The Necropolis of Dahshur
Eighth Excavation Report Autumn 2011 and Spring 2012
German Archaeological Institute/Free University of Berlin

Nicole Alexanian, Felix Arnold, Dirk Blaschta, Josuah Pinke, Stephan Johannes Seidlmayer

Contents
Abstract
Introduction
The excavation of the lower causeway and harbour basin of the Bent Pyramid
The excavation of the limestone sledgeway
The temple of the Bent Pyramid
Burial equipment from the cemetery of the Middle Kingdom west of the pyramid of Amenemhat II

Abstract
In autumn 2011 and spring 2012 the work of the German Archaeological Institute, Cairo and the Free University of Berlin at Dahshur was continued with the excavation of the lower mudbrick causeway and harbour of the Bent Pyramid. It became clear that the lower causeway has a total length of 148 m and leads to a large U-shaped area measuring 145 x 95 m which we interpret as harbour basin. The upper part of the lower causeway was already excavated by Ahmed Fakhry in 1951-55; we re-documented the upper 23 m in detail. Surprisingly a pedestrian underpass built from limestone blocks was discovered below the lower causeway at a distance of only 3 m from the temple enclosure wall. Furthermore the eastern end of the lower causeway could be excavated to a length of 38 m. The architectural analysis revealed different building phases until the end of the Old Kingdom defined by alterations and reparations. A small entrance was leading from the harbour basin to the causeway. This entrance could originally be closed by a wooden door. A massive western harbour wall was erected perpendicular to the causeway and was excavated to a length of 12 m. The excavation of the New Kingdom limestone sledgeway was continued; twenty additional relief blocks which originally belonged to the temple of the Bent Pyramid were discovered here. Detailed measurements were undertaken in the lower temple of the Bent Pyramid. The measurements and a study of the newly discovered relief fragments shall result in a 3D-model of the temple incorporating its relief decoration.
Introduction

The work of the team of the German Archaeological Institute (Cairo) and the Free University of Berlin at Dahshur was continued from September, 12th until November, 30th 2011 in the central magazine of Dahshur with the documentation of pottery and finds from previous seasons. From February, 8th until April, 28th 2012 documentation and excavation of the lower temple and lower causeway of the Bent Pyramid were continued and documentation of pottery and finds was again carried out in the central magazine of Dahshur.

The excavation of the lower causeway and harbour basin of the Bent Pyramid

During the spring season 2012 we continued the work at the lower mudbrick causeway of the Bent Pyramid which we already began in autumn 2009 and spring 2010 (Fig. 1).


2 The work is funded by the German Archaeological Institute (Cairo) and the German Research Foundation. The authors thank these institutions for their support. We are grateful for the support of the Supreme Council of Antiquities, represented by the inspectors Mohammed Omar Abd el-Tawab (autumn 2011) and Adel Atiya Abd el-Wahid and Wael Gamal Mahmud Mohammed (spring 2012), the directors of Dahshur Nasr Ramadan and Mohammed Youssif and the directors of Saqqarah Osama Shimy and Kamal Wahid and the Minister of Antiquities Dr Mohammed Ibrahim for their support. We also wish to thank all team members for their work. Members of the mission in autumn 2011 were Nicole Alexanian, Dirk Blaschta, Kadriye Güler, Martin Mayrhofer, Sandra Müller, Ulrike Pauly, Josuah Pinke, Justin Schmidt, Katharina Schröder, Stephan J. Seidlmayer, Kira Zumkley. The members of the mission in spring 2012 were Nicole Alexanian, Felix Arnold, Dirk Blaschta, Audrey Eller, Tobias Gutmann, Andrea Kahlbacher, Arnold Kreisel, Martin Mayrhofer, Sandra Müller, Erico Peintner, Josuah Pinke, Nicole Richter, Stephan J. Seidlmayer, David Swiech, Alexandra Winkels, Peter Windszus.
Fig. 1: Temple, lower causeway and harbour (?) basin of the Bent Pyramid at Dahshur (DAIKairo, AEGARON 0073 after H. Ricke, Ahmed Fakhry (1951-1955))

Fig. 2: Lower temple of the Bent Pyramid, Dahshur (AEGARON 0070 after H. Ricke, Ahmed Fakhry (1951-1955))
Firstly the upper part of the lower causeway where it reaches the valley temple was uncovered (Pl. 1). This area was already excavated by Ahmed Fakhry (Fig. 2). We recleaned the first 23 m of the causeway and produced a detailed architectural plan. In this area the causeway is preserved to a maximum height of only about 50 cm. The causeway has massive mudbrick walls with an original width of about 0.70 m. The walls were strengthened later in order to roof the inner part with a mudbrick vault. The lower causeway leads into the temple through an anteroom of about 13 m in length. The original entrance to the temple was blocked later. These details were more or less clear from Fakhry’s excavation.

Interestingly a pedestrian underpass was discovered below the lower causeway at a distance of only 3 m from the temple enclosure wall (Pl. 1). The stone walls were already recorded by Ahmed Fakhry and H. Ricke in their architectural plan (Fig. 2), but not understood in their function. The walls of the underpass were built from large limestone blocks, the roof was constructed as a mudbrick vault (Pl. 2). Undercrossings were quite common for causeways. We find them at Giza in

3 Ahmed Fakhry, *The Monuments of Sneferu at Dahshur I, The Bent Pyramid* (Cairo, 1959) 113-114, Fig. 62.
4 Ahmed Fakhry, op. cit, Fig. 62.
5 O. T. Rostem, „Bridges in Ancient Egypt with a Report on a newly excavated Bridge from the Old Kingdom, Giza“,
front of the valley temple of Khafre and under the causeway of Khafre’s complex\textsuperscript{6} and to the east of the valley temple of Amenemhat III\textsuperscript{7} and Senwosret III\textsuperscript{8} at Dahshur. The tunnels enabled pedestrians to avoid a long way round. A second approach from mudbrick is situated to the south of the lower causeway. It was presumably built in the Middle Kingdom when the original causeway was already completely covered by sand and was no longer in use.

Secondly we enlarged the existing excavation trench eastwards to an area measuring 45 x 20 x 5 m, where we were able to unearth the lower end and entrance of the lower causeway (Fig. 1, Pl. 3). It became clear that the causeway has an overall length of 148 m. In the time of King Sneferu it was open and was defined by two lateral mudbrick walls which originally had a total height of only 2.10 m (4 cubits). Later the walls were built higher, but the causeway was still open. Lateron the

\textsuperscript{6} Selim Hassan, \textit{Excavations at Giza} VI.3. (Cairo, 1950) map frontispice; Zahi Hawass, \textit{Secrets from the Sand} (Cairo, 2003) 103.

\textsuperscript{7} J. de Morgan, \textit{Fouilles a Dahchour 1894-95} (Vienne, 1903) 99-100, Fig. 144; Di. Arnold, R. Stadelmann, „Dahschur. Zweiter Grabungsbericht“, in: \textit{MDAIK} 33 (1977) 16, Abb. 1, Taf. 1a; Di. Arnold, \textit{Der Pyramidenbezirk des Königs Amenemhet III. in Dahschur}, Band I, \textit{Die Pyramide}, AV 53 (Mainz, 1987) Taf. 36.

\textsuperscript{8} G. Jéquier, Rapport préliminaire sur les fouilles exécutées en 1924-1925 dans la partie méridionale de la nécropole memphite", in: \textit{ASAE} 25 (1925) 58-61, Fig. 1
causeway was closed by a mudbrick vault\(^9\). The alteration to a vaulted causeway can be dated to the 6\(^{th}\) Dynasty, because pottery sherds of the 6\(^{th}\) Dynasty were found between the mudbricks in the vault\(^10\). The lower causeway ends in a large U-shaped area measuring 145 x 95 m which we interpret as harbour basin.

We unearthed the entrance of the lower causeway where it joins the western walls of the harbour basin. The doorway measures 1.40 m in width and was originally closed by a wooden door. The western harbour wall is built perpendicular to the lower causeway and was excavated to a length of 11.70 m. The wall is massive and has a width of 1.60 m. The original floor level could not be reached yet because we were facing ground water. We intend to continue the excavation in the future with pumps. It would be important to know whether the basin is equipped with a terrace around the basin as it is the case at the harbour basin to the east of the complex of Queen Khentkaus recently excavated by M. Lehner at Giza\(^11\). The basin of Queen Khentkaus measures 37.20 m (east-

\(^9\) The only parallel for a vaulted mudbrick causeway is the causeway of the Mastaba el-Faraun of King Shepseskaf at Saqqarah-South (G. Jéquier, Le Mastabat Faraoun, Fouilles à Saqqarah (le Caire, 1928) 19-21, pl. X).


west) and is equipped with ascending ramps and staircases. The basin at Giza has a maximum depth of 6 m, the lowest level in the basin is 11.37 m asl which is more than a meter deeper than the estimates for the Old Kingdom floodplain at Giza. The harbour at Dahshur is the oldest natural harbour of a pyramid complex.

In the reign of King Snefru the elements of pyramid complexes were not yet canonical and architects experimented how to build a pyramid and how to design the approach towards the pyramid. Therefore the new excavation results are of special importance to understand how pyramid complexes developed in Ancient Egypt.

The excavation of the limestone sledge-way

The excavation of the New Kingdom limestone sledge-way discovered in autumn 2009 was continued (Fig. 3). This sledge-way was built in the early Ramesside Period when the valley temple of the Bent Pyramid was dismantled. It was used to transport the heavy limestone blocks from the temple to the cultivated area. In 2009 and 2010 we already excavated 62 m of the sledge-way and discovered about 50 decorated relief fragments which originally belonged to the temple and were reused to build the transport-way. Now we extended our excavations to the west and east. To the west the sledge-way ended after 8.50 m. To the east we unearthed 22.90 further meters of the sledge-way. Until now we uncovered 93.40 m. It is clear, however, that the transport-way continues eastwards. We discovered about 20 additional relief fragments from the temple which were reused as pavement in the transport-way. Two newly discovered relief fragments show the flagellum of the king and most probably belong to a representation of the enthroned king during the sed-festival (Pl. 4). Comparable fragments were already found by Ahmed Fakhry who assumed that the representations formed part of the pillars. Further relief fragments show a falcon, inscriptions and parts of the kings name, body and insignia. Additionally fragments from a htp- offering table and stelae which were deposited in the temple in the Middle and New Kingdom were found.

---

12 A. Fakhry, The Monuments of Sneferu at Dahshur: The Valley Temple, Part I, The Temple Reliefs (Cairo, 1961) Fig. 72, 75, 78, 111, 115.
The temple along the causeway of the Bent Pyramid

F. Arnold began an architectural survey of the temple at the causeway of the Bent Pyramid. The newly discovered relief fragments provide a fresh view and additional information for the understanding of the decoration program of the temple. The aim of the survey was therefore to get a reliable basis for the reconstruction of the temple decoration. Aside from a ground plan, a large number of sections and elevations were drawn.

The detailed re-examination of the preserved remains of the temple lead to a number of new observations on the design and execution of the temple structure. Surprising is, for example, the excessive care taken with the foundation of the monolithic pillars and the careless construction and levelling of the foundations for the temple walls. Between the north-west and north-east corner of
the temple a difference of 40 cm in height may thus be observed. On a large number of blocks painted control notes were found, supplementing those already documented by R. Stadelmann. They not only confirm the dating of the building into the year of the 15th census (presumably the 29th regnal year of Snefru), but also provide new information on the logistics of the building site. The most interesting observations pertain to the building history of the temple, however. Thus the brick building discovered by A. Fakhry north of the temple is much older than previously thought and must actually have existed even before the temple was built. Not only is its floor level lower than that of the temple. The white-washed floor surrounding the brick building was actually cut by the foundation trench of the stone temple. At the present state of investigation, the following construction phases may be differentiated, presumably all within the reign of king Snefru:

Phase 1: the northern brick building, possibly contemporary with the first phase of the Bent pyramid (year of the 8th census).
Phase 2: the stone temple, contemporary with the Red pyramid (year of the 15th census).
Phase 3: the upper causeway built of stone, connecting the temple with the Bent Pyramid and thus altering the orientation of its access from south to west.
Phase 4: the lower causeway built of brick, connecting the temple with the harbour basin in the valley.

An essential question for next season will be to determine the purpose of the northern brick building. The bent entrance at the southern end of its east façade suggests that it may have been intended as a ritual palace like the structures in the “funerary” enclosures at Abydos or like the so-called “temple T” of the Djoser complex. The brick building may in fact turn out to be a link between the Early Dynastic enclosures at Abydos and the innermost rooms of the mortuary temples of the Old Kingdom.

Burial equipment from the cemetery of the Middle Kingdom west of the pyramid of Amenemhat II
Due to security reasons the work in the Middle Kingdom necropolis to the west of the pyramid of Amenemhat II could not be continued. We only documented the architectural plan of three shafts which were excavated by tomb robbers in 2011 and 2012.

14 For the latest bibliography see L. Bestock, The Development of Royal Funerary Cult at Abydos. Two Funerary Enclosures from the Reign of Aha, Menes 6 (Wiesbaden, 2009).
15 J.-Ph. Lauer, La pyramide à degrés. L'architecture (le Caire, 1936) 145-152, Taf. 68-70; H. Ricke, Bemerkungen zur ägyptischen Baukunst des Alten Reiches, BAB/4 (Zürich, 1944) 89-96, Taf. 3.
The documentation of the small finds and pottery of the well equipped shaft 5P12-1 could be finished by J. Pinke\textsuperscript{16}. In the burial chamber mainly miniature pottery was found, about 80 miniature plates, about 20 small carinated jars with a red coating and about 30 other various miniature forms (Fig. 4). Luckily we found not only funerary pottery but also types of pottery in everyday use which help to date the tomb exactly. The globular jar with short neck Z 487 finds parallels in the time of Amenemhat II and the first half of the 12\textsuperscript{th} Dynasty\textsuperscript{17}, the thin-walled and red coated hemispherical cup Z 1453 has an vessel index of 190-200 and belongs to the middle of the 12\textsuperscript{th} Dynasty.\textsuperscript{18}

\textsuperscript{17} B. Bader, \textit{Tell el-Dab’a XIII. Typologie und Chronologie der Mergel C-Ton Keramik. Materialien zum Binnenhandel des Mittleren Reiches und der Zweiten Zwischenzeit, UÖAI 22} (Wien, 2001) 108-120, Abb. 22m.