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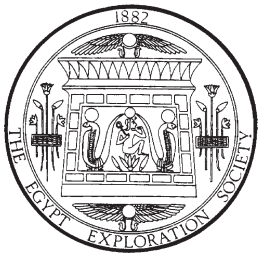

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The SCA Excavation at Tell Basta 2002

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Introduction

Tell Basta is situated about 80km north-east of Cairo and 3km south-east of the city of Zagazig, the capital of Sharqiya Governorate. The site was known in antiquity as *Bast* or *Per Bastet*, classical Bubastis, which means the 'the domain of the goddess Bastet' who was represented as a cat or a cat-headed woman. In ancient times the city was situated on the eastern bank of the Pelusiac Nile branch, controlling the two routes to Asia through the Wadi Tumilat and along the Pelusiac branch to north Sinai. This location made it a very important economic and political centre and allowed it to flourish from the Archaic Period until Roman times. Among the important ruins of Tell Basta that still can be seen are the great temple of Bastet, which was excavated by Edouard Naville between 1887 and 1889, the *Ka*-temple of Pepi I from the 6th Dynasty, the so called 'palace of Amenemhat III' from the 12th Dynasty, and a large cemetery in the site's north-western part that dates from the Old Kingdom to the Late Period and which includes important tombs of high officials from the New Kingdom including the tomb of the vizier Iuti and two viceroys of Kush named Hori.[1]

The site has a very long history of excavations which were carried out by the SCA, formerly the EAO, in different parts of the site. In addition Zagazig University worked in the cemetery to the north of the site and a German mission carried out documentation and reconstruction of the great temple of Bastet. Among the most important excavations is that carried out by the SCA in the domestic area to the north of the temple of Bastet in 2001-02, as it is one of the few excavations in the settlement of Tell Basta rather than in the temple or cemetery areas. It shed light on the architecture of the city in the Late Period, and added to our knowledge about grain storage in ancient Egypt.

The excavation site is situated to the west of the police training centre and is a high mound with a pointed top which slopes sharply in its northern and western parts for about 2m deep. Work was carried out in the upper level of the site as well as the lower level.

Excavation of the upper level (Fig.1)

The excavation of the upper level revealed a casemate foundation of a complete house and parts of the foundation of three other mud-brick houses, beside a well built of red brick

[1] See Naville, Édouard, *Bubastis (1887-1889)*, London, 1891; Gauthier, Henri 'Un vice-roi d'Éthiopie enseveli à Bubastis', *ASAE* 28 (1928) 129-137; Habachi, Labib, *Tell Basta*, Le Caire, 1957, SASAE Cahier N° 22; Farid, Shafik, 'Preliminary report on the Excavations of the Antiquities Department at Tell Basta (Season 1961)', *ASAE* 58 (1964), 85-98; El-Sawi, Ahmed, 'Preliminary Report on Tell Basta Excavations. Seasons 1969, 1970, 1971', *ZÄS* 104 (1977), 127-131; id., *Excavations at Tell Basta. Report of Seasons 1967 - 1971 and Catalogue of Finds*, Prague, 1979; Bakr, Mohamed I., *Tell Basta I. Tombs and Burial Customs at Bubastis,* Cairo, 1992; Van Siclen III, Charles C., 'The city of Basta, an interim report' *ARCE Newsletter* no.128 (1984) 28-39; Tietze Ch. and Abd el-Maksoud M., *Tell Basta. A Guide to the site*, Potsdam 2004; Spencer, N., *A Naos of Nekhthorheb from Bubastis*, with a contribution by Daniela Rosenow, British Museum Press 2006.

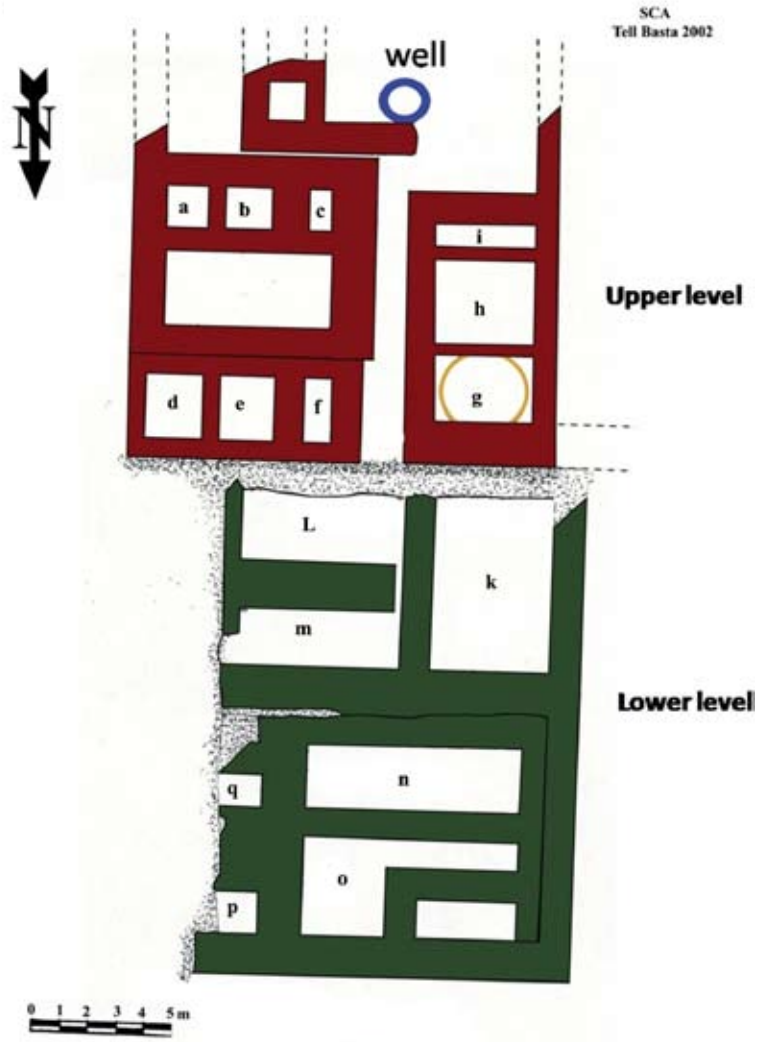


Fig.1. General plan of the excavation site at Tell Basta in the 2002 season.

Fig.2. Two Amphorae of torpedo type inside one of the rooms of house A.
Photograh: Aiman Ashmawy.

Description of the houses

House A

This is a rectangular house 8.30m x 7.0m which consists of a main hall in its northern part 6.0m x 2.80m internally, to the south of this hall are three rooms that open directly onto it. Room *a* is square in plan and measures 1.50m internally. Room *b* measures 1.80m x 1.50m internally while room *c* is 1.50m x 0.80m internally. Two amphorae of torpedo-type and three pestles of black granite were discovered in room *a* (Fig.2).

House B

This house is located to the north of house A and follows the same plan. Only the southern part of the house is preserved, while its northern (front) part which contained the main hall has completely vanished where the site slopes vertically for more than 2.0m at this part. The house is 7.0m wide, like house A it consists of three rooms on its southern side. Rooms *d* and *e* are rectangular in plan, measuring 2.0m x 2.30m each internally while room *f* measures 1.0m x 2.30m internally.

House C

This house is located to the west of houses A and B, separated from them by a narrow street 1.20m wide. The house follows the same layout but is different in orientation, being oriented west-east. House C is bigger in size than the

other two houses; it is 9.5m wide while its length is not defined since only the inner part of the house is preserved. This consists of three rooms: room *g* measures 3.50m x 2.40m, room *h* measures 3.50m x 3.0m while room *i* measures 3.50m x 0.80m internally.

Ptolemaic well

The excavation in the upper level revealed also a well to the south of house A. It is built of red-bricks in alternate courses laid on bed and edge. The well is 1.50m in diameter on the outside and 1.0m in diameter inside, while the size of the bricks is 22cm x 11cm x 6cm (Figs.3-4). In the northern and southern sides of the well there are small gaps at regular distances used in descending the well.

The well was cleaned – excavated – up to 5.25m deep. At a depth of 1.0m it was found that the wall was demolished on its southern side. The collapsed bricks were collected and reused in the restoration of the well.

The northern part of the excavation, lower level (Fig.1)

During excavation part of a casemate foundation for a large building, most probably a palace or a major house, was discovered. It represents the north-western corner of the building while the rest of it extended to the south and the east under the later strata (Figs.5-6). The uncovered part measures 18.25m north-south and 12.50m east-west. The building consists of a large rectangular hall, labelled *k,* in its south western side that measures 6.20+m x 4.0m. To the east of this hall two rectangular rooms were discovered. The southern room, *l*, measures 5.70m x 2.40+m, while the northern room, *m*, measures 5.70m x 2.0m. Within the western hall a small square building 1.0m long was uncovered with walls 20cm thick. A small space, 30cm wide, separates this building and the thick wall. It was noticed that this area had been deliberately filled with homogeneous ash, suggesting the presence of a group of magazines in this part of the building. Similar features were discovered in 2001 to the west of the site (Figs.7-9).

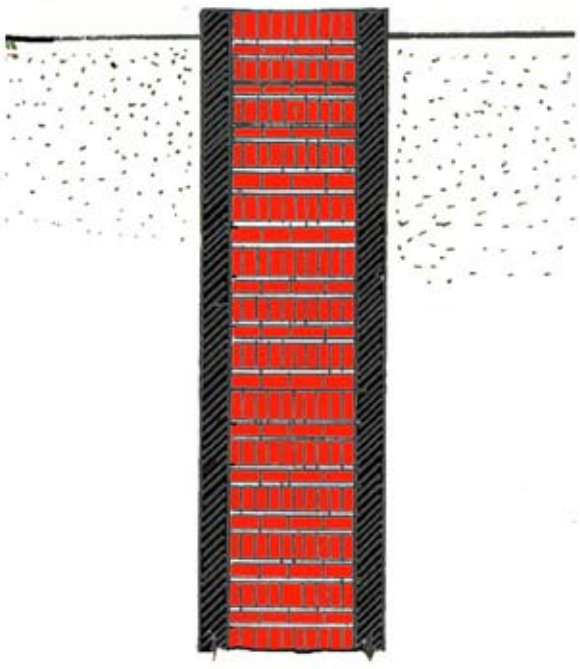
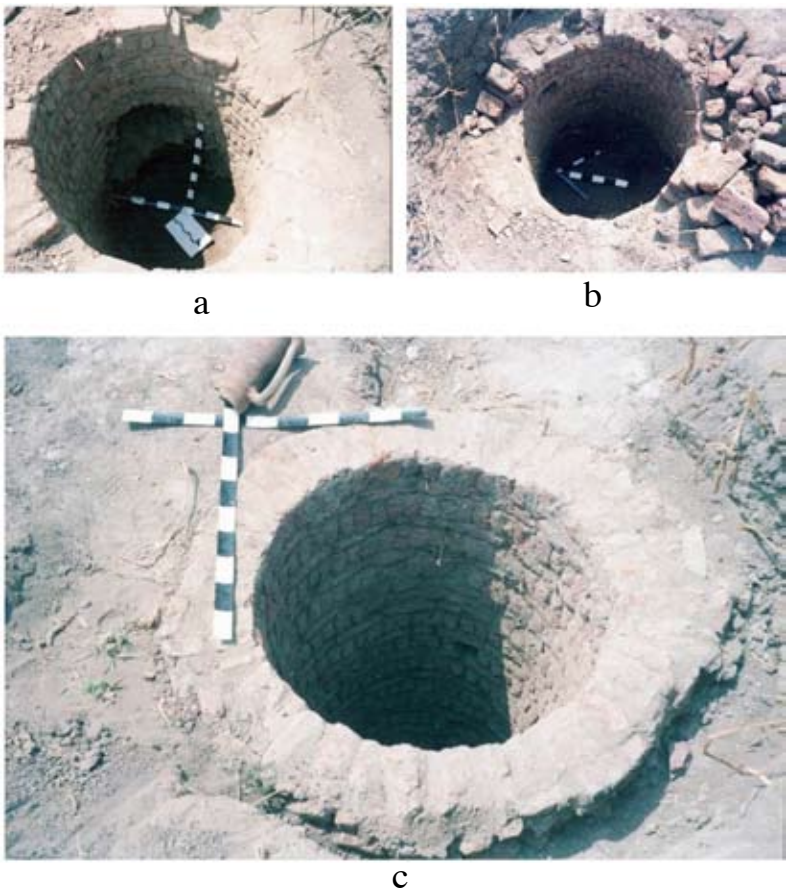


Fig.3. Section drawing of the Ptolemaic well.



a b c

Fig.4, a-c. The Ptolemaic well in the upper level.

Fig.5. Excavation site view from the north showing the casemate foundation of the lower level, and the buildings of the upper level in the back. Photograph: Aiman Ashmawy.

Fig.6. The lower level of the excavation site in 2002. View from the east. Photograph: Aiman Ashmawy.

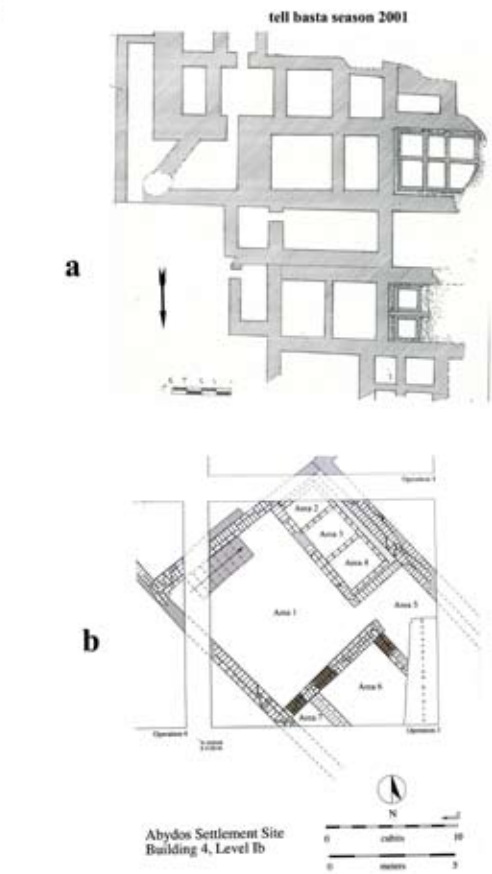


Fig.7. a: plan of the excavation site at Tell Basta in the 2001 season. Courtesy: SCA.
b: Abydos chambered silos in building 4, after Adams 2007.

Fig.8. The excavation site at Tell Basta in 2001. View from the south showing the chambered granaries in the back. Photograph: courtesy of Hisham Abd el-Moamen.

Fig.9. The chambered granaries at the 2001 site at Tell Basta after re-excavation in 2012. Photograph: Aiman Ashmawy.

As for the northern part of this building it consists of two rectangular halls, the southern one, hall *n,* measures 2.30m x 7.50m while the northern one, hall *o*, measures 3.50m x 7.50m. To the east of these halls parts of two other rectangular rooms *p-q* were discovered; they were not fully excavated since the floor rises at this part for about 2.0m.

Silos (Figs.10-11)

While excavating hall *o* two silos with vaulted roofs were uncovered. They were built of mud bricks and coated on the outside with a layer of mud which was still in a good state of preservation when discovered. The silos were also covered with a layer of homogenous ash. It was noticed that a wall of the big building cuts one of the silos indicating that these silos belong to an earlier phase.

Fig.10. Vaulted silos in the lower level of the excavation site, view from the north. Photograph: Aiman Ashmawy

Fig.11. Detail of one of the silos showing the outer mud coating. Photograph: Aiman Ashmawy.

Small finds

During this season many small finds were discovered mostly coming from the debris in the surface layer and the well. They reflect aspects of daily life at the site and include two scarabs, models of large pottery jars (Fig.12), part of a large Bes jar (Fig.13. 18.5cm high, 25.5cm in width) and terracotta figures representing humans in grotesque shape, probably part of representations of horse riders wearing Phrygian caps (Fig.14). The models of large pottery jars came from the domestic area and may be regarded as children's toys - potters nowadays produce models of the big jars they make and farmers buy them, together with full-size ones, as toys for their children.

Fig.12. Models of large pottery jars. Photograph: Aiman Ashmawy.

Fig.13. Sherd of a large Bes jar. Photograph: Aiman Ashmawy.

Fig.14. Heads of terracotta riders wearing 'Phrygian caps'. Photograph: Aiman Ashmawy.

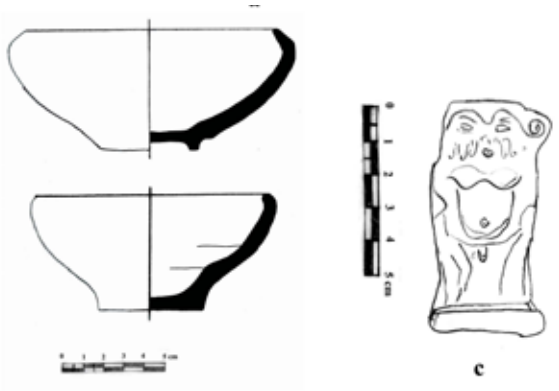


Fig.15. Two pottery bowls from the well, and a Bes terracotta. Drawings: Aiman Ashmawy.

Fig.16. A terracotta head of Harpocrates. Photograph: Aiman Ashmawy.

Fig.17. A terracotta head of Hathor as a cow. Photograph: Aiman Ashmawy.

While cleaning the well many complete bowls and plates were discovered on different levels beside terracotta figurines representing Bes (Fig.15), Harpocrates (Fig.16, measuring 6.5cm x 6.0cm) and Hathor as a cow (Fig.17, measuring 7.2cm in length 5.0cm in height). Inside the well some organic materials were also discovered, including cow bones and fish bones, especially those of catfish, beside sweet water shells - giving an idea about diet at that time.

Commentary

Dating the site

The pottery discovered in the well and the upper level, including bowls and plates and two amphora of torpedo type, beside the terracotta figures discovered in the well allow us to date the well to the early Ptolemaic Period and the houses to the 30th Dynasty. The pottery of the lower level helped to date the building to the 26th Dynasty and the dating was confirmed by French colleagues from the French mission at Tanis/San El-Hagar who visited our excavation in 2002 and kindly commented on the pottery at the site .

Planned settlements at Tell Basta

In spite of the small area preserved of the upper level of the excavation it was noticed that the houses follow a model plan which consists of a hall and three rooms at the back. This shows that pre-planned settlements were designed by the authorities in the city.

Putting these buildings in their historical context it is suggested that the houses in the upper level represented part of a workmen's town at Tell Basta which was used later for the priests.

Planned settlements are known in Egypt at least from the Old Kingdom [2] and were used increasingly from the Middle

[2] Badawy, A., 'Orthogonal and Axial Town Planning in Egypt' *ZÄS* 85 (1960), p.3; Fairman, H. W., 'Town Planning in pharaonic Egypt', *The Town Planning Review* 20, No. 1, (1949) p. 36.

Kingdom. Workmen's towns from the Middle Kingdom were discovered at Kahun,[3] Tell el-Daba in area F1 and at Ezbet Rushdi,[4] Abu Ghalib and Kasr es-Sagha,[5] and from the New Kingdom at Tell el-Amarna[6] and Deir el-Medina.[7] This town at Tell Basta – if our interpretation is correct – would be the only known workmen's town from the Late Period

There are several reasons for suggesting a workmen's town existed at Tell Basta:

- The plan of the houses is not random.
- It is near the temple of Bastet (the work site) like the other workmen's towns known from Egypt at Tell el-Daba, Kahun, Abu Ghalib and Kasr es-Sagha, Tell el-Amarna and Deir el-Medina
- The size of the houses at Tell Basta is similar to the other workmens' houses
- Housing for workmen would have been needed for the big building project at Tell Basta carried out by Nectanebo II. He added a hall to the temple of Bastet, considered to be one of the most important and largest buildings erected by the king.[8] This hall contained at least eight monolithic naoi of granite.[9]

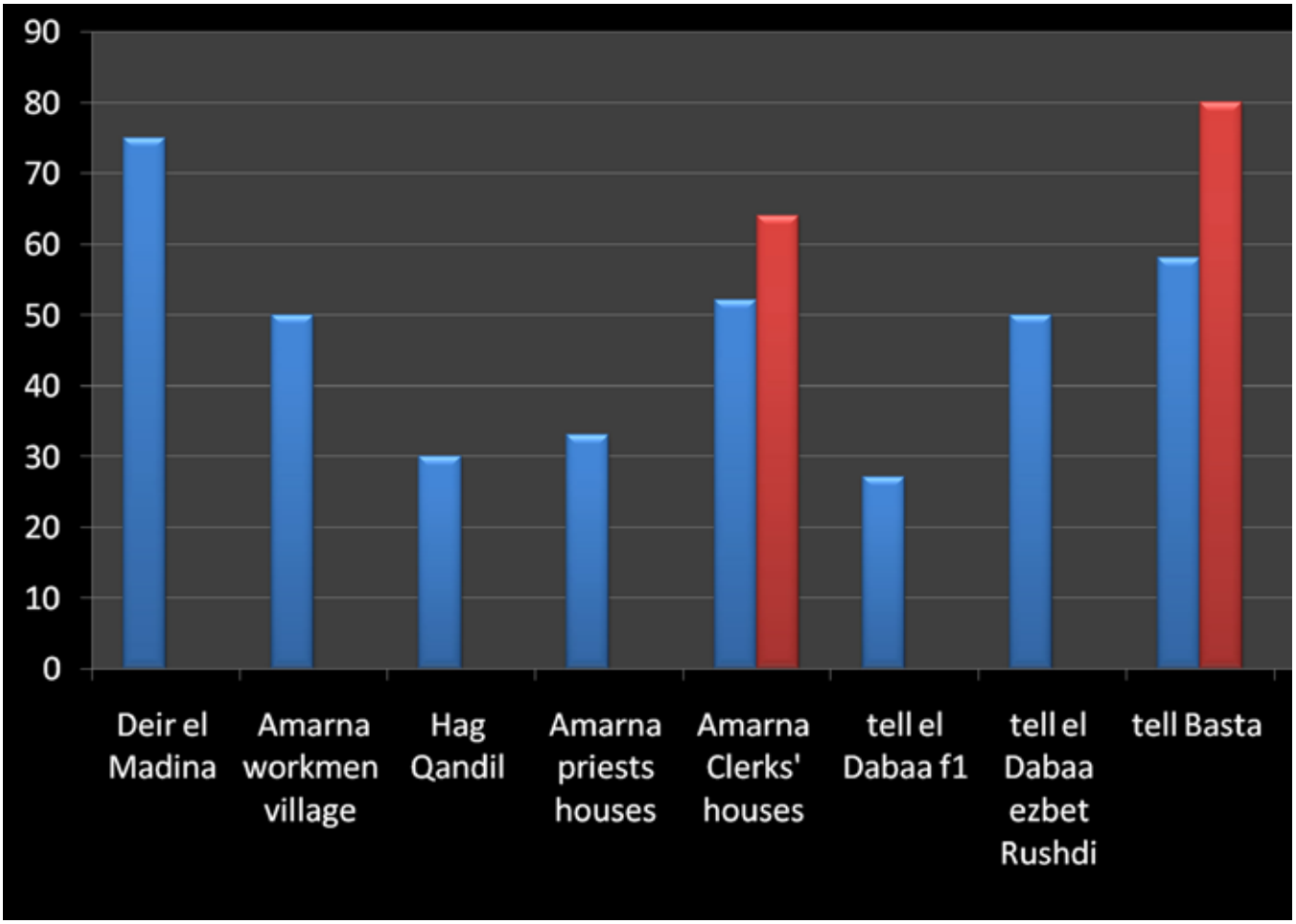


Fig.18. Diagram showing comparative sizes of workmen's houses in ancient Egypt. The scale at the left is in square metres.

[3] Fairman, H. W.,1949,p.43; Badawy, A.,1960,p. 4.

[4] Bietak, M., *Avaris, the Capital of the Hyksos. Recent Excavations at Tell el-Dab'a*, London, 1996. p.9, fig.5-6; id., 'Houses ,palaces and development of social structure at Avaris' in *Cities and Urbanism in ancient Egypt* edited by M. Bietak, E. Czerny and Irene Forstner-Müller, Wien 2010, p.17, fig.10-11; Irene Forstner-Müller, 'Settlement patterns at Avaris: A study of two cases' in *Cities and Urbanism in ancient Egypt* p.103, fig 2,2b, p.107; E.Czerny, 'Fragments of information. Observations concerning the architectural layout of the Middle Kingdom settlement at 'Ezbet Rushdi' in *Cities and Urbanism in ancient Egypt*, p.74-77,fig 7-8.

[5] Troy, L., 'Towns and cities in ancient Egypt', in *Development of Urbanism* 1993 ,p.16

[6] Badawy, A., *A History of Egyptian Architecture. The Empire (the New Kingdom). From the Eighteenth Dynasty to the End of the Twentieth Dynasty. 1580-1085 B.C.*, Berkeley and Los Angeles, University of California Press, 1968, p.110 ff; Fairman, H. W.,1949 , p.44-45, fig.9.

[7] Fairman, H. W.,1949, p.46-48,f ig 10-12; Badawy, A., 1968, p.61ff.

[8] Habachi, L, *Tell Basta*, SASAE Cahier N°22. Le Caire, 1957, p.71

[9] Spencer, N., 'The great naos of Nekhthorheb from Bubastis' in *Egyptian Archaeology* 26 (2005) p.21.

Grain storage technology in ancient Egypt

The discovery of silos and square magazines surrounded by homogenous ash showed that the storage process was to put the grain into the magazines. The Egyptians took several measures to protect the grain in the magazines from insects and mites for long periods, so that they would have sufficient stocks in the periods of poor harvests and famine caused by low Nile inundations. These measures could keep the grains fit for use up to at least seven years, as mentioned in the holy Quran and the Bible

The Egyptians adopted several methods to protect their crops; these included using sand, ash and a special type of clay.

Sand

Sand was used in magazines as a desiccant material or as a deterrent to rodents' penetration of the storage chamber since the First Intermediate Period at least. Matthew Adams published a building from Abydos (Fig.7b) with rectangular magazines with a double wall with a narrow space between the walls similar to those discovered at Tell Basta in the 2001-02 excavation, but filled with sand instead of ash (Fig.7a).[10]

Sand was used also under the silos in the New Kingdom fortress at Tell Hebua in north Sinai and this custom is still used nowadays by the Bedouin in this region to protect their crops.[11]

Ash

Ash was used by the ancient Egyptians to protect grain from insects and mites from the Old Kingdom at least and there is a possibility that the layer of ash discovered under the silos in house E in the Khentkawes town at Giza, which was excavated by Hanan Mahmoud under the supervision of Mark Lehner, was used intentionally to protect those silos.[12] At Tell Hebua a layer of ash was put under the silos to protect the grains from insects.[13] In the chambered magazines the Egyptians filled the narrow space between the magazines and the main wall with ash to protect the magazines in the same way sand was used at Abydos as mentioned above. Using ash to protect the grain continued till modern days, but instead of putting the ash round the silos, it is now mixed directly with the grain making it necessary to wash the grain in the Nile or a spring using a special basket. It is then dried in the sun before grinding.

Mud

Mud was also used as a material to protect crops in the silos. During his excavation at Tukh el-Qaramus in 1907 Edgar uncovered a very thick layer of black mud filling the upper part of the silos. When it was examined by Lucas he mentioned that it represents a special type of mud from a nearby area without giving any explanation for its function.[14] In 1996-97, I took part in the SCA excavation at Tukh el-Qaramus and during this excavation we uncovered a layer of homogeneous black mud on top of the silos and three footprints in this mud showed that it was used wet.[15] This type of mud was used to isolate the grain inside the silos from exterior effects including humidity and heat. The ancient Egyptians recognized the opacity of the black homogeneous mud very early. At Tell el-Daba the Austrian mission under the direction of Manfred Bietak uncovered a water supply system of limestone which was coated with thick layer of special black mud.[16] This was for sure to prevent penetration of the ground water into the limestone pipe. In modern

[10] Matthew D. Adams, 'Household silos, Granary Models, and Domestic Economy in ancient Egypt' in *The Archeology and Art of ancient Egypt*, edited by Zahi A. Hawass and Janet Richards. CASAE 36 (2007). p.5.

[11] Abd El-Maksoud, M., *Tell Heboua (1981-1991),* Paris 1998, p.115.

[12] Personal communication. For the datails of the excavation of House E, see *AERA Annual Report 2008-2009*, p.10-13.

[13] Abd El-Maksoud, M., 1998, p.115.

[14] Edgar, C.C., 'Report on an excavation at Toukh el-Qaramous' in *ASAE* 7 p.209 and footnote no.2.

[15] Hisham Abd El-Moamen, Aiman Ashmawy and Ahmed El-Kharadly, *Report on the SCA excavation at Tukh El-Qaramus season 1996-1997* unpublished.

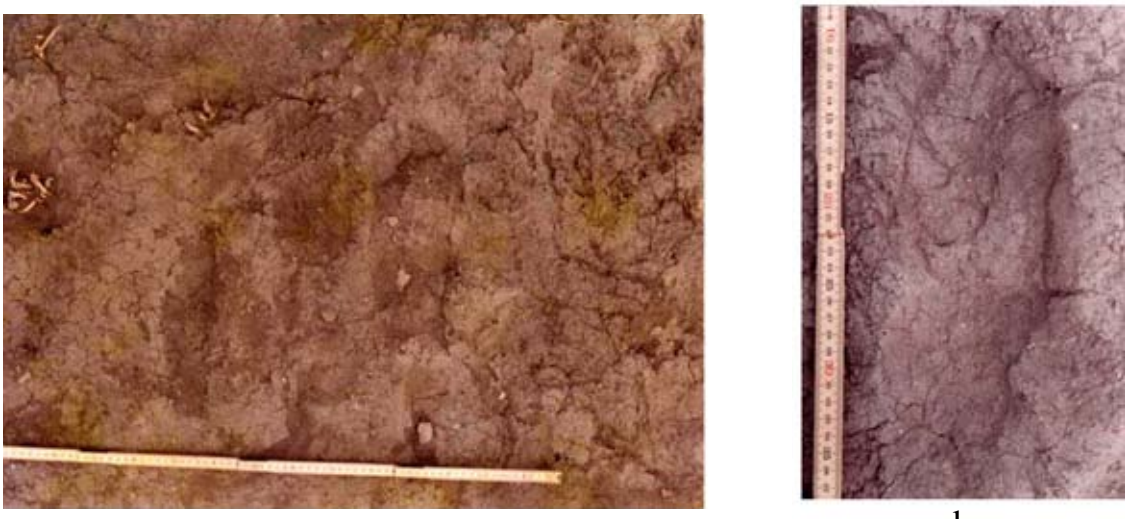
[16] Dorner, J., 'A late Hyksos water-supply system at Ezbet Hilme' in *Egyptian Archaeology*, 16 (2000) p.12-13.

times Egyptians store their crops in pits or granaries buried under the ground, called *matmorah* plural *matamir* which means 'a pit or a place under the ground which were prepared to keep food'.[17]

Another noteworthy process concerning grain storage was mentioned in the holy Quran and the Bible - to keep the grain on its spikes inside the granaries.

a b

Fig.19, a-b. Water supply system at Tell el-Daba, of lime coated with a thick layer of special black mud. Photographs: J. Dorner (2000)



a b

Fig.20, a-b. Three foot prints in mud from the magazines at Tukh el-Qaramus. Photographs courtesy Hisham Abd el-Moamen.

[17] لسان العرب لابن منظور , طبعة دار المعارف ص 2702