

■ SUDAN

Archaeological fieldwork at Musawwarat es Sufra, spring 1995

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After many years of interruption, the Humbolt University of Berlin decided to continue excavations at Musawwarat es Sufra, Sudan. With the financial help of the Humboldt University, local conditions were investigated in 1993, and in 1994 the university sponsored the rebuilding of the dig house there. The archeological work, financed by the *Deutsche Forschungsgemeinschaft (DFG)*, started with a preliminary season in the spring of 1995. The campaign lasted from February 5 to March 17. Its main purpose was to prepare for the main seasons, which are scheduled for fall 1995 and spring 1996. The target of investigation is the Great Enclosure, excavations of which were not completed under F. Hintz in the 1960s. The season's activities were concentrated on archaeological preparations including test excavations, examining logistics and conservation work. The latter is financed by the *Sudanarchäologische Gesellschaft zu Berlin (SAG)*. The mission is grateful to the Sudan Antiquities Service for its kind help and assistance as well as to Professor Roccati and the University *La Sapienza* (Rome) for making possible the participation of conservator M. Pittertschatscher.

The staff consisted of Prof. Dr. S. Wenig (project director), Dr. P. Wolf (field director), Dr. D. Eigner (architect), Prof. Dr. K.-H. Priese (for the architectural documentation of the central temple), Mag. A. Lohwasser and F. Tiradritti (excavation supervisors), Mr. Abdel Hay (Antiquities Service Officer), J. Renisch (photogrammeter), Prof. B. Gabriel (palaeoecologist), M. Pittertschatscher (conservator), M. Zeebe and G. Wanning (members of SAG), stud. phil. I. Gerullat and S. Kirchner (archaeological assistants).

Excavations and documentation work in the Great Enclosure (I A)

The area east of the central terrace (complex 100) and the northeastern part of the terrace itself were prepared for documentation. Both areas will be the focus of closer archaeological examination in the coming seasons. In the western part of courtyard 117 test excavations of an area of 75 m² were carried out. These excavations revealed rows of planting pits for trees and/or shrubs (*Baumgruben, Pflanzgruben*). We may therefore conclude that at least the western part of this courtyard functioned as a kind of garden. The orientation of these structures suggests that this plantation belonged to one of the earlier building periods of the Great Enclosure. The "garden" covers an area of at least 100 m². Its remains are the first archaeological evidence of the function of the courtyards of the Great Enclosure.

Prof. Priese documented architectural details of the central terrace which were left unrecorded in the 1960s excavations and which are necessary for the final publication of the Great Enclosure. For the central terrace (complex 100) this documentation work is not nearly finished. The work included small trenches of about 25 m² and survey of the central terrace. The trenches revealed undocumented architectural details of the central temple and terrace.

A completely new survey of the Great Enclosure was considered to be necessary. In preparation, 5 levelling points and 3 fixed points (all in concrete) were established, in order to create a grid. This grid will be oriented to true north. Further preparations included planning areas for storing fallen architectural blocks, the preparation of an appropriate archaeological documentation system and the preparation of a geophysical survey of the courtyards of the Great Enclosure.

The photographic documentation (supported by 1:1 aluminum foil prints) of the graffiti of the Great Enclosure, started by Dr. U. Hintze in 1968, was continued. During this season we were able to complete the graffiti from the Meroitic, "post"-Meroitic, Christian and Islamic periods. A photogrammetric documentation of the standing remains of the Great Enclosure was prepared and planned. Test-recordings of the eastern face of the central terrace were carried out. The main difficulty are the sand dunes and the stone debris, which

cover large parts of the wall faces. The removal of sand dunes was started at the central terrace in complex 100. It will be continued in the coming season to make the photographic work possible during the winter season of 1995/1996.

A palaeoecological survey was begun in the Valley of Musawwarat es Suffra. Other surveys included an examination of the cemetery discovered in 1994 in the Wadi Ma'afar (probably Islamic in date), and the discovery of two further cemeteries to the west of Gebel es Suffra (temporarily labelled III F, II K and II L). These will be documented more carefully during future work. In addition, Mesolithic and/or Neolithic remains were found at the slopes of the gebels surrounding Musawwarat.

Conservation and site protection

A detailed conservation report was drawn up for the Great Enclosure (I A) and the Lion Temple (II C). It covered damage caused by wind and sand erosion, moisture and water soluble salts, rainwater runoff and tourists, as well as proposals for future protection. In addition, samples of stone material were taken to be analysed in European laboratories to learn more about the nature of the damage, and erosion processes. This should help us decide on an appropriate conservation strategy. Within the Great Enclosure, ca. 180 cubic metres of sand dunes were removed from the central terrace and other areas. The sand, accumulated in the last 10 years, is responsible for serious damage to the architectural remains. The sand was removed to areas in the west and north of the Great Enclosure, and was used to build up dikes to prevent rainwater runoff from flooding into the Great Enclosure.

Five highly endangered remains of columns of the portico east of the Central Temple (area 102/103) were walled in by burned bricks and covered with a sand filling in order to be kept in a constant climate and to protect against sand erosion and damage by tourists. Other valuable architectural remains were buried by sand. This will protect the objects until a better solution is found, such as removing the columns to the National Museum in Khartoum and replacing them with copies.

A special scaffold was constructed in order to climb up to the roof of the Lion Temple (II C). Therefore it was possible to document the serious damage to the roof and to begin protecting it for the first time since 1971. This consisted of a temporary repair of the roof using a metal construction and zinc sheets, to prevent entry of rain water. Areas of soil eroded by water action at the pylons and western edges of the temple, were refilled to keep the rainwater away. The fence around the Lion Temple and its entrance door were repaired. At the northeastern side, a fence of reed was attached at a length of about 25 meters. This was done to test if such a shelter protects the temple against wind and sand. Inside the Lion Temple, the wind blown dust accumulated since 1971 was removed from the inner walls and bottom.

Sand dunes inside and around the small temple II A were removed and a protection building (of metal construction with zinc roof and metal fence) was constructed to keep the temple in a more constant climate. Relief blocks laying scattered around the temple were stored inside. The shelter construction should reduce other causes of damage.

A plantation of mesquite was discussed and planned in detail with the Forestry Department of Shendi. It would protect the Great Enclosure (I A) with a half circle of 200 plants at its northeastern side (50-70 meters away), the Lion Temple (II C) with 100 plants inside the fence at its northern and eastern side, and the temple II A with 100 plants in a half circle 20-30 meters to the northeast. An agreement was made, where the Forestry Department of Shendi will plant the mesquite in the summer of 1995 and water the plants for 2 months. The SAG will pay the costs of planting and watering, as well as for two guards to protect the plants against goats and other animals.