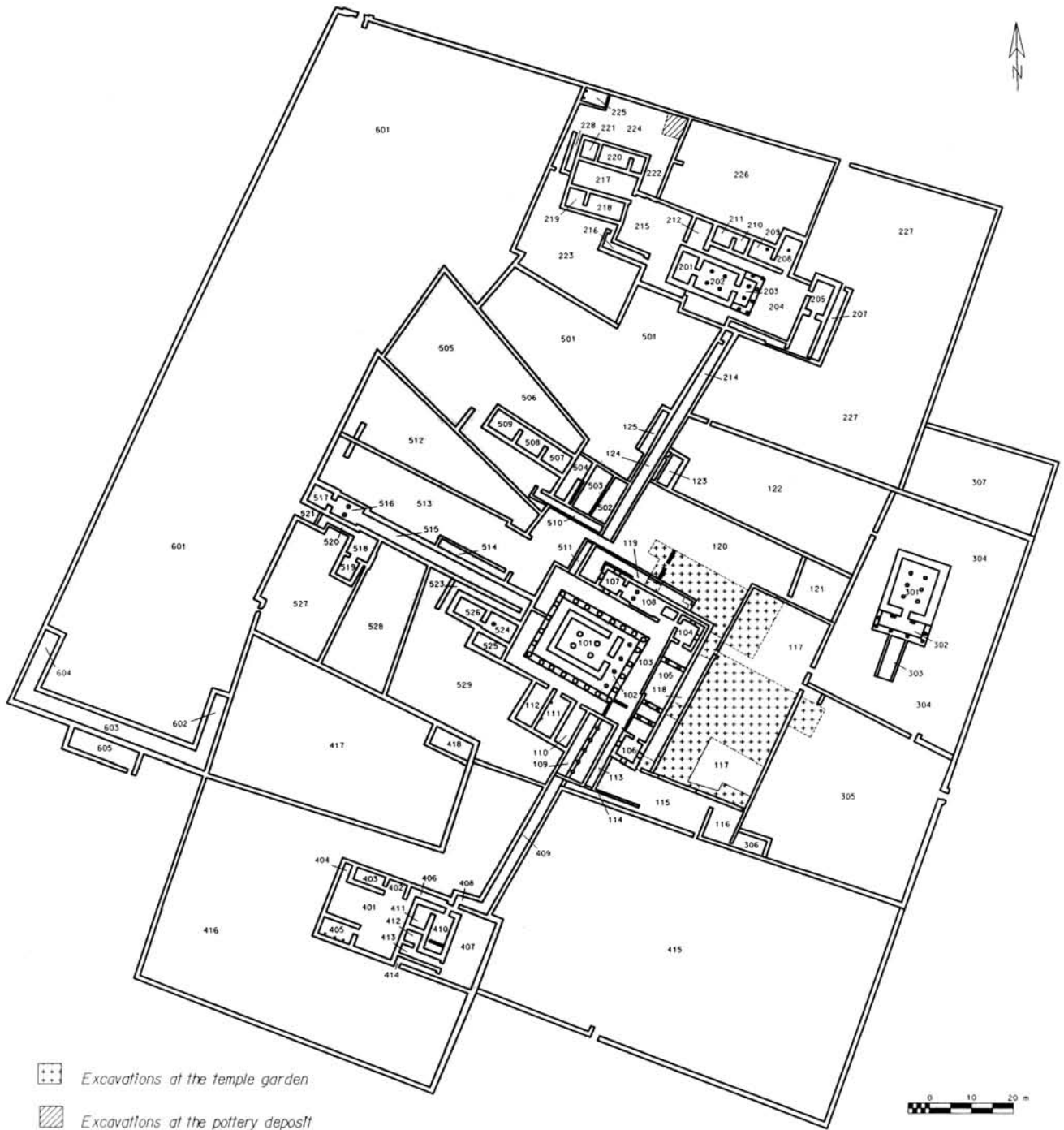


Figure 1. Sketch plan of the Great Enclosure with the areas of recent excavations.

site.⁴ Archaeological fieldwork started in 1958 with the Butana-Expedition of the Institute for Egyptology of the Humboldt-University of Berlin, led by F. Hintze (Hintze 1959, 179-183). During the following decade, seven seasons of archaeological fieldwork were dedicated to the

investigation of several sites in the valley of Musawwarat. The excavations in the Great Enclosure, carried out during three seasons in 1964, 1966 and 1968 (Hintze 1968; 1971),⁵ focused primarily on the central terrace, on the so-called “Western chapel”, its corridor and other building structures in complex 500 as well as on temple complex 200. They produced for the first time a documentation of

⁴ See Shinnie 1958, 114-121, pl. xviii-xxiv; Cailliaud 1826, 140-158; 1823: pls. xxii-xxxvi; LD I, 139-142; V, 71-75; LDT V, 343-345. For further literature on European travellers and early expeditions to Musawwarat see e.g. PM VII, 264-267; Wenig 1982.

⁵ For all preliminary reports of the excavations in the 1960s see Hintze and Hintze 1970, 49 n. 1.



Plate 1. Excavations in the temple garden.

the Great Enclosure's architecture based on the archaeological record. In addition, a chronological framework was established by subdividing the Great Enclosure's building history into eight periods, and the dating of the sixth building period to the reign of king Arnekhamani (Hintze and Hintze 1970, 51-62; Hintze 1971). At the end of this very fruitful period of fieldwork, the excavators suggested an interpretation of the site as a religious place and pilgrims centre. Although a considerable part of the ruins was not investigated and many problems of the chronology and architecture, the function and history of the Great Enclosure remained unsolved, Hintze's excavations laid the foundation for future investigation, the documentation and the publication of this very important site.

Fieldwork in Musawwarat revived in spring 1993. An expedition of the Institute for Sudan Archaeology and Egyptology of the Humboldt University, led by St. Wenig, carried out tests for a photogrammetric documentation of the Great Enclosure and a first survey of its state of preservation (Wenig 1995). Large-scale excavations, financed by the Deutsche Forschungsgemeinschaft (DFG), began in autumn 1995 after preparatory seasons in 1994 and spring 1995 (Wolf 1996a; Wenig and Wolf 1996).

In the first instance, the fieldwork since 1993 continued and extended the documentation which was not completed in the 1960s. The Great Enclosure was surveyed on the basis of a new system of co-ordinates. In connection with this survey, the

architectural examination of wall joins in order to complete the documentation of the building history was continued. A photogrammetrical documentation of the preserved parts of the Great Enclosure was carried out by a team of the Meßbildstelle GmbH (Berlin). In addition, the detailed architectural documentation of the central terrace and the archaeological investigation of its not yet fully excavated north-eastern part were continued. These studies revealed new and interesting structural elements like the drainage system of the central terrace. In co-operation with a palaeo-ecologist, a soil specialist and a zoologist of the Fachhochschule Eberswalde a study was begun, the purpose of which is to reconstruct the climatic and ecological conditions in the Wadi es Sufra during the Meroitic period. Finally the epigraphic documentation of inscriptional and pictorial graffiti was continued (Hintze 1979; Wolf 1994). It is almost completed now in the field.⁶ Apart from further excavations, we plan a geodetic and a topographical survey of the valley of Musawwarat and a geophysical prospection in the courtyards of the Great Enclosure, both in co-operation with the Technische Universität Berlin.

Nowadays, archaeology without preservation of the sites is inconceivable. Thus, conservation work, which is financed and carried out by the Sudanarchäologische Gesellschaft zu Berlin e.V. (SAG), started in the season of

⁶ Preliminary reports on all these field activities will be published in the *Mitteilungen der Sudanarchäologischen Gesellschaft zu Berlin e.V. (MittSAG)* forthcoming.

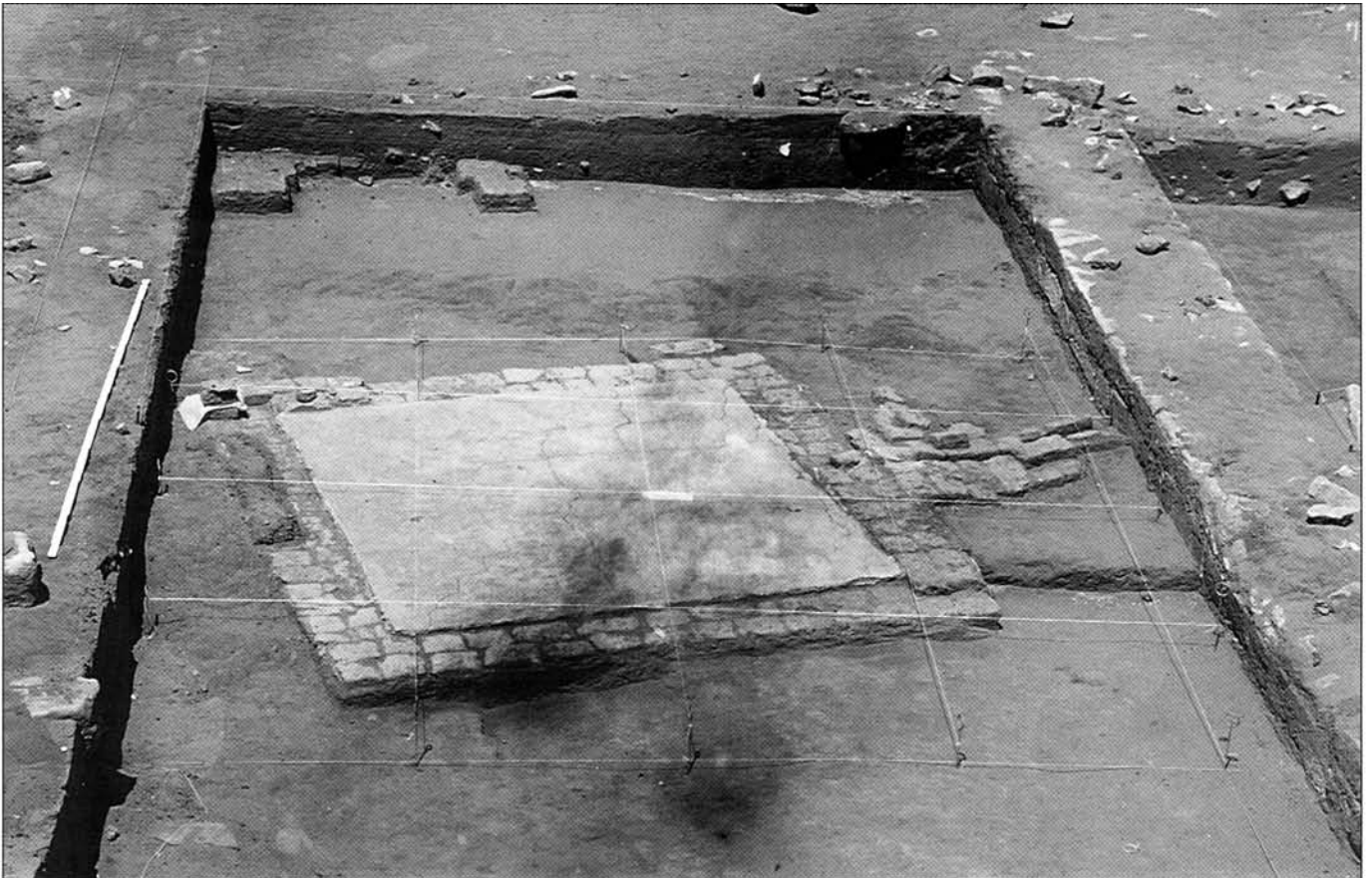


Plate 2. The water basin in courtyard 120.

spring 1995 with a thorough survey of the state of preservation of the Great Enclosure and the Apedemak temple (Wolf and Pittertschatscher 1996). Meanwhile we were able to remove a large part of the active sand dunes from inside the Great Enclosure, and in close co-operation with the National Corporation of Antiquities and Museums (NCAM) of the Sudan, we started the repair and reconstruction of collapsed and endangered buildings. Shelter-belts were planted in 1995 (*ibid.* and Wolf 1996b), and in 1997 we started the re-erection of the Great Enclosure's northern wall in order to protect the ruins against sand erosion, which increased seriously during the last decades because of the ecological changes in the Butana-steppe (Wolf 1995). Large-scale conservation work is planned for future years.

The principal focus of research of the recent field work is the archaeological investigation of the early building periods of the Great Enclosure and the study of the sacral and temple-economic functions of its various parts as well as their development through time. In contrast to the excavations in the 1960s, now the spacious areas of the courtyards are the focus of attention in order to find here the remains of early building periods which were not disturbed by later construction work.

Meanwhile, the uncovering of the sacral garden of the central temple (pl.1) as well as the discovery of a ceramics workshop in the northern part of the Great Enclosure – both the subject of this paper – contributed not only to the

clarification of the building history and the functional interpretation of these parts of the Great Enclosure. The historico-cultural importance of their complex results surpasses by far the limits of the site of Musawwarat es Sufra.

The garden of the central temple and its irrigation system

During the preliminary season of spring 1995 we made some test trenches in courtyard 117, which is situated east of the Great Enclosure's central terrace (*cf.* fig. 1). The underlying idea was that this area, hardly investigated at all in the 1960s, might possibly cover the remains of a processional way, directed from the Great Enclosure's eastern main entrance in court 305 towards a central temple of the early building periods before the erection of the central terrace, or other architectural remains of the early building periods. What we found was not what we expected. We found a couple of pits running almost parallel to wall 117/118 and the eastern façade of the central terrace. We tentatively explained these pits as plantation pits of a garden (Wenig and Wolf 1996, 16, figs 4-5). During the following season the excavation of this area was continued. It revealed the largest known temple garden of the ancient Sudan (fig. 2). Although remains of gardens were known from sites like Kawa (Kirwan 1955, 225-227; Macadam 1955, 58-69) and Meroe-City, none of them was ever systematically studied and recorded. Thus, we decided to continue the excavation of courtyard 117 and to

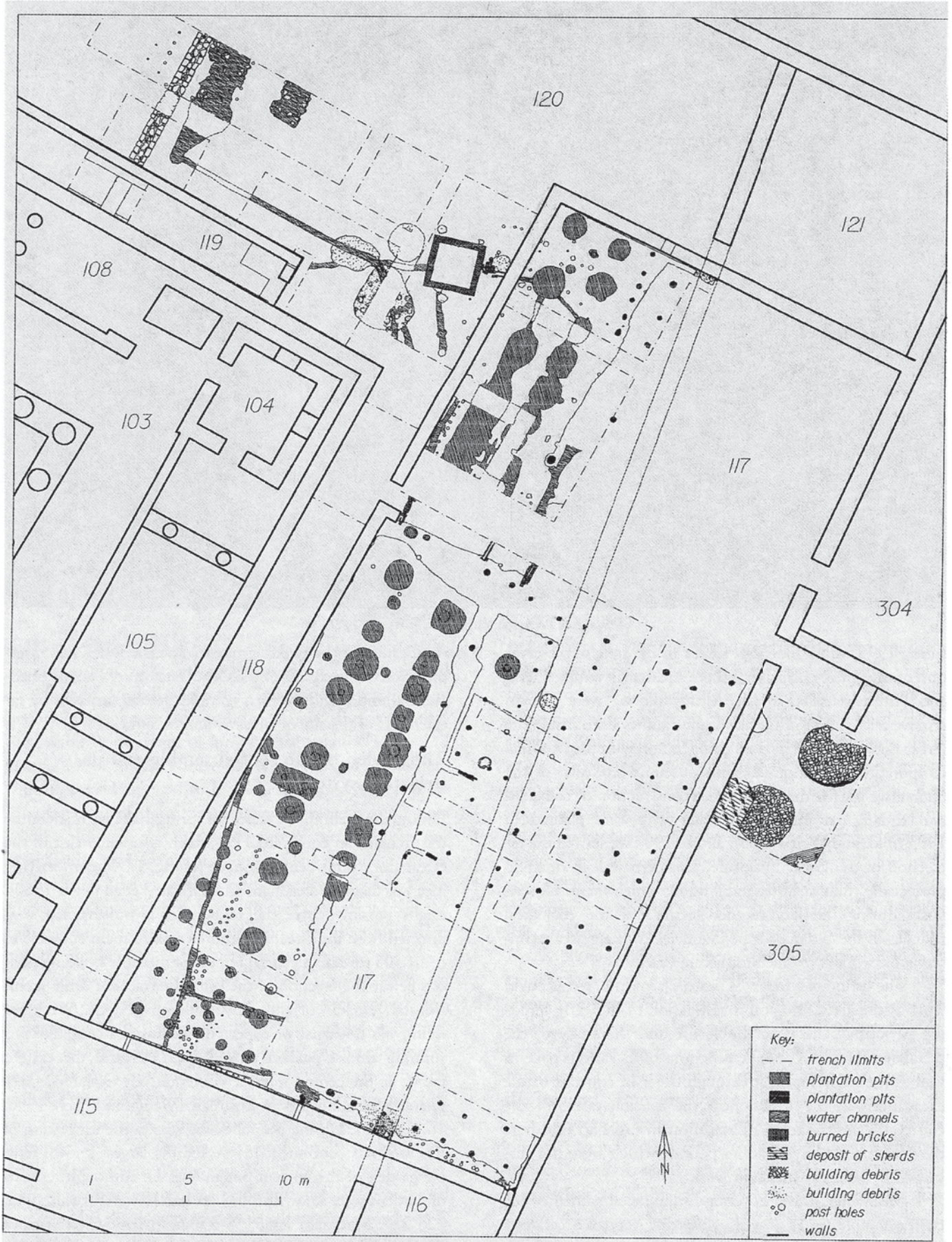


Figure 2. Plan of the temple garden and parts of the irrigation system.

extend the trenches into the adjacent courts 115, 118, 305 and 120 in order to document the extent and the layout of the garden, its stratigraphy and its chronological relation to the surrounding architectural remains. For the first time in the archaeology of the Great Enclosure, the function and the history of one of its courtyards became more and more clear. After two seasons of excavation, we may draw the following provisional picture, which is by no means complete and which will probably need some revision after the excavation results have been studied in detail.

Layout and history of the garden (fig. 2)

The garden developed in the course of its history and its layout changed in connection with the building periods of the Great Enclosure. Therefore, any static picture of the garden would be inadequate. The main evidence for the study of the garden's history is its horizontal stratigraphy, which is evident in the orientation of plantation pits, irrigation channels etc., since they obviously correspond in their orientation with other remains of specific building periods.

Two rows of 100-150cm deep plantation pits (c. 150cm in diameter) form a central north-south axis of the garden. According to their different sizes, shapes and soil fillings, it is possible to classify the pits into several types. Thus, we may suggest that there were alternately planted different species of plants.⁷ The orientation of this 'avenue', probably the main feature of the garden in its early stage, suggests a dating in the third building period.⁸ The garden's eastern limit was in that period a wall which is preserved only partially outside court 117 (walls 120/121 and 115/116). The northern end of the avenue could not yet be determined. The avenue was probably cut by the later wall 117/120 and continued perhaps until wall 122/227, similarly dated into the third building period.⁹ In the south, the avenue ends some meters north of wall 117/115. In this area the garden layout changes into a rectangular pattern of medium-sized pits with a different type of filling, which indicates a different species of plants. The orientation of these pits suggests a later date. Wall 117/115, which runs perpendicular to the eastern row of the avenue, might have been the southern limit of the garden in the third building period. However, the type of construction of this wall resembles the one of the central terrace, which is

later than the garden and the general layout of this area suggests also that the garden extended as far as wall 115/405, which was dated, like wall 122/227 in the north, to the third building period.¹⁰

Much more important are the irrigation channels found in that area. They are cut by the medium-sized plantation pits as well as by wall 117/115. Thus, they can be dated at least into the third building period. However, if we can date archaeological remains in the Great Enclosure by their orientation – assuming a general uniformity of basic orientations in a coherent building complex as already suggested by Hintze (1971, 228) – the orientation of these channels indicates a much earlier date. Their orientation matches up exactly with the only remains of the first building period found by Hintze to the west of the central temple (Hintze and Hintze 1970, 61; Hintze 1971, 228-233). This could prove, in the first place, that even the (so far undiscovered) temple of the first building period had a sacred garden, and that this garden extended beyond wall 117/115. Secondly, and no less important, this would support Hintze's observation that the central temple and building structures belonging to it were pulled down and rebuilt with a slight re-orientation (of usually 4-5°) in several of the building periods.¹¹ The later medium-sized pits, for example, coincide with the orientation of the fourth building period central temple.

Because of the central terrace, it is difficult to reconstruct the western limit of the garden in its early stage. Several pits were recorded below the central terrace during the excavations of the 1960s. The remains of the irrigation system extend to the west of wall 117/118+120 as well. However, our trenches inside court 118 did not yet reveal any traces of plantation pits.

Probably during the fourth building period, the garden was extended to the east. This is indicated by the internal stratigraphy of the garden and the orientation of the plantation pits in its eastern part. On the occasion of the extension, the former eastern wall was demolished and wall 117/305 was erected as the new eastern border with an orientation which equals that of the central temple of the fourth building period. To the east of wall 117/305 we found large undisturbed pits filled with building debris. This suggests that courtyard 305 was outside the garden area and that a further garden extension did not take place.

The eastern garden extension consisted of c. 60 small plantation pits, each about 25cm in diameter and depth. The pits were set in a rectangular pattern in an area which

⁷ Because of a lack of wood, roots or any other macroscopic organic remains, it has not yet been possible to determine the species of the plants (see below), which, judged by the pits, must have been small bush-like trees. According to an idea of St. Wenig, it seems probable that at least some of the plants were incense trees.

⁸ Hintze dated temple 300 and the eastern outer walls of this complex tentatively into the 3rd building period, since their orientation corresponds to the one of the 3rd building period's central temple (Hintze and Hintze 1970, 61; Hintze 1971, 233-240). The dating proposed for the garden's avenue is based on the same observation. However, the western row of pits is oriented slightly more clockwise, which would rather suggest a slightly later dating.

⁹ Whether a huge garden area, which included courtyards 117, 120 and 122, enclosed the early central temple will be investigated by a geophysical prospection in a future season.

¹⁰ We found, however, two building levels of wall 117/115. Therefore, the preserved wall 117/115 might have been the reconstruction of an earlier wall.

¹¹ With the exception of the 2nd building period, the orientation of which deviates by 12° from this sequence. It is quite equal to the one of the 6th building period (Hintze 1971, 231). However, the investigation of the north-eastern part of the central terrace (outside the scope of this paper) might prove that a 2nd building period never existed (as is suggested by Priese, pers. comm.).



was dug over to a depth of 30-50cm. As with the pits of the avenue, due to the lack of roots etc., we cannot define the species of plants in this area. However, compared to what we know from ancient Egyptian gardens (see e.g. Meyer 1986, 1169ff) and taking into consideration, for example, the account of Taharqo's Kawa stelae (Macadam 1955, 58-59), vines might have been planted.

What happened to the early part of the garden in the west of court 117? In this area, the remains of the garden were covered with a soil layer – up to the same height as the dug over ground in the east. It is not yet clear whether this layer is a sediment layer or whether it is the result of an artificial levelling up of the ground.¹² In any case, it does not show any physical remains of a garden. Thus, it is conceivable that the eastward extension of the garden was associated with its abandonment in the west – that the garden 'moved' to the east, perhaps in order to make way for an extension of the central temple area in the fourth building period.

The foundation trenches of walls 117/115 and 117/118 were cut into the layer mentioned above, but they did not cut any plantation pits – as if the ancient architects knew exactly the position of the plants. This could indicate that the plants in the western part of the garden were still alive when these walls were under construction. Hintze dated wall 117/118 into the seventh building period, but the stratigraphy between this wall and the eastern frontage of the central terrace (dated to the sixth building period) indicates that they were built nearly at the same time. If this can be proved, it would suggest that the garden still existed during and after the erection of the central terrace,¹³ and that since that time the garden was confined to the area of courtyard 117.

The irrigation system (fig. 2, pl. 2)

The garden's irrigation system consists mainly of trenches (usually about 20-30cm broad and deep) dug into the ground at the level of the plantation pits. In the north of courtyard 117, they link the large pits of the avenue. In the south-western part of this courtyard, however, the channels predate the preserved garden structures (see above).

In some places, 1-2m long sections of channel were lined with burned bricks. The interpretation of this feature became clear after we visited a modern garden at the Nile. Whereas in between the plants the channels were just trenches dug into the ground, they were laid out in bricks when they crossed paths. Later on, this observation was confirmed by the archaeological evidence in courtyard 117. Apart from the fact that it was interesting to trace the survival of this feature into modern gardening practices in the Sudan, this observation will help to reconstruct the structure of pathways and passages in the courtyards of the Great Enclosure.

¹² The layer has no internal lamination structure and it contains a relatively high amount of phosphates, which points towards the latter explanation.

¹³ With wall 117/118, which was perhaps originally a sort of shelter for the garden against the construction activities.

During the 1996 season we noticed two relatively broad trenches in courtyard 120 (fig. 2). Coming from the north, they end some meters in front of the central terrace. That season we thought that we had found two further foundation trenches of earlier building structures. After a closer examination in 1997, this assumption had to be corrected. Both trenches, each about 150cm wide, were probably the main water channels for the water supply of either the irrigation system or the construction of the central terrace.

An essential component of the irrigation system was found in the 1997 season. This was the remains of a water basin laid out in red bricks and plastered with a thick water-resistant rendering (fig. 2, pl. 2). The basin is 2.75m square and was very probably used as an intermediate water storage facility. Its tube-shaped water outlet (c. 4cm in diameter) is directed eastward and was linked to the irrigation trench system of the plantation pits of the avenue in courtyard 117. If we estimate that the height of its side walls was 1-1.5m, it was able to hold about 10m³ of water – probably enough for watering the plants for one day. This installation illustrates that water supply and irrigation were regulated activities. Filling up the storage tank took place during the day, watering the plants in the evening. It is not yet clear where the source of the water was and how the water was brought to the basin. It is possible that the water supply was provided via the broad water channels mentioned above, since they end only a few meters to the west of the basin. The channels, in turn, might have been linked to the small *hafir* situated about 100 meters north of the Great Enclosure.

The architectural documentation revealed another interesting feature of the water conducting system. Water outlets of a drainage system of the Great Enclosure were found in ramp 119 and in the northern frontage of the central terrace. The drainage water also passed along channels. Whether this system was self-contained or whether it was linked to the irrigation system remains to be investigated by future fieldwork.

The plantation pits (colour plate VIII)

In the 1996 season we sectioned a number of plantation pits in order to learn more about the plants and the gardening technology. We were able to record not less than 10 pit types, which differed in size and shape as well as in the type of their soil filling. Almost all of the pits had elaborate fills of various layers containing mixtures of sand, loam, silt and gravel, often mingled with the surrounding ground. Unfortunately there were virtually no remains of wood, roots or any other recognisable macroscopic organic remains. However, soil samples were taken from various fill layers. Some of them have been analysed by general chemical analysis. A large corpus of samples, however, was archived in Berlin for more specific analysis. We hope that a combination of special scientific analysis, the investigation

of the plantation 'syntax', and comparative studies with ancient Egyptian temple gardens might help to determine the species of the plants.

Some observations throw light on the gardening technology. For example, the garden area in courtyard 117 contained very few sherds. Sherds were found usually at the outer side of the dark-green loamy lumps in the pit's centre, which originally contained the roots of the plants, or the sherds were sometimes just scattered in the plantation pits. The very well preserved shape of the loamy lumps allows us to reconstruct the form of the vessels. East of wall 117/305 we found a deposit of about 130 kg of sherds – virtually all of the same vessel type. After a theoretical reconstruction, it became clear that the deposited pots matched the small plantation pits in the garden's eastern part in shape, size and even almost in number. Obviously the plants were grown in tree nurseries (near the Nile). After their transport to Musawwarat and the preparation of the plantation pits, the plant pots were smashed at the site. Since the garden was considered a sacred place, the sherds were buried outside the garden.

The lack of root remains still requires some explanation. One possibility is that roots and other organic material did not survive due to the ecological conditions in Musawwarat. However, the layers inside the pits do not show any disturbance, which we must assume if the plants had grown to a certain size. This could indicate that the plants did not survive a long time. In addition, the stratification of the fills of several pits of the avenue shows indications of re-excavation and reuse. The phenomenon could support the interpretation of the Great Enclosure as a place of pilgrimage. If the Great Enclosure was frequented in order to celebrate specific festivals which took place only periodically (perhaps even over periods of many years), we could quite reasonably suppose that in connection with the necessary building activities the garden was re-arranged and prepared on the occasion of these festivals. After the celebration, the plants died, left without any regular watering and attention until the next festival.

The ceramics workshop in the north of the Great Enclosure (cf. fig. 1, pl. 3, colour plates IX–XIII)

Already in 1966, it was noticed that some of the trenches in the back part of temple complex 200 produced a high concentration of small finds and sherds. In the south-eastern corner of courtyard 224, a thick layer of ash was observed interspersed with pottery sherds. In room 225 the excavators also found numerous sherds, amongst them sherds of decorated fine ware. Although a closer examination of specific parts of that area was planned, it was never carried out.

Our interest in this area was aroused in 1995 when test trenches in courtyard 224 revealed a 80cm thick layer of ash containing large amounts of sherds of coarse and fine

ware. In 1997 we extended the trench in the north-eastern corner of this courtyard to an area of 5 x 5m. The trench revealed an up to 120cm thick deposit of ash, sandstone rubble and about 25,000 sherds (colour plate IX). Amongst them there were about 3000 painted and stamped fine ware sherds of outstanding artistic and technical quality, which were dated by their style to the 1st cent. AD (colour plates X–XIII). It is possible that this deposit, which goes beyond the trench limits to the south and west, extends as far as the deposits found in the 1960s. If this proves to be true, we probably have here the largest corpus of fine ware ever excavated in the central part of the Meroitic kingdom.

Most of the sherds do not show any trace of use. Some of them show blackening, unintentional colour changes, flaked-off surfaces etc. The ashes, interspersed with sandstone rubble (often with traces of heat discoloration) and burned remains of what appeared to be animals dung mixed with loam, contained virtually no charcoal. It is unlikely, therefore, that the ash comes from a temple fire. It is much more likely to be the ash of a kiln. Thus, it seemed a likely supposition that the deposit belonged to a ceramics workshop. This assumption was confirmed during the course of the excavation. The ground in the area of the deposit was covered with a layer of silt and heaps of clay, which contained small pieces of kaolin and sherds of broken but unfired vessels. The most clear indication, however, was the discovery of stamps used for the decoration of the stamped ware with a flower motif and an Ankh-sign (pl. 3). In addition, our ceramics specialist was able to identify a find of 1966, which was called a 'hand-mill' in the diaries, as a slow turning potter's wheel.

Remains of the kilns have not yet been identified with certainty. However, if the Meroitic potters used simple cylindrical kilns constructed with stone walls and supplied by fuel consisting of cattle or camel dung, comparable to those reported from Lower Nubia (Drost 1967, 236; MacIver 1905, 22ff; Schliemann 1887, 210), or if their kilns were comparable to a type of open screen-kiln of stone slab construction like the one which was found in Nag Baba (Holthoer 1977, 16 [MKC 4], fig. 21), or the probable Meroitic cylindrical mud-brick kiln found in Argin (Adams 1962, 64), we might have an indication of the original position of the kilns. In the sandstone walls 224/226 and 224/N which backed the deposit, there were three areas of about 1m² each, with an up-to-15cm-deep destruction possibly caused by heavy (or prolonged) heat and other traces of fire, like black and reddish discoloration. The large amounts of sandstone rubble found in the deposit might come from these holes or might be the remains of the kiln screens which were possibly dismantled after the firing. The ground in front of these areas, beneath the deposit, did not show any remains of kilns. However, it is not easy to explain these destroyed areas and the quantities of



Plate 3. Stamp for the decoration of fine ware (Find NR. 616–2)

sandstone rubble other than by supposing that they stood in some connection with the kilns. In any case, we may assume that the ceramics workshop and its kilns were in immediate proximity to our deposit.

Even more than ancient Egyptian pottery, Meroitic pottery is a pre-eminent part of the artistic heritage of North-East Africa. This is especially true for the fine ware of the Classical Period. The origin of this fine-ware has been under discussion for a long time, since, in contrast to Lower Nubia, even from large sites of the Meroitic south, like Meroe-City, Musawwarat and Wad ban Naqa, only relatively few sherds have been known. The discovery of the deposit of a ceramics workshop, which functioned inside the Great Enclosure and which was obviously specialising in the production of high-quality temple pottery, can thus be regarded as one of the most spectacular finds of the last decades. It proves finally the long-discussed assumption that the Meroitic fine ware was produced in the centre of the Meroitic empire and that it was not a mere import from Lower Nubia (Adams 1973, 232; Wenig 1978, 94; Adams 1986, 13-14; Török 1988, 203). In view of the still very few archaeological sources concerning Meroitic pottery production, the possibility of investigating a Meroitic potter's workshop systematically is a great opportunity to gather completely new insights into Meroitic pottery production (clay preparation, forming and surface treatment, firing and perhaps even workshop

organisation, relation to the temple's cult and economy, pottery distribution). In addition, the stylistic analysis of the ceramics should prove to be very significant from an art-historical point of view.

Concluding remarks

In the late 1960s, after 10 years of fieldwork, the excavators assumed that Musawwarat es Sufra had not been permanently inhabited, but used only for the celebration of religious festivals. On such occasions Musawwarat attracted many people from all over the country. The courtyards of the Great Enclosure served as meeting-places for the pilgrims (Hintze and Hintze 1970, 50). As a result, it was believed even up to the first seasons of the 1990s that it made little sense to excavate the courtyards.

The recent fieldwork is about to correct this assumption completely. The courtyards of the Great Enclosure contain substantial and significant evidence. The temple garden and its irrigation system show, for example, that the remains of the early building periods are, in these open areas, undisturbed by later building activities, which gives us the possibility of tracing the building history of the Great Enclosure more effectively than by excavating the still preserved temple ruins. In addition, we realise that by looking not only for the architectural remains proper, but also for – in the conventional sense – 'non-architectural' remains, like (plantation) pits, (irrigation) channels, (foundation) trenches, dumps and deposits, we can add much more to our understanding of the function and development of individual parts of the Great Enclosure than by merely attempting to interpret the building remains of the temples. The courtyards mark areas of variable and well definable partial functions of the whole temple complex. In accordance with the changing ideas and needs of the cult, the function of specific areas developed and changed during the history of the Great Enclosure. With the functional changes, the architectural form and the archaeological contents of these areas changed accordingly. The archaeological evidence inside the courtyards reflects, in certain circumstances, the relation between function and form and its development through time better than the preserved remains of buildings like temples, chapels and auxiliary rooms, high-corridors and ramps.

Thus, the large-scale investigation of the areas outside the temple ruins, the 'going down into the courtyards', will give us – and it already has – much more insight into the nature of the Great Enclosure and the mode of function of a Meroitic temple complex than was envisaged at the end of the 1960s. In other words, whereas the earlier fieldwork provided the architectural and historical framework for the study of Musawwarat es Sufra, the recent fieldwork has been able to flesh out the detail of this skeleton.

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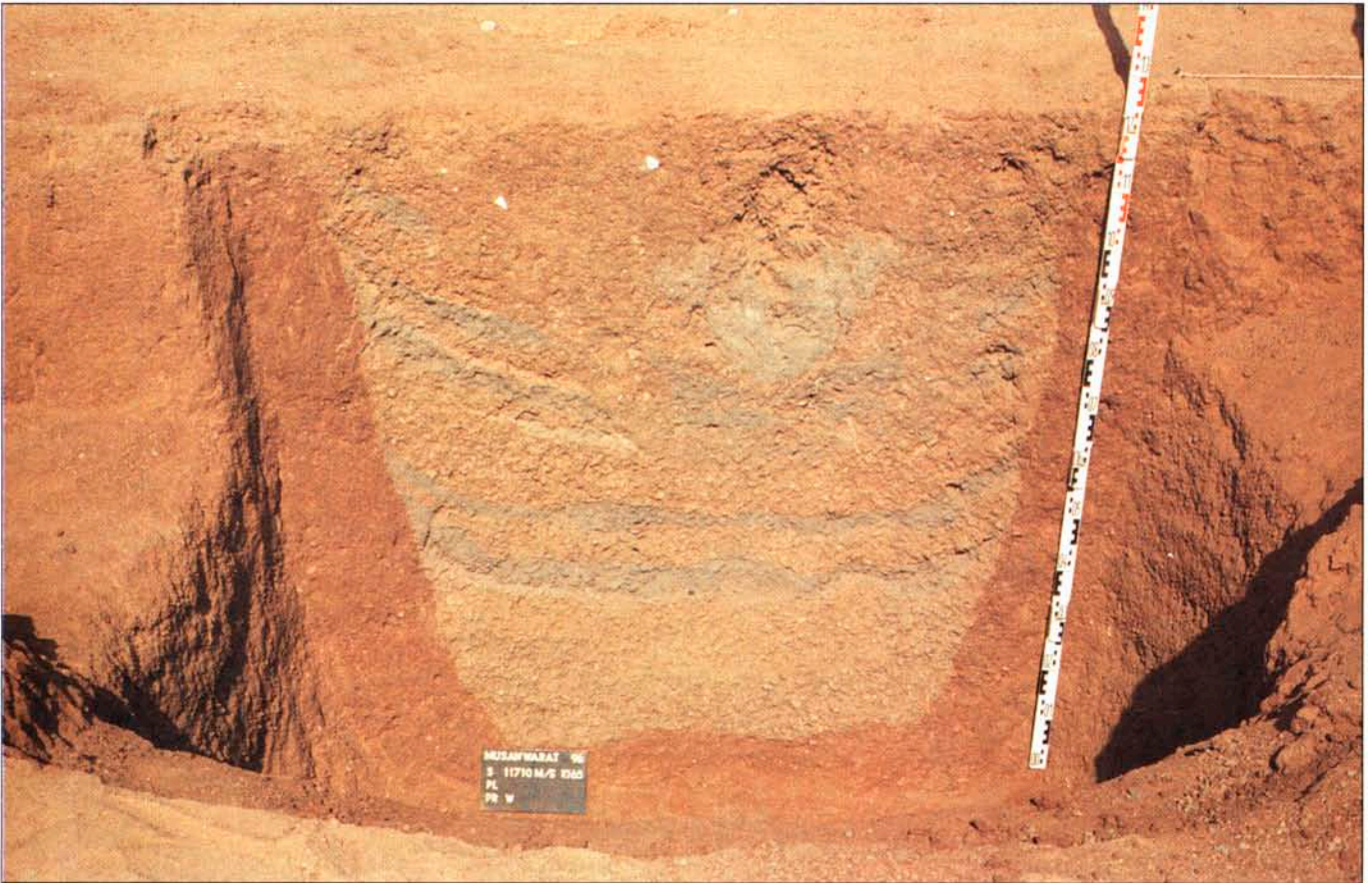


Plate VIII. Musawwarat es Sufra. Vertical cross-section of a plantation pit. (see p. 26)

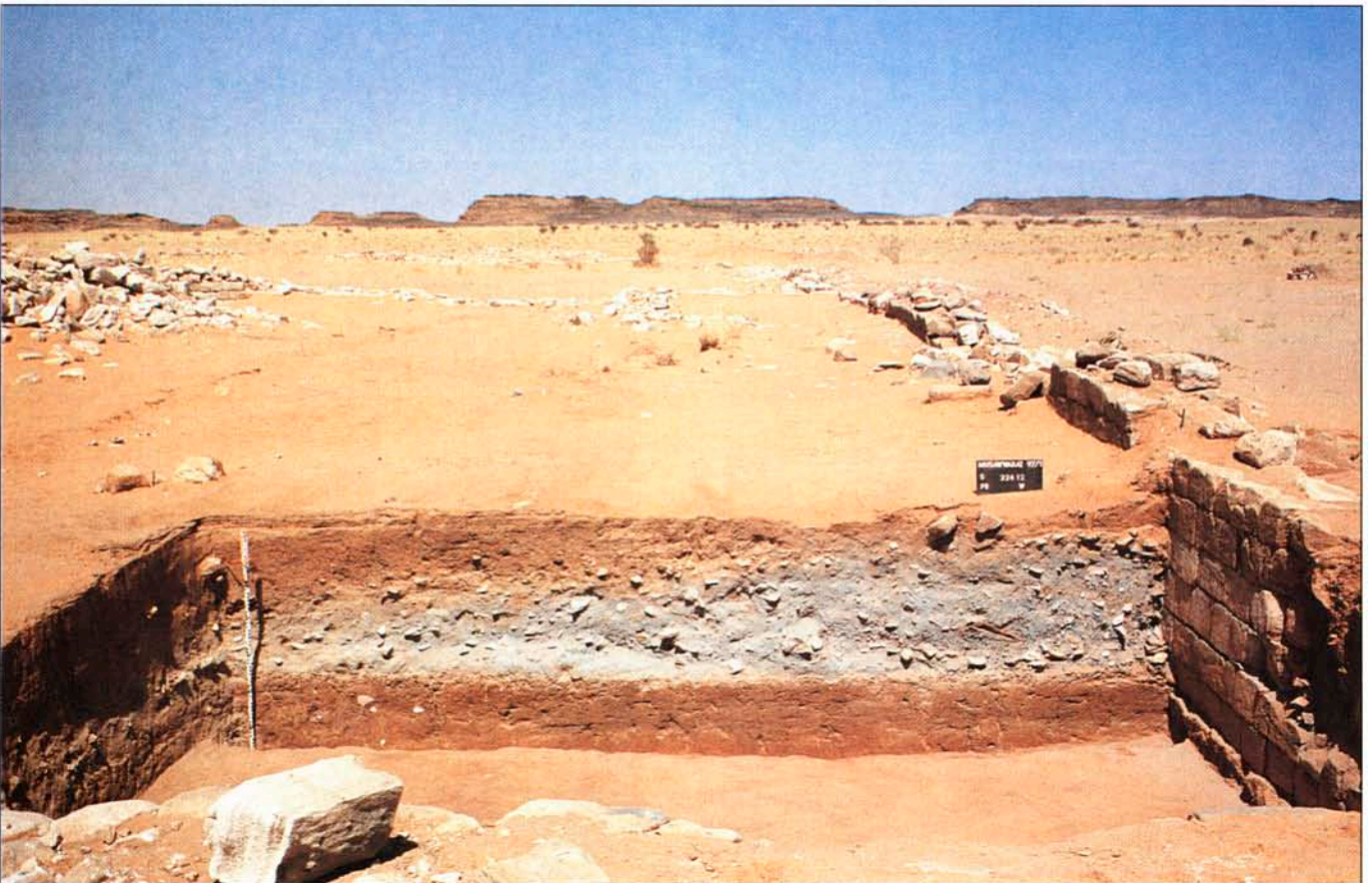


Plate IX. Musawwarat es Sufra. Western section of trench S 224.12. (see p. 27)



Plate X. Musawwarat es Sufra. Sherd of fine ware no. 908, from trench S 224.12.
(see p. 27)



Plate XI. Musawwarat es Sufra. Sherd of fine ware no. 900, from trench S 224.12.
(see p. 27)

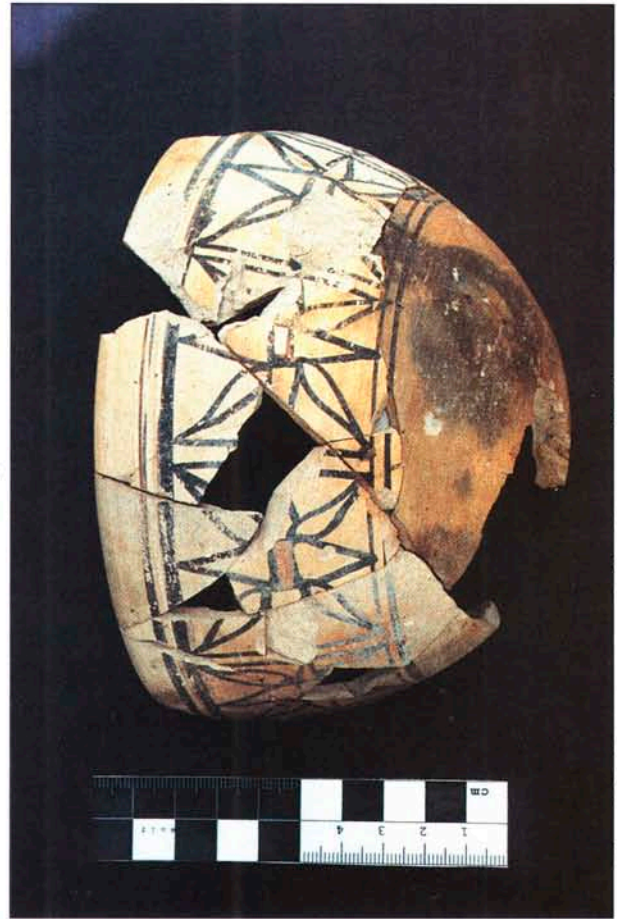


Plate XII. Musawwarat es Sufra. Fine ware bowl, no. 912, from trench S 224.12.
(see p. 27)



Plate XIII. Musawwarat es Sufra. Fine ware cup, no. 853, from trench S 224.12.
(see p. 27)