



# Old Kingdom, New Perspectives

Egyptian Art and Archaeology

2750–2150 BC

edited by

Nigel Strudwick and Helen Strudwick

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## Foreword

There can be no academic subject for which the general public has such an inexhaustible appetite as Egyptology, and no period more so than the age of the pyramids. But the popular writings in this area are notoriously variable. While there is no shortage of reliable and accessible surveys by leading scholars in the field, neither does one have to look far on book lists to find an abundance of 'pyramidology' and other nonsense which also finds a wide audience. It was therefore a very welcome opportunity that arose when Helen Strudwick proposed that the 2009 Old Kingdom Art and Archaeology conference be held at the Fitzwilliam Museum in Cambridge so as to coincide with our annual Glanville Lecture on Egyptology, thus bringing the fruits of recent excavation and research by leading scholars to a wide general audience. The resulting event, held on 20–23 May 2009, consisted of a three-day meeting of specialist researchers, followed by a day of talks by some of the foremost experts in the Old Kingdom, to which the public was also invited, all culminating that evening in the Glanville Lecture delivered by Dr Jaromir Malek on 'A city on the move: Egypt's capital in the Old Kingdom'. This volume publishes all but three of the twenty-seven papers presented at the conference, plus one additional offering.

The Fitzwilliam Museum is fortunate to have one of the most important collections of Egyptian antiquities in the UK and thus provides a very appropriate setting for the OKAA conference. The earliest Egyptian object to arrive—a very fine Third Intermediate Period coffin

set—was given in 1822, only six years after the bequest of Viscount Fitzwilliam created the museum, and a quarter century before the building erected to house its collections first opened its doors. Since then the Museum's Egyptian collection has grown to nearly 17,000 objects, of which some one thousand are on display. The Egyptian galleries were refurbished in 2006 and remain the most popular in the museum.

Stephen Glanville, after whom the lecture is named, was Professor of Egyptology at Cambridge (1946–1956), as well as being Chairman of the Fitzwilliam's Syndicate and Honorary Keeper of Antiquities. Glanville saw it as essential that the Museum's Egyptian collections were actively used in teaching—as is still the case today—and that they continue to grow through acquisition. His commitment to engaging the public in the fascinating discoveries of professional Egyptologists has been continued by the Museum by the holding of a lecture bearing his name since 1977. We were delighted that Jaromir Malek accepted the invitation to give the 2009 lecture; and that so many distinguished scholars of Old Kingdom Egypt were able to attend the conference with which it was paired.

Special thanks are due to Helen Strudwick, at the time Senior Assistant Keeper, Antiquities, and Nigel Strudwick, the organisers of the conference, who have also edited the papers published here.

Timothy Potts  
Director  
The Fitzwilliam Museum  
Cambridge



# Introduction

This volume presents twenty-five of the twenty-seven papers presented at the 2009 Conference Old Kingdom Art and Archaeology, generously hosted by the Fitzwilliam Museum in Cambridge. The history of these Old Kingdom meetings was admirably summarised by Miroslav Bárta in his Foreword to the proceedings of the 2004 conference, held in Prague, and it would be superfluous to repeat it here. The contents of the present volume show the wide range of subjects which this research group now embraces, from the Pyramid Texts through site reports, from the analysis of statue orientation to attempts to study the spatial arrangement of Old Kingdom cemeteries. Some of the papers are substantially the same as those presented at the meeting, but the editors have encouraged authors, where they feel it is necessary, to expand upon their ideas and to take them beyond the limited range of material which can be presented in a twenty-minute talk. One further paper which could not be presented at the conference is also included.

We were delighted to welcome to Cambridge colleagues from all over the Egyptological world, and they fairly represent where the Old Kingdom is studied most. We are delighted to be able to include the paper from Abdou el-Kerety (better known to his friends and colleagues as Hatem); visa problems meant that he was regrettably unable to be present at the conference, despite our best efforts with the UK authorities, but his contribution was read and appreciated in his absence. The paper of Gabriele Pieke could not be presented at the conference but we are happy to be able to include it. The longest paper presented here is by Mark Lehner and his co-authors and is a report on progress of his excavations at Giza; this has turned into a

substantial publication and analysis and it is a great pleasure to be able to include it in this volume.

The final day of the conference was open to the public, focusing more particularly on papers relating to the archaeology and monuments of the Memphite region. This, and indeed the conference as a whole, formed a precursor to the thirty-third Stephen Glanville Memorial Lecture. This annual event, hosted by the Fitzwilliam Museum, has been an important fixture in the Cambridge and UK Egyptological calendar since 1977. In 2009, the Lecture was given by Dr Jaromir Malek on the subject 'A city on the move: Egypt's capital in the Old Kingdom'.

The editors would like to thank many persons without whose help and assistance the 2009 Old Kingdom Art and Archaeology meeting could not have taken place. First and foremost, we are deeply indebted to Dr Timothy Potts and all the staff of the Fitzwilliam Museum for enabling the events to take place so successfully, and for ensuring the efficient operation of everything from computer projectors through to the teas and coffees which sustained us. We also thank our colleagues whose enlightening papers and discussion made the meeting the success it was, and we acknowledge their efforts in enabling the completion of the manuscript just over two years since the meeting.

We are delighted to acknowledge the help and assistance offered by Oxbow Books in taking this publication into their archaeological series. To our editor, Clare Litt, and the head of production, Val Lamb, go our profound thanks for their advice and support.

Nigel Strudwick  
Helen Strudwick



## Recent work in the tomb of Nebkauhor at Saqqara

*Abdou el-Kerety*

The tomb of Nebkauhor (Idu)<sup>1</sup> is located in Saqqara, in the area north of the causeway of Unas and south of the enclosure wall of the Step Pyramid of king Djoser, west of the tomb of Niankhba, the east of the rock-cut tomb of Hermeru. This tomb is dated to the end of the fifth dynasty and the beginning of the sixth dynasty.<sup>2</sup>

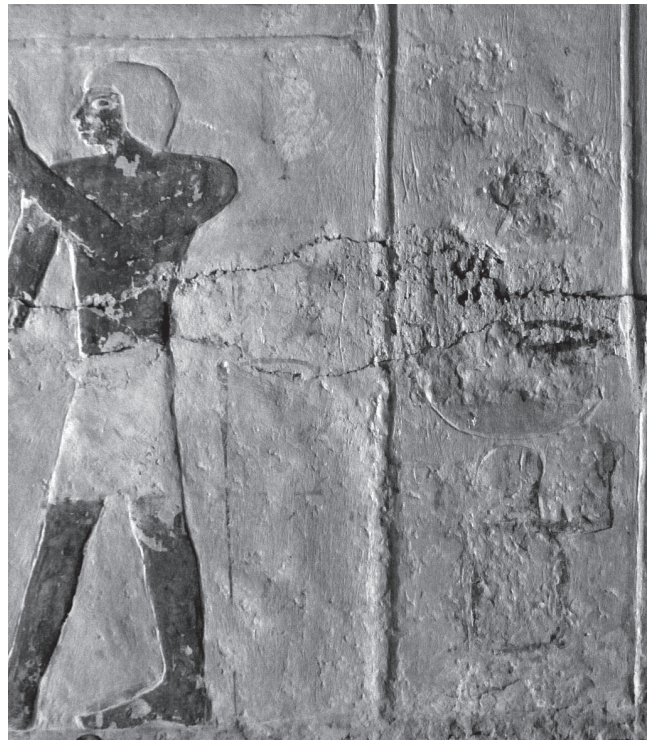
### *The history of the tomb's discovery and first publication*

The tomb of Nebkauhor was excavated by Selim Hassan in mid-October 1937, during the 1937–1938 excavation season at Saqqara of the Egyptian Antiquities Service. A brief report about the main results of the excavation was published by Selim Hassan and re-edited by Zaki Iskander in 1975.<sup>3</sup>

### *Reasons for re-publishing the tomb of Nebkauhor*

It is important to state why I chose the tomb of Nebkauhor for intensive study instead of one of the other tombs in Saqqara, such as Khentika, Ty, or Neferherentah. The following are some answers to this question.

- a. There is a severe lack of detailed information in the original publication of the tomb of Nebkauhor. In his description of the northern wall in the pillared hall, Hassan<sup>4</sup> failed to describe several scenes and texts which I shall evaluate in my future study on the tomb of Nebkauhor.



*Fig. 1: The northern wall in the offering room*

<sup>1</sup> PM III<sup>2</sup>, 627–629.

<sup>2</sup> S. Hassan, 'Excavations at Saqqara 1937–1938', *ASAE* 38 (1938), 512–519.

<sup>3</sup> Hassan, *ASAE* 38 (1938), 512–519; S. Hassan (ed. Z. Iskander), *The mastaba of Neb-Kaw-Her* (Cairo 1975).

<sup>4</sup> *Neb-Kaw-Her*, 8–44.



*Fig. 2: The façade*



*Fig. 3: The first pillar*

- b. The tomb owner was the king's eldest son of his body, and a vizier; therefore he was a man of considerable importance.
- c. The tomb is also one of the last major tombs at Saqqara still to be researched and to be published thoroughly.
- d. There are many errors in the original publication of the tomb. Moreover, there are many errors in Hassan's translation of the hieroglyphic texts, especially the biography.<sup>5</sup>
- e. The tomb occupies a special place in the history of Old Kingdom politics, and its art and architecture dates to the transitional period between the end of the fifth dynasty and the beginning of the Sixth. Akhethotep<sup>6</sup> (the original owner, and also the one for whom most of the tomb's decoration was carved) post-dates well-known tomb owners such as Ptahshepses at Abusir, and Ty, as well as Niankhkhnum and Khnumhotep, at Saqqara. He also predates well-known sixth dynasty tomb owners such as Kagemni, Mereruka and Ankhmahor.

### *Tomb owner*

Nebkauhor (Idu)'s titles included those of king's eldest son of his body,<sup>7</sup> hereditary prince,<sup>8</sup> count,<sup>9</sup> overseer of the Scribes of the king's documents,<sup>10</sup> chief justice and vizier,<sup>11</sup> inspector of priests of the pyramid of Unas<sup>12</sup> and scribe of a phyle,<sup>13</sup> amongst others. It is interesting to point out that the original tomb owner, Akhethotep (Hemi), apparently held the same titles as Nebkauhor (Idu), with the exception of the title of 'king's eldest son of his body'.

### *The architecture of the superstructure and substructure*

The tomb is a very large one measuring 34.0 × 18.60 m. The existing height is 4.20 m. The tomb consists of: a court; a pillared hall; a *serdab*; an ante-chamber; a mortuary chapel; an offering room; a burial chamber; and storerooms.

<sup>5</sup> H. Goedicke, *Die privaten Rechtsinschriften aus dem alten Reich*, (Vienna, 1970), 81–103.

<sup>6</sup> H. Ranke, *Die altägyptischen Personennamen I* (Glückstadt 1935–1977), 3.

<sup>7</sup> N. Strudwick, 'Notes on the mastaba of *šbt-ḥtp; ḥmi* and *Nb-kꜣw-ḥr; idw* at Saqqara', *GM* 56 (1982), 89–94; B. Schmitz, *Untersuchungen zum title *ss-njswt 'Königsson'** (Habelts Dissertationsdrucke, Reihe Ägyptologie 2; Bonn 1976).

<sup>8</sup> D. Jones, *An Index of Ancient Egyptian Titles, Epithets and phrases of the Old Kingdom* (2 vols, BAR International Series 866; Oxford 2000), I 315 (1157).

<sup>9</sup> Jones, *Index I*, 496 (1858).

<sup>10</sup> Jones, *Index I*, 209 (780).

<sup>11</sup> Jones, *Index II*, 1000 (3706).

<sup>12</sup> Jones, *Index II*, 932 (3438).

<sup>13</sup> A. M. Roth, *Egyptian Phyles in the Old Kingdom. The Evolution of a System of Social Organization* (SAOC 48; Chicago 1991), 100–105.

### *The decoration*

#### **1. The façade**

The original facade faces south, and still shows reliefs representing the first owner of the mastaba. Akhethotep is standing and facing east. Most of his figure is missing. Only the right hand, holding a handkerchief, and parts of his trunk and feet are still apparent. In front of the feet, only a few fragmentary signs remain of the horizontal row of hieroglyphs (Fig. 2).

#### **2. The removal of the name of the original tomb owner and its substitution with the name Nebkauhor**

The tomb shows several examples of Nebkauhor erasing the name and the titles of the original tomb owner Akhethotep and substituting it with his own name.

- a. The first pillar: we can observe clearly how Nebkauhor removed the name of Akhethotep, and substituted it with his name<sup>14</sup> (Fig. 3).
- b. The northern wall in the offering room: we notice the name of Nebkauhor written with red ink as a preparation to carving it later (Fig. 1).
- c. The limestone sarcophagus in the burial chamber: even here the new tomb owner has not shown any scruples about erasing the name of the original owner of the mastaba, and substituting it with his own<sup>15</sup> (Fig. 4).

#### **3. The biographical text**

This biography decorated the western wall of the pillared hall. This inscription consists of two parts: the right-hand one, reading from left to right, and the left-hand one. The latter is a deed of mortuary endowment, and reads from right to left.<sup>16</sup> (Fig. 5)]

#### **4. The scene of cooking of geese**

This scene covers the northern wall of the pillared hall and shows a seated man. A male cook busily fans the embers in a brazier over which he bends. Upon the brazier is a large ceramic pot in which three geese<sup>17</sup> are being cooked (Fig. 7).<sup>18</sup> It is noteworthy that nowadays in the villages of Upper and Lower Egypt this method of cooking is still practised, not because no modern method for cooking is available, but because it is considered to be healthy. The majority of Egyptian women in Upper Egypt prefer to use ceramic pots instead of stone pots, as the former are considered healthier than the latter (Fig. 6).

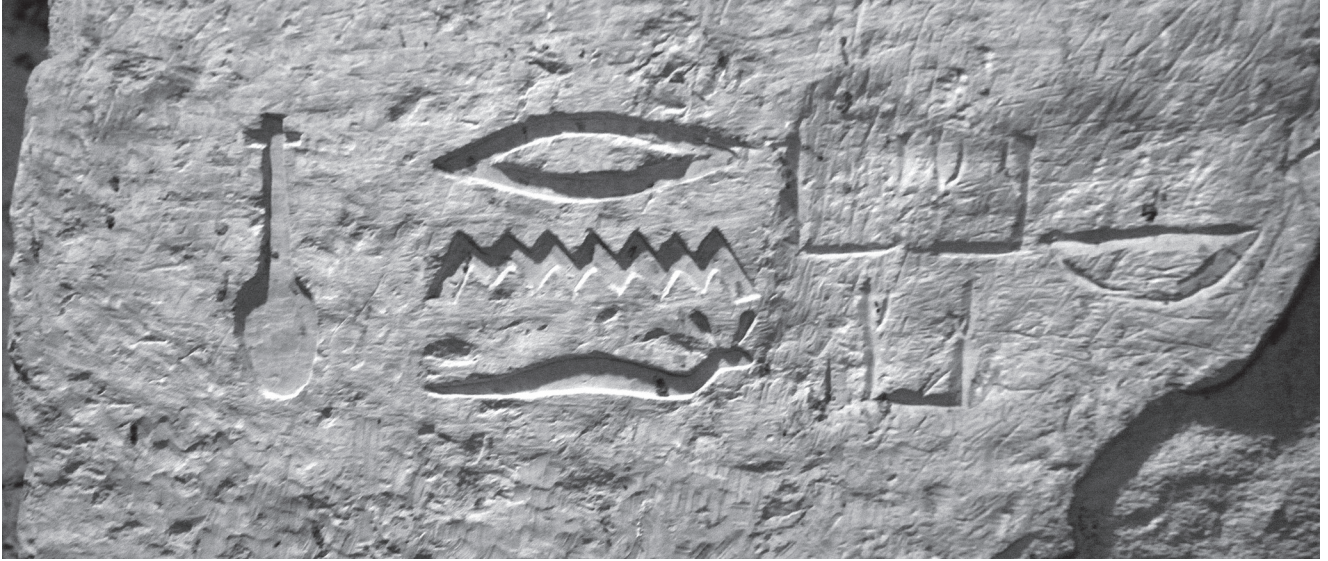
<sup>14</sup> Hassan, *ASAE* 38 (1938), 512.

<sup>15</sup> Hassan, *ASAE* 38 (1938), 519.

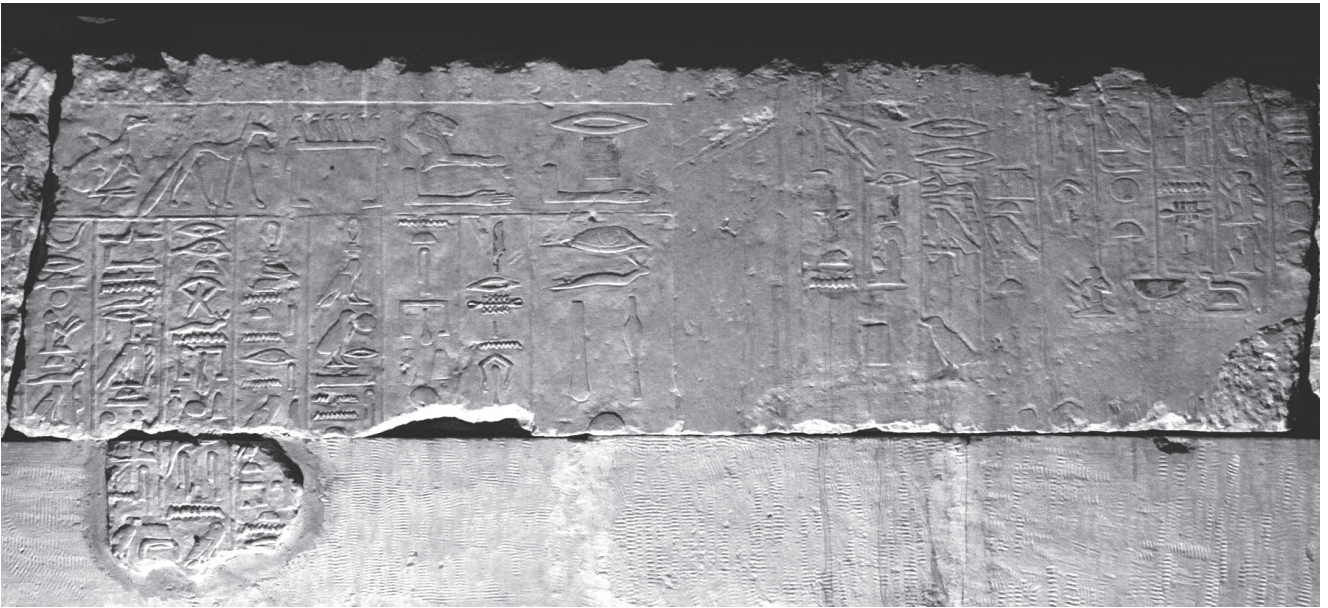
<sup>16</sup> Hassan, *Neb-Kaw-Her*, 39–43; Goedicke, *Die privaten Rechtsinschriften*, 81–103; N. C. Strudwick, *Texts from the Pyramid Age* (Atlanta 2005), 187–188.

<sup>17</sup> P. F. Houlihan, *The Birds of Ancient Egypt* (American University in Cairo, 1988), 57.

<sup>18</sup> U. Verhoeven, *Grillen, Kochen, Backen im Alltag und im Ritual Altägyptens. Ein Lexikographischer Beitrag* (Rites Egyptiens 5; Bruxelles, 1984), 110–116.



*Fig. 4: The limestone sarcophagus*



*Fig. 5: The autobiographical text*



*Fig. 6: Large ceramic pot on a brazier*



Fig. 7: *The scene of cooking of geese*

### 5. The scene of offering bearers

This scene decorated the north wall of the pillared hall. It shows offering bearers carrying different kinds of items,<sup>19</sup> such as a loaf of bread, vegetables, meat and pottery vessels. It is similar to what occurs today in modern life in the villages of Upper and Lower Egypt. When a person dies, all his neighbours bring his family different kinds of food to help and console them. Yet the food on the tomb walls is brought for the deceased, not for his family. This consists of meat, birds, fish, vegetables, bread and different kinds of fruit.

The modern family goes and visits the cemetery during particular feasts and religious occasions to honour the memory of the deceased. The women of the family

of the deceased carry baskets which are piled with food, fruit, bread loaves and cakes. This is distributed to people, who recite the Bible or the holy Qur'an for the soul of the deceased. This ritual is known nowadays as 'mercy' or *el-rahma* in modern Egyptian, Arabic (Fig. 8, Fig. 9, Fig. 10 Fig. 11, Fig. 12, Fig. 13).

### 6. The offering room

One of the most intriguing depictions in this chapel is that in which an offering bearer holds a lily in his left hand – at least according to the description of the scene by Selim Hassan.<sup>20</sup> One could, however, suggest that the offering bearer in this scene carries a plant that rather looks like artichoke and not a lily (Fig. 14). In this respect it is worthwhile to mention a block in the British Museum, EA 69667, 'Block depicting an official seated behind an offering table.

<sup>19</sup> cf A. Moussa and H. Altenmüller, *The tomb of Nefer and Ka-hay* (AV 5; Mainz am Rhein 1971), 31, pl. 25b.

<sup>20</sup> Hassan, *Neb-Kaw-Her*, 49.



*Fig. 8: The offering bearers*

*Fig. 9: Ancient Egyptian offering bearer*



He wears a necklace with Hathor pendant and extends a stylized bouquet or plant<sup>21</sup> (Fig. 15). One can suggest that the tomb owner in this scene holds an artichoke because the stem of this plant is tall and its leaves scaly, contrary to the lily, which has a hollow stem and broad leaves. Perhaps the ancient Egyptians used the artichoke as food or for a medical or religious purpose.

These questions I shall try to explain in my publication of the tomb of Nebkauhor.

<sup>21</sup> G.T. Martin, *Corpus of reliefs of the New Kingdom from the Memphite Necropolis and Lower Egypt I* (London 1987), 19–20 (39).



Fig. 10: Modern Egyptian offering bearer in the Saqqara Cemetery



Fig. 11: The relatives of the deceased visiting the Cemetery



Fig. 12: The man who recites the holy Qur'an



Fig. 13: The scene of 'mercy' or 'el-rahma'



Fig. 14: The offering bearer scene in the offering room



Fig. 15: Block British Museum EA 69667

# A new Old Kingdom rock-cut tomb from Abusir and its Abusir-Saqqara context

*Miroslav Bárta*

The aim of this contribution is to summarise and discuss some recent evidence for previously unknown rock-cut tombs situated in the area of Abusir. It results from an autumn 2004 discovery of an extensive rock-cut tomb in Abusir South. The tomb type to which this belongs represents only a minor category, but one which is indispensable for our understanding of Old Kingdom funerary culture. This contribution does not attempt to supply a detailed study of rock-cut tombs at Abusir and Saqqara. Rather, my wish is to outline the basic characteristics of this largely neglected yet promising field for future study.<sup>1</sup>

## *North Saqqara*

When searching for possible precursors of the rock-cut tombs so far known in the area of Abusir and Saqqara, it becomes evident that the known sources are limited and biased. One of the oldest attestations for their existence is preserved in the archives of the Griffith Institute and consists of two handwritten pages by W. M. F. Petrie from his visit to the North Saqqara plateau. There were perhaps as many as three tombs that he was able to observe.<sup>2</sup> Judging

by the notes made by Petrie, it may only be estimated that the tombs are of post-Sneferu date since at least one of them contains the *hetep di nesut* formula, complemented by an offering list.<sup>3</sup> Based on circumstantial evidence, it may be supposed that they represent more or less contemporary appendages to the known tombs, most likely of the late fifth–sixth dynasty date (Fig. 1).

## *The Cemetery of Unas*

During the fifth dynasty an important group of tombs developed in a trench south of the causeway of Unas. The cemetery started in what originally used to be a quarry established by Djoser. During the fifth dynasty, several rock-cut tombs were built in its southern slope. These tombs are unevenly distributed into two eastern and western parts and are situated at two different levels.<sup>4</sup> They represent, however, only the proverbial tip of the iceberg since large sections of the trench have never been excavated. Yet this cemetery contains by far the largest number of rock-cut tombs in the whole area.

The lower level tombs were built from the west to the east and, besides many uninscribed tombs, there belong

<sup>1</sup> General literature on the rock-cut tombs of the Old Kingdom may be found in: Brunner, H., *Die Anlagen der ägyptischen Felsgräber bis zum Mittleren Reich* (Glückstadt, New York [etc.] 1936); G. A. Reisner, *A History of the Giza Necropolis* (Cambridge 1942); P. Elsner, *Die Typologie der Felsgräber: strukturanalytische Untersuchung altägyptischer Grabarchitektur* (Frankfurt am Main 2004); P. Jánosi, *Giza in der 4. Dynastie: die Baugeschichte und Belegung einer Nekropole des Alten Reiches* (Wien 2005), 297–435. For a more detailed overview of individual Old Kingdom sites with rock-cut tombs see *ibid.*, 297, n. 1855 and most recently also E. Edel, K.-J. Seyfried, G. Vieler, *Die Felsgräbernekropole der Qubbet el-Hawa bei Assuan. I. Abteilung* (Paderborn 2008).

<sup>2</sup> D. Jeffreys, A. Tavares, ‘The Historic Landscape of Early Dynastic

Memphis,’ *MDAIK* 50 (1994), 147.

<sup>3</sup> Petrie, in Sayce Mss., 27 a and b (Archives of the Griffith Institute, Oxford). I am indebted to J. Malek for letting me to use this unpublished material.

<sup>4</sup> PM III<sup>2</sup>, Plan LXII, 637–645. On the history and chronology of the quarry and its subsequent development see H. Altenmüller, ‘Remarques sur la datation de la tombe d’Irou-ka-Ptah à Saqqara’, *Actes du XXIXe Congrès International des Orientalistes. Egyptologie* (2 vols, Paris 1975), I, 1–5; *id.*, ‘Arbeiten am Grab des Neferherenptah in Saqqara (1970–1975)’, *MDAIK* 38 (1982), 1–16; A. M. Moussa, H. Altenmüller, *Das Grab des Nianchnum und Chnumhotep* (AV 21; Mainz am Rhein 1977), 13–14.

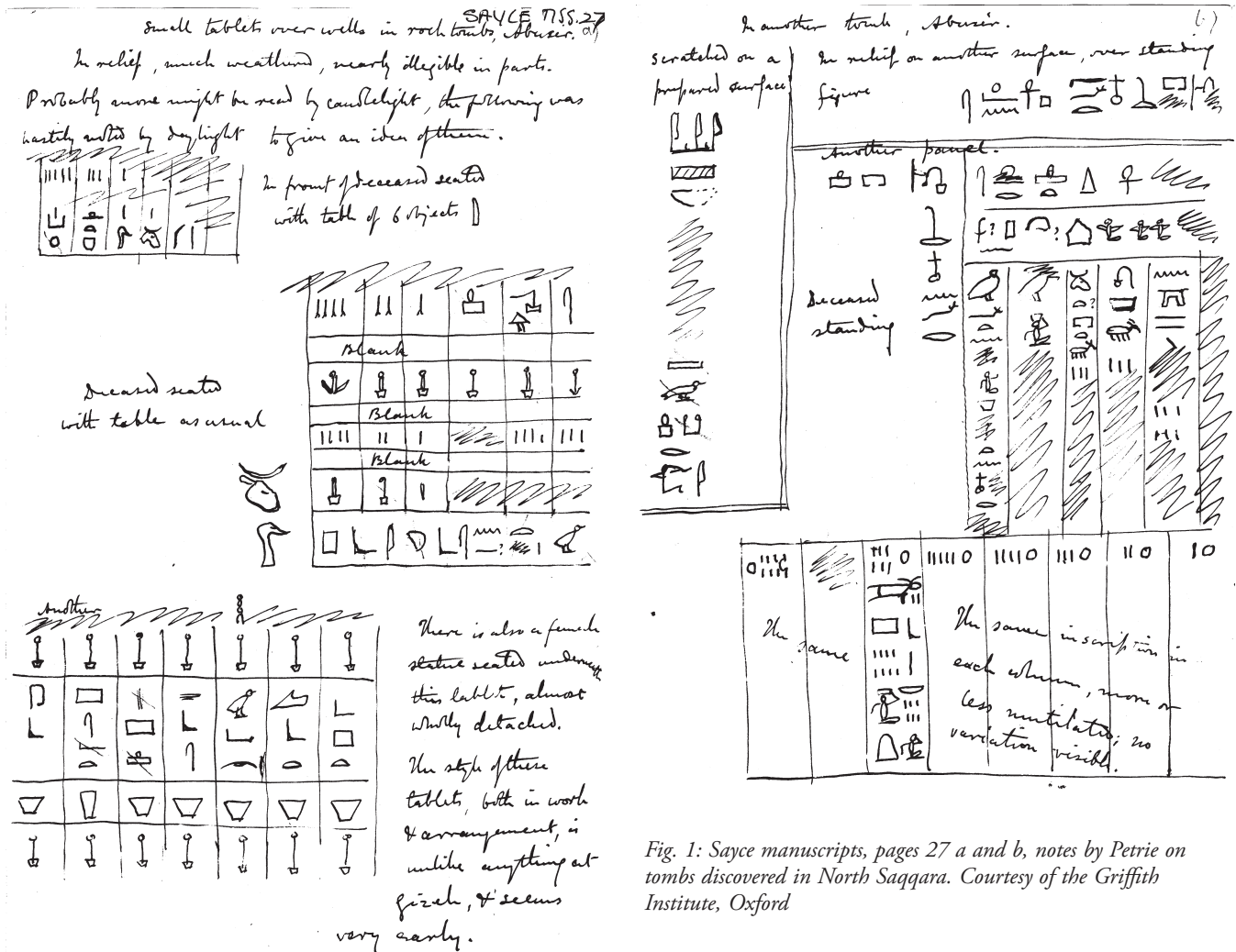


Fig. 1: Sayce manuscripts, pages 27 a and b, notes by Petrie on tombs discovered in North Saqqara. Courtesy of the Griffith Institute, Oxford

the tombs of Niankhra, Akhtihotep, Irukaptah, Ankh and Bunefer. Then follows an as yet unexcavated middle part of the cemetery, which continues on the east with the tombs of Niankhkhnum and Khnumhotep, Irienkaptah, Sekhentiu and Neferseshemprah.

The upper terrace seems to have existed only in the eastern part of the quarry. The tombs situated here were also built from the west to the east and in addition to some unscribed chapels, they include the tombs of Nefer and Kahay, Ankhirptah and Nikaankh.

The eastern as well as the western ends of the cemetery are demarcated by a north-south orientated slope within the quarry. On the west, there is the tomb of Neferherenptah that was built shortly before the construction of the Unas causeway. During its building, the causeway was erected over two unscribed tombs that existed at this location prior to the building project of Neferherenptah. On the east, there are several further undecorated and unscribed rock-cut tombs, all of them concentrated on the lower terrace of the quarry.

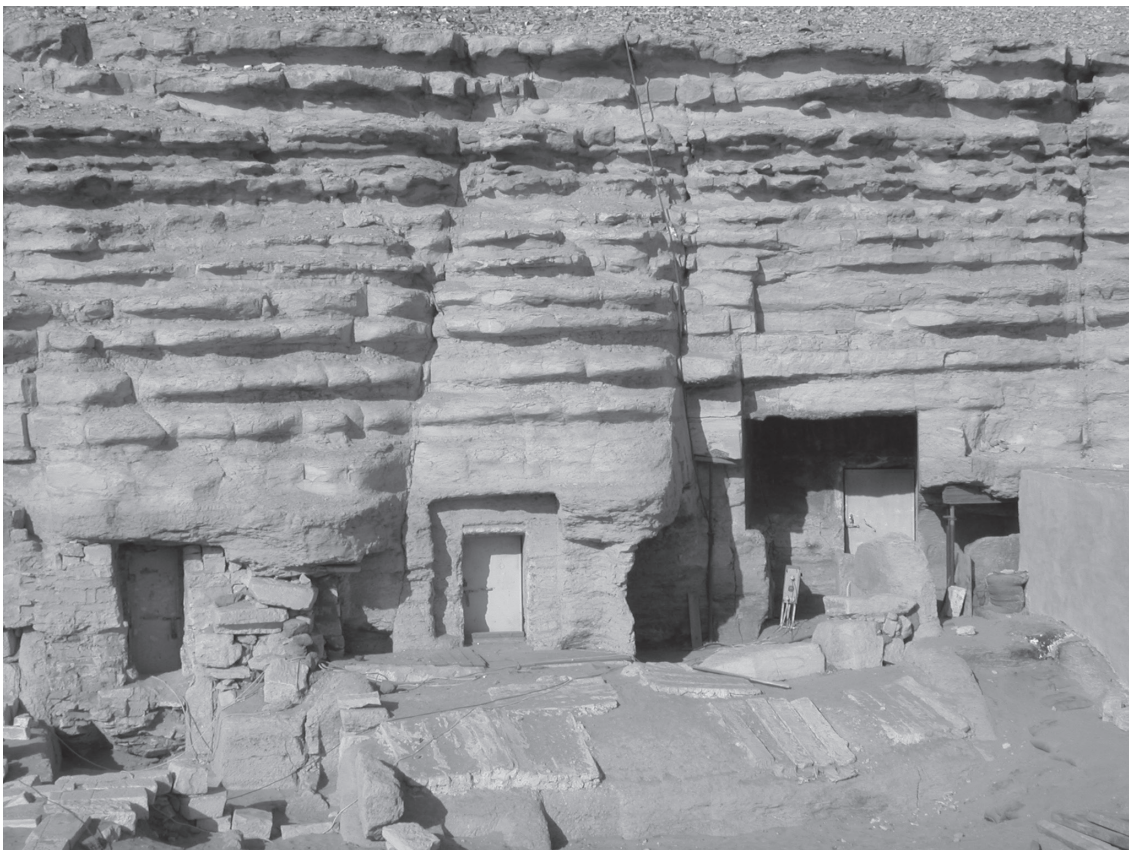
There is even a possibility that there were three terraces.

Nowadays, however, only two of them, the upper and the lower are discernible. The unscribed tombs in this cemetery are located on the lower terrace. From the occurrence of shafts and false doors it seems probable that at least some of these were in use. In the south-eastern corner of the cemetery, to the east of the tomb of Sekhentiu and Neferseshemprah, there is a tomb with a preserved architrave bearing an offering formula but without the name of the tomb owner. To the north of it is another one, with a wall covered with rough plaster with red lines designed to facilitate the composition process of the decoration. Further north there is an additional tomb with a transverse room and two roughly-cut false doors in the western wall. In the close vicinity of this tomb are preserved the remains of a mud-brick chapel with an offering bench in the eastern part. According to Altenmüller, it is very possible that some more tombs existed near here.

The rock-cut tombs situated on the lower terrace, in the south-eastern part of the quarry, represent the latest layer of the tombs that were built here shortly before the reign of Unas. These were accessible from the same level. In front of



*Fig. 2: Rock-cut tombs cemetery south of the pyramid of Unas (M. Bárta)*



*Fig. 3: Bubasteion cemetery with location of the former Old Kingdom rock-cut tombs (M. Bárta)*

their entrances is a stretch of levelled bedrock. In contrast, the tombs to the west of the tomb of Niankhkhnum and Khnumhotep are accessible from a depth of about 1.70 m. Given the fact that the terrace slopes steeply to the right in front of the tomb of Niankhkhnum and Khnumhotep, a considerable amount of work was necessary to develop the terrace prior to the construction of this tomb. (Fig. 2).

### *The cemetery of Merefnebef*

Over the past few years the work of the Polish mission west of the Step Pyramid complex has shed new light on the sixth dynasty history of this part of the cemetery. Their most important work includes the discovery of the mastaba/rock-cut tomb of the vizier Merefnebef called Fefi, and dated by the excavator to the mid-sixth dynasty (Pepy I) though an earlier dating to the early sixth dynasty makes more sense to me.<sup>5</sup> More recently, several new rock-cut tombs were discovered north of the tomb of Merefnebef, among them the rock-cut chapels of Nyankh-Nefertem-Temi,<sup>6</sup> Chapel 13 belonging to Seshemnefer,<sup>7</sup> Chapel 14 of Ikhi,<sup>8</sup> and the anonymous Chapel 16<sup>9</sup> and Chapel 17.<sup>10</sup>

Merefnebef built his final resting place as a rock-cut tomb topped by a mastaba on the surface. Moreover, on the eastern side of the mastaba he decided to add an external cult chapel with a decorated false door.<sup>11</sup> These features make his tomb relevant for our better understanding of the Abusir tomb AS 31 (see below).

### *Tabbet al-Guesh*

There are a number of rock-cut tombs in the area of Tabet al-Guesh in South Saqqara, a cemetery situated on a 15 ha plateau.<sup>12</sup> The tombs discovered there are of late Old Kingdom date (reign of Pepy I–Pepy II included; at least one of them dates to the First Intermediate Period) and most of their owners held the title of lector priest and had also other titles such as *khenti-she* priest, chief of a priestly

phyle, noble of the king, and unique friend. On the surface, the tombs are characterised by large mud-brick enclosures reaching a height of some 3 m and covering areas of 4 × 9.5, 6.5 × 9 and 6 × 9.5 m. These three enclosures delineate the funerary complexes of Khnumhotep (TG1), Pepyankh (TG2) and Khui (TG3), respectively.

Below ground, the respective cult chapels were cut in the rock, most of them of sixth dynasty date, some of them associated with specific tomb holders. Thus, tomb TG1 belonged to Khnumhotep, T5 to Haunefer and TG6 to Pepyankh. Each tomb complex consists of an enclosure and a flight of steps that leads to an open courtyard from where one can enter the funerary chapels where the burial shafts are located. In some cases, however, the shafts were also cut in the floor of their respective courtyards. In one case, the tomb of Pepyankh (from the entrance decoration), there is a direct reference to this specific type of funerary complex referred to as *pr-dt*.<sup>13</sup>

### *The 'Bubasteion' Cemetery*

Of this cemetery only several walls of the original tombs were preserved and documented recently.<sup>14</sup> The survey was done in connection with work on the New Kingdom tombs. Their later construction caused almost complete destruction of preexisting Old Kingdom structures. The analysis of these tombs is rendered more complex due to the very complicated underground system, with shafts of uncertain date. Within this framework, the present author had an opportunity to document these Old Kingdom tomb remains during the 2002 season. Several days of epigraphic work permitted all available and visible remains of the wall decoration to be copied and described. From what has remained in situ, it is difficult to establish any ground plan of the tombs. It is estimated that there existed at least three tombs, orientated in a north–south direction and facing south. Today, their remains may be found adjoining the west wall of the recent 'house' of the famous envoy of Ramesses II, Netjerwedjmes (Fig. 3).<sup>15</sup>

### *A new rock-cut tomb from Abusir*

In 1995, during the course of a rescue excavation, the Czech mission discovered a previously unknown sixth

<sup>5</sup> M. Bárta, 'The title "Inspector of the Palace" during the Egyptian old Kingdom,' *ArOr* 67.1 (1999), 15–16.

<sup>6</sup> K. Myśliwiec, 'West Saqqara archaeological activities, 2003', *PAM* 15 (2004), 116; K. O. Kuraszkiewicz, 'The owner of chapel 15 and his family', *PAM* 15 (2004), 123–125.

<sup>7</sup> id, 'West Saqqara in 2002', *PAM* 14 (2003), 121.

<sup>8</sup> *ibid*, 123–124.

<sup>9</sup> K. Myśliwiec, 'West Saqqara archaeological activities, 2003', *PAM* 15 (2004), 120.

<sup>10</sup> *ibid*, 111–122.

<sup>11</sup> K. Myśliwiec et al., *The tomb of Merefnebef (Saqqara I; Warsaw 2004)*, 56–59.

<sup>12</sup> Vassil Dobrev, personal communication. For the recent excavations of IFAO led by V. Dobrev, see V. Dobrev, 'Tabbet al-Guesh', *BIFAO* 102 (2002), 524–526; *BIFAO* 103 (2003), 568–571; *BIFAO* 104 (2004), 661–665; *BIFAO* 105 (2005), 423–426; *BIFAO* 106 (2006), 351–354; *BIFAO* 107 (2007), 265–267 and *BIFAO* 2008, forthcoming.

<sup>13</sup> V. Dobrev, 'A new necropolis from the Old Kingdom at South Saqqara', in M. Bárta, ed., *The Old Kingdom Art and Archaeology. Proceedings of the conference held in Prague, May 31–June 4, 2004* (Prague, 2006), 127–131; *ibid*, 'Old Kingdom tombs at Tabet al-Guesh', in M. Bárta, F. Coppens, J. Krejčí, eds, *Abusir and Saqqara in the Year 2005* (Prague 2006), 231–232, pls 4–6.

<sup>14</sup> A survey undertaken by the present author who was invited by A. Zivie, director of excavations.

<sup>15</sup> A. Zivie, P. Chapuis, *Les tombeaux retrouvés de Saqqara* (Monaco 2003).

Table 1: Sizes of individual rock-cut chapels

Unas Cemetery	Length	Width	Height
Irukaptah	13.35–13.55	2.15–2.25	2.35 <sup>1</sup>
Nefer/Kahay	8.45	1.86	2.25 <sup>2</sup>
Irienkaptah	irregular 5.00–5.10	2.00–3.55	1.90 <sup>3</sup>
Sekhentiu/Neferseshemtah	8.70	1.82/1.94	2.06 <sup>4</sup>
Neferherentah	8.90	2.00	2.40 <sup>5</sup>
<b>Cemetery of Merefnebef</b>			
Chapel 13, Seshemnefer	7	3	1.70 <sup>6</sup>
Chapel 14, Ikhi	2.5	2.5 (western part), 4.5	3.8 (eastern part), heights missing
Merefnebef	6.26	2.44	2.25
Chapel 15, Nyankhnefertem	6.53 (NS)	2.65–2.80 (EW)	1.83–1.89
Chapel 16	9.00	2.40	
Chapel 17	4.16	2.40	
<b>Tabbet al-Guesh</b>			
Haunefer, main chapel T5	1.90	3.30	1.90
Khnumhotep, chapel 1	5.40	1.80	1.80
Abusir South			
AS 31	19.60	2.25	3.50
AS 41	10.30	1.80–2.15	2.50–2.00
AS 42	4.93	3.23	2.45

<sup>1</sup> For this tomb see A. MacFarlane, *The Unis Cemetery at Saqqara. Volume I. The Tomb of Irukaptah* (ACER 15; Sydney 2000), 21.

<sup>2</sup> A. M. Moussa, H. Altenmüller, *Old Kingdom tombs at the causeway of king Unas at Saqqara. The tomb of Nefer and Kahay* (AV 5; Mainz am Rhein 1971), 10.

<sup>4</sup> A. M. Moussa, F. Junge, *Old Kingdom tombs at the causeway of king Unas at Saqqara. Two tombs of craftsmen* (AV 9; Mainz am Rhein 1975), 13.

<sup>5</sup> Altenmüller, *MDAIK* 38 (1982), 4.

<sup>6</sup> K. Mysliwiec, 'West Saqqara in 2002', *PAM* 14 (2003), 121.

dynasty cemetery in the area of South Abusir.<sup>16</sup> The oldest, completely examined mastaba so far belongs to the vizier Qar. It abuts the western face of an earlier, possibly late fifth dynasty, anonymous rock-cut tomb originally labelled as 'Mastaba KK' (now AS 31).<sup>17</sup>

In front of AS 31 is situated a large open courtyard

<sup>16</sup> M. Bárta et al., *Abusir XIII : Abusir south 2 : tomb complex of the vizier Qar, his sons Qar Junior and Senedjemib, and Iykai* (Prague 2009).

<sup>17</sup> Since the beginning of the Czech excavations in Abusir, an alphabetical system for numbering individual archaeological entities was used. However, it was subsequently decided to change away from this system for its apparently non-diagnostic labelling and to renumber individual objects respecting a chronological order according to archaeological seasons and individual areas of the Abusir pyramid necropolis, using AS for Abusir South.

measuring approximately 10.80 × 5.00 m, accessible by a ramp that runs from the north-eastern corner parallel to its east wall. The ramp is 5.90 m long, 1.40 m high on the north where it starts, and 2.35 m wide, and is built of mud-bricks. It descends to the south. Cut in the south wall of the court are two rock-cut tombs, AS 41 and AS 42, both of which have north-south orientated chapels. These tombs were found void of any decoration and the meagre finds were only some pottery fragments and some parts of the statuary (Fig. 4).

#### AS 41 (KK IV) (Fig. 5 and Fig. 6)

The tomb is entered from the floor of the court by way of a small ascending ramp 0.70 m long, 1.20 m wide and reaching a height of 0.30 m above the ground. It gives way to the entrance of the tomb, 1.30 m long, 1.55 m wide and 2.44 m high. Both sides of the doorway were



*Fig. 4: Cemetery in Abusir South with the tomb AS 31 at the background (M. Bárta)*



*Fig. 5: View of the court with entrances into tombs AS 41 and 42 on the south (M. Bárta)*



Fig. 6: View of the tomb AS 41 chapel, view from the north (M. Bárta)

narrowed down by means of two mud-brick walls to a passage 0.84 m long and 0.60 m wide. The entrance opens into a 10.30 m long, 1.80–2.15 m wide and 2.50–2.00 m high (diminishing southward) corridor chapel. At the south end, embedded in the west wall is a recess 1.55 m wide and 0.40 m deep in which a false door originally stood. At the south end of the corridor is a stone wall behind which is found a serdab, 0.85 m deep.

In the floor of the chapel are three shaft openings.

Shaft 1 (proceeding from the north) 0.90 × 0.90 m, 2.40 m deep

Shaft 2 1.10–1.15 × 1.10–1.15, 2.70 m deep; at the bottom, to the west of the shaft, is a shallow burial chamber 0.72 m deep, 1.80 m long and 0.63 m high, without finds.

Shaft 3 1.10 × 1.10 m, 3.40 m deep, at the bottom, to the west of the shaft a chamber, 0.80 m deep, 1.90 m long and 0.70 m high. On the floor were found the imprints of a wooden coffin which originally measured 1.76 × 0.50 m. No finds.

#### AS 42 (KK III)

This tomb has a single chamber, entered through an entrance 0.66 m wide and 2.13 m high, 0.80 m above the floor of the court. It is a north-south orientated chamber, roughly hewn in the bedrock, measuring 4.93 m long,

3.23 m wide and 2.45 m high with an irregular shaft opening in the north-western corner measuring about 1.20 × 1.30 m (unexcavated as yet). In the west wall, about 1.0 m to the north of the south-west corner, some 1.40 m above the floor level, is an irregular niche 1.00 m wide, 1.10 m high and some 0.70 m deep.

#### AS 31 (Fig. 7, Fig. 8, Fig. 9, Fig. 10)

Tomb AS 31 was excavated to some extent during the autumn seasons of 2002 and 2004 and is by far the most impressive of the three rock-cut tombs in the court. The tomb measures 41.30 × 17.20 m and consists of two different parts. The first part, built over the native bedrock, has the typical form of a mastaba built of local limestone blocks with a northern and southern cult niche. The superstructure of the tomb is still preserved to a height of more than 4 m. The essential components indicate that the architect strictly followed the mastaba pattern of the tomb, disregarding the fact that the most important and functionally essential components were situated in the rock-cut part of the tomb. The shell masonry is built of medium-sized blocks containing the loose filling of the body of the mastaba. It is above all the south cult niche of the tomb that is important for the dual concept of the tomb. This was built as an open cult place dominated by a

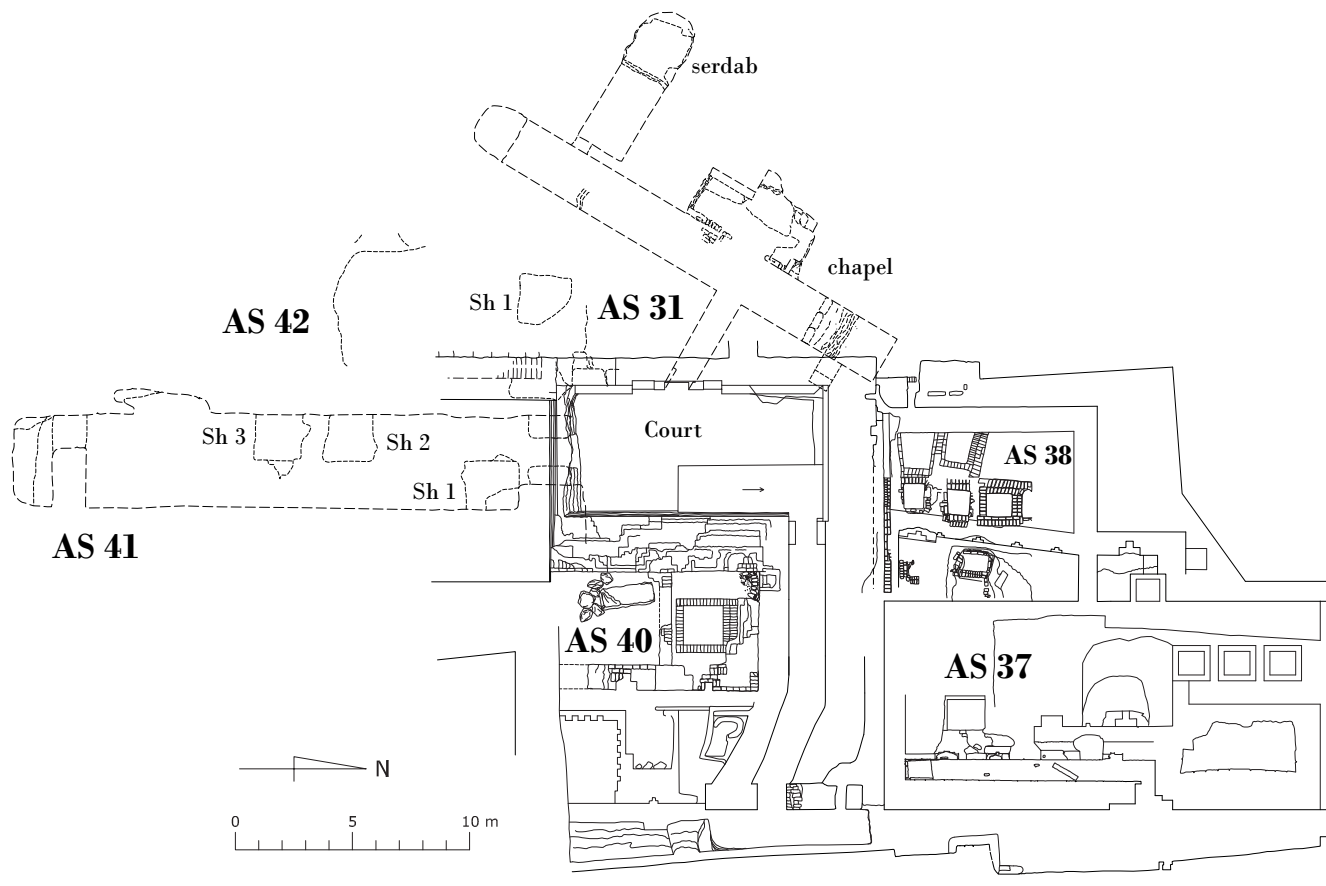


Fig. 7: General plan of the cemetery in front of AS 31 entrance (L. Wellner)

monolithic false door. It is this feature that emphasises the unique dual character of the tomb concept. The double-recessed false door was 2.10 m wide, 1.00 m deep and max. 2.38 m high, embedded in a 0.50 m deep recess and made of white limestone but devoid of any decoration. In front of it was built an open cult place 2.10 m wide and 2.40 m long. It seems that this chapel was built in two phases, the first one being only 1.00 m long (together with the niche making up 1.50 m) and open to the east. Later on, the chapel was enlarged to the present dimensions. There were no artefacts whatsoever found here. The necessary northern niche was found totally destroyed, not far away from the entrance into the underground section of the tomb. Only the width of the niche has been preserved; it was 1.74 m wide; the depth may be estimated at 0.50 m, in accordance with the southern niche.

### Chapel

The second, more intricate part has been cut in the bed-rock below the northern niche of the tomb. This has the form of an inclined façade dressed with locally procured limestone blocks. This part is 11 m wide and 4 m high containing an entrance into a rock-cut chapel. In its centre is a monumental limestone block shaped in the form of

a false-door providing access into the tomb. The chapel is entered by a 2.80 m high and 4.10–4.80 m long entryway (1.00 m wide) giving passage into a north-south orientated chapel. Its ground-plan measures 19.60 × 2.25 m and it is 3.50 m high. In the western wall was a decorated cult niche of which only fragments could be recovered. The original dimensions of the niche may be estimated at 4.20 m (width) and 1.44 m (depth). The western part of the chapel floor was taken up by a large limestone platform block which supported the original false door or a decorated niche. Fragments of this niche were found in the southern part of the corridor. From the imprint on the floor it may be supposed that the niche originally had three recesses. The side walls of the niche were cased with limestone blocks and the floor plastered with a mud layer. Between the corridor and the niche proper stood a partition mud-brick wall of which only the lowermost course was preserved on both sides, in each case 1.06 m long and 0.26 m wide, leaving a 2.08 m wide space in the centre.

By sheer size comparison, the chapel of tomb AS 31 with its 19.60 × 2.25 m ground plan is by far the largest known rock-cut tomb known in the necropolis (Table 1) and indicates the architect's predilection for large dimensions.



Fig. 8: South chapel of AS 31 (M. Bárta)

### Burial apartments

As for the decoration, the only positive evidence for it was found in the southern part of the corridor and consisted of several fragments originating from the false door. The imprint of the false door was found on the floor of the chapel and from the fragments it appears that this was the only decorated element of the tomb. The walls of the corridor were finely polished and in places, when required by the poorer quality of the rock, cased with limestone blocks. A closer look at the quality of the work shows that the smoothing was carried out carefully and was followed by white plastering which is still preserved in many places.

The burial installations were discovered to the west of the cult niche (an 8 m deep shaft with a burial niche) and to the west of the corridor chapel (taking the shape of a niche with a robbed limestone sarcophagus). According to

the preliminary anthropological results it seems that there were at least two persons buried within the tomb (both male and female).

The shaft started on the top of the mastaba and descended south-west of the cult niche in the rock-cut part of the tomb. At its bottom, cut in the west wall, was a small chamber measuring  $2.90 \times 2.00\text{--}2.20$  m, accessible by a 1.00 m long and 1.30 m wide entryway. It is interesting that this shaft begins at the level of the bedrock and there were no built side walls that might have protected the open shaft during the building stage of the mastaba's superstructure.

Another burial installation was discovered in the northern part of the corridor. This section of the tomb consists of several components, all of them carefully executed. It is above all a niche of unknown purpose with a slot to admit light in the eastern wall, close to the northern end of the

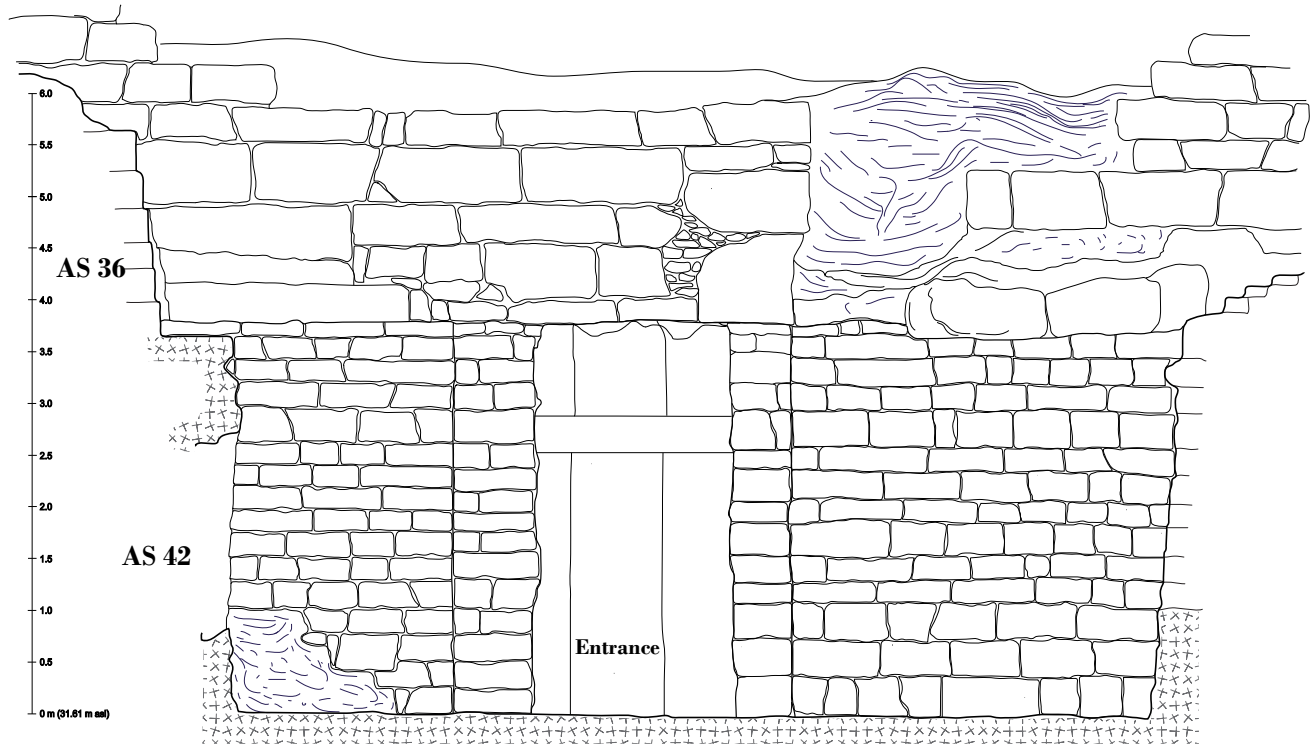


Fig. 9: View of the facade of mastaba AS 31 (L. Wellner)



Fig. 10: View of the chapel of AS 31, looking south (M. Bárta)



Fig. 11: Restored part of an inscription from the chapel with some titles of the anonymous owner of AS 31 (M. Frouz)

corridor. The whole section of the corridor north of the tomb entrance has a lower ceiling, another indication of the great care invested into the final shaping of the inner space.

In the northern part of the corridor was a limestone wall cutting off the northernmost section, with a sealed entrance into a corridor leading to another unfinished burial apartment. The partitioning wall dividing the corridor in an east–west direction into two asymmetrical parts begins 3.25 m south of the north end of the corridor. Originally it reached the ceiling. The empty space between the partition and the north wall was originally filled with a dense layer of destroyed mud-brick. Opposite the niche in the east wall was an entrance giving way to a narrow corridor starting in the west wall and running for some 4 m to the west. It opens into an anteroom of about 5 × 3 m in ground plan. From there, opening in the west wall, an opening leads into a burial niche.

The burial niche with its sarcophagus gives the impression that its incorporation into the tomb's concept was only secondary. The niche itself is some 3.90 m deep and 2.10 m wide. The limestone sarcophagus is 2.30 m long and 1.08 m wide, with its lid moved to the side. The specific feature is the east–west orientation of the whole burial. The room was found robbed and only one canopic jar made of calcite could be found to the west of sarcophagus.<sup>18</sup>

### Serdab

The serdab was cut in the west wall of the corridor, south of the cult place. It is a wide and long room orientated in an east–west direction, 7.50 m long and 2.14 m wide. The first 4.60 m of the side walls are fairly well cut whereas the back part of the room seems to have been left unfinished. Between the room and the corridor was built a massive wall of local limestone lumps, the wall being 0.90 m wide. At a height of 1.00 m above the floor level a narrow slot began. In front of the serdab wall, in the corridor, was traced a L-shaped bench used probably for the offerings for statues originally placed in the serdab (of which nothing has remained).

<sup>18</sup> Excavation No. 10/LL/2004.

### Preserved titles (Fig. 11 and Fig. 12)

Establishing at least a provisional dating for the tomb is essential since this is the oldest structure in this part of the cemetery, directly preceding the tomb complex of the vizier Qar. In this respect, several cult niche fragments with hieroglyphic inscriptions uncovered in the chapel of AS 31 provide some evidence. Among the titles two are of high importance. The first one is *hm-ntr hnmw hnt(j) pr-z3* 'priest of Khnum who is foremost/first of the House of protection', a title to my knowledge so far unattested from the Old Kingdom<sup>19</sup> and *ꜥ-Nmtj* 'assistant of Nemty'.<sup>20</sup> The latter title has been attested for Mereruka (reign of Teti),<sup>21</sup> in the tomb of Udjahateti (reign of Teti–Pepy I),<sup>22</sup> and in the tomb of Tjetju (Pepy I).<sup>23</sup> All three tombs are situated in the Teti Pyramid Cemetery. The final attestation of the title comes from the 'Louvre' mastaba of Akhtihotep south-east of the complex of Djoser, equally dated to the late fifth–early sixth dynasty.<sup>24</sup> Another interesting feature is found in the title '(priest) of Anubis, who is in front of Sepa, west of his places...' with its citation of the locality Sepa, the existing evidence for which has been collected by Zibelius. From her list it follows that with regard to Saqqara, most cases are

<sup>19</sup> But see Hannig, *Lexica* 4, 454, *pr-s3*, 'Haus des Schutzes' and *hnt(j) m pr-s3*, 'der erste im Haus des Schutzes'.

<sup>20</sup> D. Jones, *An Index of Ancient Egyptian Titles, Epithets and Phrases of the Old Kingdom*, (2 vols, BAR International Series 866; Oxford 2000), 347–348, No. 1295. For the reading proper of the title consult O. D. Berlev, "'Сокол плывущий в ладье", иероглиф и бог', *Вестник древней истории* 1 (1968), 3–30. I owe the improved reading of the title to Nigel Strudwick.

<sup>21</sup> P. Piacentini, *Les scribes dans la société égyptienne de l'Ancien Empire. Vol. I. Les premières dynasties. Les nécropoles Memphites* (Études et Mémoires d'Égyptologie No. 5; Paris 2002), 581ff–G.Sa.28.

<sup>22</sup> *ibid.*, 569ff–G.Sa.17.

<sup>23</sup> *ibid.*, 633ff–G.Sa.73.

<sup>24</sup> B. Begelsbacher-Fischer, *Untersuchungen zur Götterwelt des Alten Reiches im Spiegel der Privatgräber der IV. und V. Dynastie* (OBO 37; Freiburg/Göttingen 1981), 221; PM III<sup>2</sup>, 634; Ziegler, C., *Le mastaba d'Akhetetep* (Paris 2007), 24.



Fig. 12: Detail of the inscription (M. Frouz)

dated to the sixth dynasty, a significant number of which originate from the cemetery of Pepy II in South Saqqara.<sup>25</sup>

### Conclusions

Taking into account all evidence at our disposal at the moment, one can suggest that tomb AS 31 dates to the late fifth or very early sixth dynasty (with reservations). Its location shows clearly that this tomb was built as the first in this part of the remote Abusir-Saqqara cemetery. The question of whether there existed any connection with the subsequently built tombs of Qar and his family must be left open for the lack of evidence at present time.

Within the scope of this contribution, only a tentative comparison of the Giza and Abusir-Saqqara building traditions can be attempted. First of all, despite all previous accounts, there is no firm evidence for rock-cut tombs in

Abusir-Saqqara prior to the fifth dynasty.<sup>26</sup> Thus the oldest rock-cut tombs on the pyramid fields developed in Giza, probably as early as during the reign of Khafre.<sup>27</sup> Another major difference lies in the fact that unlike Giza (where the tombs belonged to the highest members of the royal family, including the queens and royal children), the rock-cut tombs built close to Memphis belonged, with only one known exception, to lower rank officials. Concerning the social status of the tomb owners, more than sixty different titles of seventeen tomb owners were noted. Generally speaking, they have almost nothing in common except for the title 'property custodian of the king' which is attested in as many as eleven cases and 'intimate of the king' (attested five times).<sup>28</sup> On a general level, it may be said that most of the tomb owners were employed at the royal court and as lower ranking priests.

<sup>25</sup> K. Zibelius, *Ägyptische Siedlungen nach texten des Alten Reiches* (BTAVO, Reihe B, Nr. 19; Wiesbaden 1978), 209–211.

<sup>26</sup> Compare P. Jánosi, *Giza in der 4. Dynastie*, 297.

<sup>27</sup> *ibid.*, 305ff.

<sup>28</sup> Jones, *Index I*, 449, No. 1681.

Without any further details, all evidence at our disposal from Abusir and Saqqara indicates that the fashion in rock-cut tomb building appears here by the end of the fifth dynasty, perhaps in connection with a resurrected 'link' between Giza and Abusir and Saqqara re-established some time during the reign of Niuserre. This, as well as most of the features mentioned earlier, necessitates, however, further examination and testing. What seems to be clear, however, is the conclusion that the rock-cut tombs known from Abusir and Saqqara appear suddenly and probably only as a modified import from Giza during the second half of the fifth dynasty. I am aware of just one parallel to AS 31 which is represented by a rock-cut tomb of Kaunesut at Giza. His tomb also features a regular mastaba-superstructure with southern and northern niche and with a chapel cut in the rock. Despite the official dating of the tomb to the late-fourth/fifth dynasty, the titles of Kaunesut allow for a possible later date (second half of the fifth dynasty).<sup>29</sup>

We may speculate as to the reasons that led to their introduction: there was certainly enough space to build standard mastaba-type tombs elsewhere. Perhaps at the beginning we

have here another example of the emulation of the material culture of higher officials by the lower officials, as was the case with imported and imitated Levantine pottery in some Abusir and Saqqara tombs during the sixth dynasty.<sup>30</sup> At the same time, it may be assumed that they were cheaper and quicker to build and did not require additional building material. This may have been yet another important factor in Saqqara as titles of the rock-cut tomb owners in this area indicate their somewhat lower status at the court.

Last but not least, at the present there is no explanation for a strong axis deviation of the entrance into the chapel of AS 31. The entrance is orientated to the south-east by about 30° which makes it rather unusual. There may be several factors to take into account: the orientation of the tomb towards the rising sun at a specific time of the year, the orientation towards another principal monument in this direction or some other, so far unknown, factors.

Many problems remain to be solved – the origin of rock-cut tombs in the area of Abusir and Saqqara, their social, spatial and perhaps religious specific significance. Most questions only can be answered with a hoe and a basket.

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<sup>29</sup> I owe this reference to Peter Jánosi. S. Hassan. *Excavations at Giza II* (Cairo 1936), 75–86, 76, fig. 81 – façade of the tomb, 77, fig. 82 – ground plan. Dating: PM III<sup>2</sup>, 274.

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<sup>30</sup> Bárta et al., *Abusir XIII*, 307.

## Mastaba core structure: new data from fourth dynasty elite tombs at Abu Rawash

*Michel Baud and Eric Guerrier*

The core or inner structure of the mastaba is the least studied part of this type of tomb, widely used in the Old Kingdom but mostly scrutinised for its two main components and their evolution, namely the chapel and the burial chamber. Earlier focus on epigraphy and decoration is certainly responsible for this situation, or rather its prehistory, since Egyptology has long since joined the mainstream of modern archaeological investigations and interest in architecture and archaeometry. However, while the structure and the building methods of the pyramids have attracted considerable attention (for better or worse), similar (but serious) studies on mastabas clearly remain in their infancy.

A number of factors certainly explain this situation. First, excavating a mastaba core cannot but be destructive and has been rightly avoided. However, a number of interesting observations can be made when the superstructure is in an incomplete state of preservation, which is usually the case: blocks belonging to the upper rows of the retaining wall(s) were frequently torn out for reuse, or simply fell down as a result of a combination of various natural forces. Second, as the cores mostly consist of rubble, it is certainly a painful task to examine them carefully and truly difficult to distinguish between original strata and demolition layers for the top, most accessible levels. From a logical perspective, this may appear to be a desperately time-consuming archaeology of little value. Third, as all the mastabas do not share the same structure, there is a great difference in the range of possible observations. As is well known, there was a growing development within the Old Kingdom towards an increase in the number and size of rooms within the superstructure, so that the core proper had less volume than earlier; at the same time there was a growing tendency towards building smaller structures. As one may suppose, the reduced core was built with lesser means and care because its stability

was not any more at the heart of the structural survival of the whole monument.

### *Mastaba structure: problems of definition*

In the literature, such large bench-like structures are repeatedly considered as a simple mass of rubble retained behind an embankment wall, the whole surrounded by an independent casing. Because of their rectangular plan, solid mass, low height and simple facing without any sculptural refinement (not a 'façade' properly speaking), they have been considered as minimalistic buildings, also involving minimal engineering (the question of building process will not be addressed here, although it is closely related to our questioning about structure). Hence their cursory description which has never been the subject of academic analysis using normalised definitions, largely because the category of buildings to which they belong has no correspondence in Classical architecture. The very etymology of 'mastaba', as well as that of 'pyramid', says much about the folkloristic approach to these constructions.

It is important to recall here that Classical architecture almost entirely relies on structural principles and building components that aim at creating empty volumes supported by minimal walling and covering. In this respect, both pyramids and mastabas drastically depart from this model as their main component is a solid mass, which not only hides the way it was erected, but also the very idea of a special design of its structure. Even a simple term like 'wall' is problematic in this case, because it does not apply to a free-standing structure separating two spaces, but to the category of so-called retaining walls.<sup>1</sup> Two subtypes may

<sup>1</sup> For which see D. Arnold, *Building in Egypt. Pharaonic stone masonry* (New York & Oxford, 1991), 148–179, summarised in *ibid*,

be distinguished for mastaba architecture, although they closely relate to each other. In direct contact and connection with the nucleus stands an inclined retaining or embankment wall—the term ‘facing’ is perhaps more appropriate, since it belongs to the core and aims at consolidating and regularising its inner ‘filling’.<sup>2</sup> Such a structure implies that both facing and fill are built at the same time. In the building process, this is not the case for the additional sloping peripheral wall(s), insofar as the intermediate filling always abuts the wall that immediately stands behind. The peripheral wall(s) are designed to consolidate the structure through one or two enlargements that usually belong to the original project of the mastaba. As enlargements, they should be called ‘accretions’, a term which is widely used to describe pyramid architecture, but not that of mastabas, although they share obvious similarities in this respect.<sup>3</sup> The so-called ‘casing’ is the outer accretion. As a free-standing wall and not a true casing in its classical architectural meaning, it should be named ‘accretion wall with casing’, though we will adopt here the traditional term ‘casing wall’. Technically speaking, these accretions, because they are independent of the core, do not have the primary function of stabilising the nucleus (statically speaking, this would require walls abutting each other directly), but rather to counter the tendencies to collapse and creep (in other words, a dynamic process, see below).

As for mastaba architecture, the major study—still largely unsurpassed in many aspects—was published in 1942 by George A. Reisner and connected to his excavations of the ‘nucleus cemeteries’ at Giza, that is, the first groups of tombs on the local plateau, part of the initial royal plan.<sup>4</sup> The excavations of Hermann Junker in the same areas also provide important information, sometimes more detailed, but not synthesised in a concluding volume.<sup>5</sup> Reisner

described these structures as ‘a stone retaining wall filled with stone, gravel, and rubbish, or in better examples filled with solid masonry of small blocks set in plaster’.<sup>6</sup> The retaining wall (*Kernmauerwerk* or *Mantelmauerwerk* in K. Holeý’s terminology) is built with roughly cut blocks of a size varying from one mastaba to another,<sup>7</sup> and inclined inwards or stepped backwards in order to contain better the pressure of the mass; the core (the retaining wall + filling) was surrounded by another wall of finer workmanship, called ‘casing’ (*Verkleidung*), whether stepped or dressed to present a sloping surface.<sup>8</sup> As the two walls are usually not directly built one against the other, some kind of intermediate filling was used.

In Reisner’s voluminous synthesis of 500 pages, only two are dedicated to the ‘materials and methods of construction of the core-mastabas’, where almost no supplementary information can be gleaned on the design of these ‘stone-cased rubble cores’.<sup>9</sup> He notes however that the erection of the retaining wall (and casing of the shafts), and filling of the space within, was performed *pari passu*, that is ‘moving together’ level after level. The typology that follows these introductory remarks does not provide more information about the core, although it is named ‘the types of cores’—indeed, only the type of retaining wall is involved, apart from cursory remarks about the composition of the filling, such as ‘sand, gravel, rocks, and rubbish’.<sup>10</sup> Rarely in the description of individual mastabas can the reader find more data, such as ‘retaining wall of small stepped courses (...) filled with gravel and sand ; *irregular compartments in the filling*, built of rough stones sometimes mud-plastered on one side’<sup>11</sup> (our emphasis); such interesting data are unfortunately not reported on the plans or sections. It should also be noted that the descriptions of Holeý and Junker give a more complex picture for mastabas of cemetery G 4000, such as a type consisting of a nucleus with layers of small stones or, locally, layers of stone chips, sealed with clay mortar.

Later literature on mastabas is usually heavily based on Reisner’s typology, so that descriptions are often minimalistic, if not referring simply to his core type number (that is, once more, wrongly limited to only the type of retaining

*The Encyclopaedia of Ancient Egyptian Architecture* (London 2003), 137–138 ‘masonry’.

<sup>2</sup> At an early historical stage (perhaps) of construction, this can also be a standing wall with a similar batter on both sides, i.e. trapezoidal in section and very similar to an enclosure wall: see the case of the early fourth dynasty mastaba of Netjeraperef in Dahshur, N. Alexanian, *Dahschur II. Das Grab des Prinzen Netjer-aperef. Die Mastaba III/1 in Dahschur* (AV 56; Mainz 1999), 30–32; this study is of the highest standard for the description of mastaba structure and has been a source of inspiration for our own work.

<sup>3</sup> According to J.-P. Adam in C. Ziegler, *Le mastaba d’Akhethetep* (Paris-Louvain 2007), 48.

<sup>4</sup> G. A. Reisner, *A History of the Giza Necropolis I* (Cambridge MA 1942), *passim*.

<sup>5</sup> See e.g. H. Junker, *Giza I. Bericht über die Grabungen auf dem Friedhof des Alten Reiches bei den Pyramiden von Giza* (Vienna 1929), 14–17, and 91–94 (the latter by K. Holeý); see now the synthesis by P. Jánosi, *Giza in der 4. Dynastie. Die Baugeschichte und Belegung einer Nekropole des Alten Reiches I: Die Mastabas der Kernfriedhöfe und die Felsgräber* (Wien 2005), *passim*. See also some cursory remarks in F.

Bisson de la Roque, *Rapport sur les fouilles d’Abou-Roasch* (1923–1924) (FIFAO 2.1; Cairo 1925), 80–87, for mastabas at Abu Rawash.

<sup>6</sup> Reisner, *Giza I*, 6.

<sup>7</sup> Not just a single row of blocks, but sometimes up to three when the stones are small (Holeý in Junker, *Giza I*, 91).

<sup>8</sup> Whether or not this wall was effectively built in a later stage is not an issue in the present paper, but remains crucial to the architecture of the Giza nucleus cemeteries and their chronology. See the synthesis of Jánosi, *Giza*, especially 177–203, from the data of both Reisner and Junker.

<sup>9</sup> Reisner, *Giza I*, 37–38.

<sup>10</sup> Reisner, *Giza I*, 39–56.

<sup>11</sup> For G 1201: Reisner, *Giza I*, 385.

wall). Few studies depart from this model and detailed descriptions remain extremely uncommon, although they always pinpoint interesting data and should therefore trigger curiosity towards this kind of architecture.

### *Principles of construction*

As early excavators of mastabas such as Reisner, Junker, Bisson de la Roque and others have noticed, apart from rare examples built in more or less solid masonry, a mastaba is usually a composite structure made of a mass of rather loose building material, but layered and enclosed by a peripheral 'wall', or rather embankment that belongs to the nucleus, and an accretion called the 'casing'. Such a massive construction, even if not of a considerable height, is subject to gravity and its two effects, creep and collapse. 'Creep' is an internal phenomenon of mass compression which produces a widening of the base of a structure. Collapse is an external phenomenon that degrades the faces of a mass and lops off its edges. Even if the ancient architects were not experts in the physics of gravitational forces, they were obviously aware of some of their effects. Theoretically, they could mobilise three main principles in order to obtain building stability:

1. Enclosure of the filling by one or several retaining wall(s);
2. Partitioning the mass by dividing walls;
3. Stratification of the mass by homogenous layers.

Although these principles are known individually in mastaba construction, they are not recognised as part of a whole system. Partitioning for example, is a well-known building method in early mud-brick mastabas which were designed with a chequered plan; although some of the 'rooms' therefore created were used as magazines, or, at a lower level, burial apartments, most were simple casemates to ensure the stability of the large mass of the building.<sup>12</sup> Construction in stone, from an evolutionary perspective, is considered to have replaced the casemate type building by the retaining wall and filling system of large tombs, where only careless stratification seems to be in play and no partition needed. Hence our surprise to discover a more complex picture at Abu Rawash, where elite mastabas of the fourth dynasty could be investigated.

The Abu Rawash project was initially focused on an historical perspective, namely to demonstrate that this forgotten site, cemetery 'F', was the Royal necropolis of king Djedefre, who was buried in a pyramid 1.5km further west.<sup>13</sup> Very soon however, the mastabas were also scrutinised

in order to understand their very structure. Observations were made possible by the poor state of preservation of the superstructures, which, after some minor clearance, revealed important data on the core structure and building process. As mentioned above, a major additional factor was the mastaba type. Because the tombs under consideration dated primarily to the fourth dynasty, they display the normal solid superstructure typical of the period, only interrupted by a small interior chapel and the two shafts leading to the burial apartments.<sup>14</sup> The core proper is therefore the main component of the superstructure and has received, as one may have guessed, special treatment to stabilise its imposing mass. Additionally, the mastabas of this cemetery are of large size, because the area is devoted to the elite of the kingdom, especially to the King's sons. All the conditions for a detailed investigation were therefore gathered, and some of its results are briefly given in this short paper; comparative data will be reduced to its minimum, as our aim is primarily concerned with presenting fresh data.

### *Mastaba F 37: pavements and casemates*

This tomb of about 50 × 25 m is one of the largest in the necropolis, if not the largest when one considers that other mastabas of similar size are in fact twin-tombs (F7, F19, and possibly F13) while F37 included only one chapel. Topographically, it is the dominating structure of the whole southern part of the cemetery, placed in front of a group of smaller mastabas (most unexcavated to date) divided into four irregular rows. Cleared by Charles Kuentz in 1931, this mastaba unfortunately remains anonymous, though the important title of 'King's son' was brought to light on a fragment of false-door. As a leading construction within the royal cemetery, a date within the reign of Djedefre is almost secure, although, like at Giza, its decoration may have been postponed—but not necessarily—to a later date within the fourth dynasty. The tomb does display elements which are in keeping with the elite status of its owner: the two-room interior chapel, instead of the usual single 'L'-shaped one so typical of the period; also the large offering-list that slightly predates the 'canonical' list of the end of the fourth dynasty and later. Therefore, both its architecture and decoration (of which so little have escaped destruction) represent a milestone in tomb development which has to be underlined, especially since it contradicts both the hypothesis that the process of multiplying inner rooms was triggered by the creation of rock-cut tombs at

<sup>12</sup> For a recent review on this type of mastaba at Giza, see S. Hendrickx, 'Les grands mastabas de la Ire dynastie à Saqqara', *ArchéoNil* 18 (2008), 60–83.

<sup>13</sup> M. Baud et al., 'Le cimetière F d'Abou Rawach, nécropole royale de Rêdjedef (IV<sup>e</sup> dynastie)', *BIFAO* 103 (2003), 17–71; Y. Gourdon, 'The Royal Necropolis of Redjedef at Abu Rawash

(seasons 2001–2005)', in M. Bárta, F. Coppens and J. Krejčí (eds), *Abusir and Saqqara in the Year 2005* (Prague 2006), 247–256; see also the recent interim reports in *BIFAO* 104 (2004), 594–598; 105 (2005), 417–422; 106 (2006), 347–351 and 107 (2007), 260–264.  
<sup>14</sup> P. Jánosi, *Die Gräberwelt der Pyramidenzeit* (Mainz 2006), 33–59 for a recent synthesis.

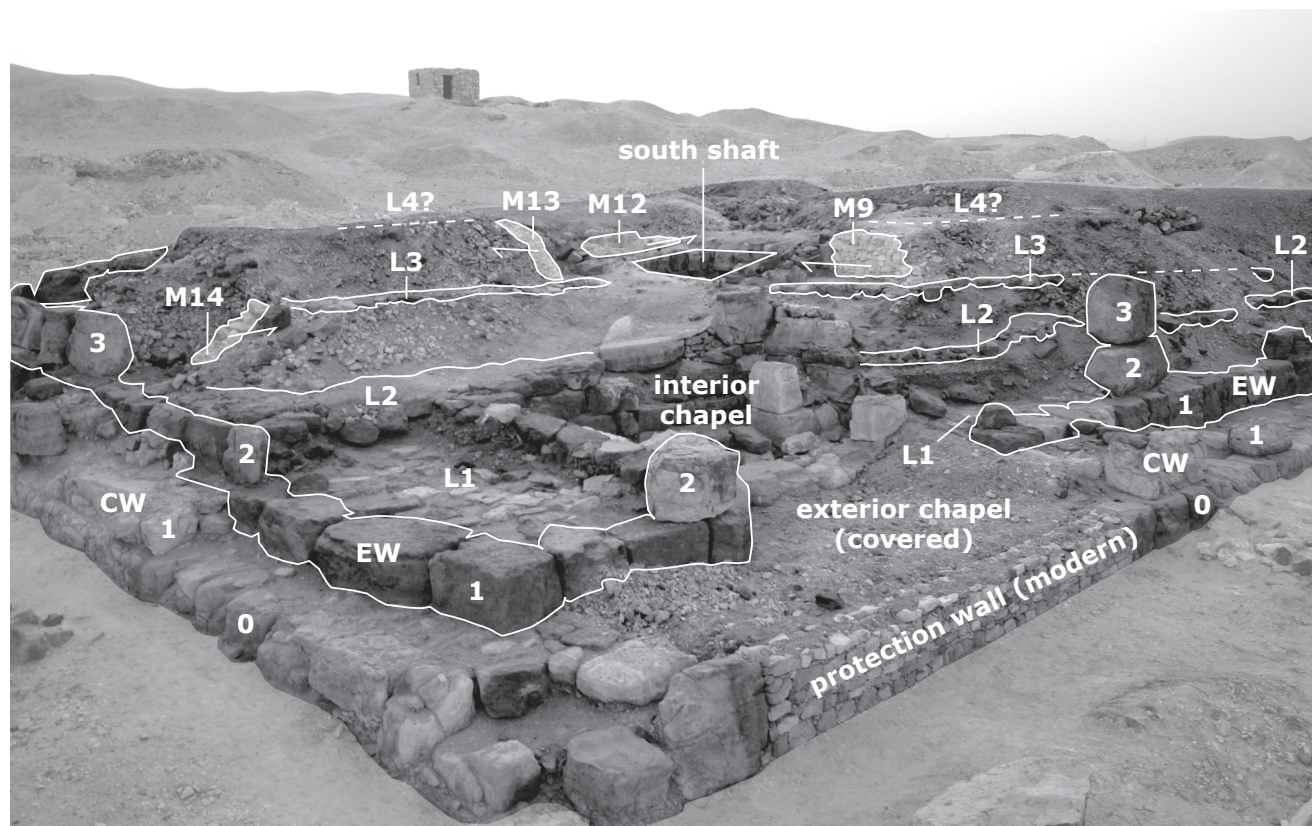


Fig. 1: Southern half of mastaba F37, side view from its south-east angle towards north-west. The east side is on the right and south side on the left. Legend: EW embankment wall, CW casing wall; numbers here refer to courses of blocks. L1–3 correspond to levels of “pavement”, L4 a possible layer for roofing; M numbers are for partition walls, the direction of which (north-south or east-west) is indicated by an arrow

Giza in the late fourth dynasty,<sup>15</sup> and that the canonical offering list does not appear before the reign of Menkaure.<sup>16</sup>

The core of this tomb, which is not exactly rectangular (dimensions: 47 × 21–22 m) is not simply built according to the system of the ‘filled mastaba’ with retaining wall, but appears as a more complex construction.<sup>17</sup> The embankment wall (EW) is a stepped construction of large blocks, with a set-back of about 20 cm from course to course—as far as we can judge, since most of the structure has been dismantled above the lower layer (Fig. 1, EW courses 1 to 3). Because of the rather steep west-east slope on which the mastaba was installed (5.5°, from asl 69.15 m west to 66.70 m east), the first course of the retaining wall is reduced to the eastern half of the finished core and its blocks are of diminishing height towards the west. Only the second and higher courses displayed a complete belt of stones, of which

very little remains for the third course and even less for the fourth one, the latter reduced to half a dozen isolated blocks on the west side, only one of which seems complete in height. Enough remains anyway to ascertain that the top of these successive courses were at asl 68.80 m for level 1, 69.75 m for level 2, 71.00 m for level 3 and 72.10 m for level 4, that is an average height of 1 m, roughly two cubits. Some of the blocks are not of this height and were replaced by smaller stones arranged in sub-courses. On the front of several blocks belonging to the first course of the eastern section of the core wall, a red level line is found at asl 68.46 m (north) / 68.54 m (south), which indicates that level 0 (Egyptian *nfrw*<sup>18</sup>), although not exactly horizontal, was at asl 68.00 m; this level corresponds to the top of the foundation platform, or rather bench, supporting the casing (CW), a narrow construction abutting the core (Fig. 1, CW course 0). Such marks in red have more to do with the building of the casing than the core itself, as is also evident from similar marks on the backing-stones of the pyramids.

<sup>15</sup> Reisner, *Giza* I, 219 sq., 247; see however Jánosi, *Giza*, 305–344, for a revision of their date (as early as Khephren) and the complex relationship between rock-cut tombs and mastabas; also Jánosi, *Gräberwelt*, 60–78.

<sup>16</sup> Baud et al., *BIFAO* 103 (2003), 45, fig. 13:2.

<sup>17</sup> It was thoroughly investigated and recorded by my colleague D. Farout, to whose unpublished report the present development owes much.

<sup>18</sup> The reference line painted red and from which all the following lines at a higher level (more rarely, lower) were measured in cubits, drawn and named accordingly (1 [cubit], 2 [cubits], and so on) during the process of erecting the mastaba.