Dakhleh Oasis Project:
and 1993–1994 Field Seasons

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Oxbow Books
Oxford and Oakville
Excavations in the Cemeteries of Ismant el-Kharab

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Two cemeteries associated with the settlement of Ismant el-Kharab have been partially excavated by the Dakhleh Oasis Project during four field seasons: 11–14 February 1991, 18–29 February 1992, 17 November to 12 December 1992 and 24 November to 15 December 1993. Archaeologists on site were P. Sheldrick, Chatham, Ontario, E. C. Brock, Canadian Institute in Cairo, and M. Birrell, Macquarie University. The physical anthropologists were J. E. Molto, Lakehead University, and S. Fairgrieve, Laurentian University. Preliminary soft tissue analysis was undertaken by M. Cook, Henry Ford Hospital, C. A. Marlow, University of Durham, and M. Zimmerman, University of Pennsylvania. Full autopsies of mummified remains were made by A. Aufderheide and M. Zonis, University of Minnesota, and L. Cartmell of Ada, Oklahoma. Ceramics were studied by C. A. Hope, Monash University/Museum of Victoria, and S. F. Patten, Macquarie University. The palaeobotanist was U. Thanheiser, University of Vienna. Work on site was facilitated by representatives of the Egyptian Antiquities Organization, notably Ashraf es-Sayed Mohammed.

The two cemeteries are located north of the settlement, on either side of the wadi which runs from the north-east to the west of the settlement (Hope 1988, 162). The cemetery west of the wadi (referred to herein as the West Cemetery), consists of a large number of small chamber tombs. It is designated 31/420-C5-1 by the Dakhleh Oasis Project and is assigned to the Ptolemaic and early Roman periods on the basis of its ceramic and other artefactual material. The East Cemetery (31/420-C5-2), located on a broad plain east of the wadi, consists of simple rectangular pit graves cut into the red Nubian clay, some of which retain mud-brick superstructures and enclosure walls (Mills 1982, 99). The graves in the area of the cemetery excavated so far are tentatively dated to the late third to early fourth centuries CE.

The West Cemetery (31/420-C5-1)

The West Cemetery is located in a progression of low hills to the north-west of Ismant el-Kharab. The hills form the western edge of a wadi which runs from the north-east to the south-west of the settlement. The predominant geological matrix of the area is the red Nubian clay. This is capped in the higher sections of the hills by a 50–60 cm stratum of friable green-grey shales, overlaid by another of orange-white, fine-grained sandstone. The area is covered with a fine layer of sand and randomly scattered flint nodules. Bleached bones and pottery sherds from disturbed graves are also present on the surface. The hills are relatively steep, rising 6–8 m above the wadi bed, to a height of 126 m above sea level.

The excavations in the West Cemetery have been concentrated in a 200 m section of the hills between the Mut–Balat road, which passes through them, and the mouth of a subsidiary wadi. The cemetery is far more extensive, spreading to the south-west and north, with its limits yet to be defined. The area under investigation is a weathered north-south terrace of sandstone and shale rising 6 m above the level of the wadi bottom. Three small hills of red Nubian clay on the eastern side of the terrace and a clay outcrop immediately north of the Mut–Balat road have also been excavated.

Preliminary investigations took place in under the supervision of P. Sheldrick during February 1991. More detailed investigation took place in the following two seasons when, together with E. C. Brock, he excavated

1 Originally numbered 31/420-C6-1; for a brief description see Mills 1982, 98.
2 The strata are similar to those described by Zittel in his observations of the geology around Tenida, given in Beadnell 1901, 79.
Figure 1 West Cemetery: Tomb 9 plan and section.
Tombs 1–6. In March 1993, E. C. Brock cleared Tomb 7, a structure which had been recently damaged by earth-moving equipment during road works, and later that year M. Birrell and P. Sheldrick excavated a further eight chamber tombs (Tombs 8–15).

The 15 tombs can be divided into two basic groups depending on their physical location in the cemetery: Group 1 tombs are cut entirely into the red Nubian clay and Group 2 tombs are those dug into the clay of the higher sandstone terrace.

**Group 1**

Eight of the tombs which have been excavated were cut entirely into the red clay hills east of the sandstone terrace, and in the isolated outcrop north of the road: Tombs 1–4, 5, 7, 9, and 12. The tombs in this group are situated in close proximity, taking advantage of all available space. They have no particular orientation but follow the contours of the hills.

The entrance to each tomb consists of a deep, narrow passage carved from the Nubian clay. An example is Tomb 9 which has an entry passage 130 cm long and 70 cm wide, descending in three steps of uneven height to 50 cm below the surface (Figure 1). In Tomb 1 the steps are reinforced with mud bricks. The sides of the entrance passage are coated with a smearing of mud plaster or are lined with mud bricks. In some tombs (e.g. Tomb 5), a mud-brick arch was apparently built over the entrance.

Roughly-carved sandstone blocks are occasionally inserted into the walls of the entrance passage on either side of the doorway, often at a considerable height above the floor of the passage (Figure 1). This is the situation in Tombs 1, 3 and 12. The stones are held in place by a coarse mud plaster. A roughly-squared sandstone block was used to seal each tomb, usually placed up against the door jambs (Plate 1). The jambs of Tomb 1 have narrow grooves cut into their outer surfaces, indicating that a portcullis stone was placed between them, though no such stone was found in situ. Tomb 1 also had a wooden door at some stage, since a door socket was found plastered between sandstone slabs just within the entrance.

A step of 45 cm or less gives access from the entrance passage to the floor of each chamber. The dimensions of Tomb 2 are fairly typical and will serve as an example: 365 cm long by 260 cm wide, with a maximum ceiling height of 100 cm. The walls and ceilings of the tombs are slightly curved to give stability. A few tombs have pillars of native clay retained to ensure the strength of the ceiling (e.g. Tomb 5) or have separate chambers divided by walls (Tomb 1). Natural faults in the clay structure of the walls were filled with mud bricks plastered over with mud.

Tomb 5 has two shallow pits in the southern extension of the chamber. The pits have a north-south axis and are quite shallow; the western one is 92 cm by 54 cm with a depth of 22 cm. They were designed presumably for burials of children.

The shape of these tombs is similar to those excavated at ‘Ein Tirghi, and now dated to the Ptolemaic Period on

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Plate 1 West Cemetery: Tomb 12 entrance.
the basis of the ceramic material (Tombs 33, 35 and 37; see Frey 1986, 93, fig. 2). The continuity of this architectural form is clearly a result of the material in which they are carved.

**Group 2**

The sandstone terrace to the west contains less regularly-spaced tombs, carved into the red clay beneath the shale and sandstone strata. Such tombs are: Tomb 6, 8, 10, 11, 14 and 15. Tomb 13 is carved into the clay hill south of the entrance of the subsidiary wadi but the form of the entrance passage, the artefacts in the tomb and the treatment of the bodies link it with the tombs of this group.

The tombs have no regular orientation but follow the contour of the shale stratum. The entrance passage is carved into the red clay and consists of a circular or roughly squared pit up to 80 cm in diameter and normally only about 30 cm deep (Tomb 8). The doorway is furnished with roughly-squared sandstone jambs, a
sandstone threshold embedded into the clay and a lintel supported by the jamb. All of the stonework was held in place by mud plaster (Plate 2). The entrance to each tomb was blocked with a sandstone slab placed against the outer face of the doorjamb or a block inserted into a groove in the doorjamb (Tomb 15). In all examples the blocking stone was either pushed back from its intended position or was missing altogether.

The chambers are small, very roughly-carved rectangular rooms with low ceilings. There is normally no step from the level of the entrance passage to the surface of the tomb floor. The dimensions of Tomb 8 are typical of its group: 370 cm long by 220 cm wide and a maximum ceiling height of 98 cm (Figure 2). In many cases the shale and sandstone strata of the façade was reinforced with sandstone and mud-brick walls near the entrance (Tombs 8 and 11). Natural faults in the walls were filled with mud bricks and small stones plastered over with mud (Tomb 11). The sandstone above the door of each tomb had been subjected to erosion, enabling wind-blown sand to accumulate inside, normally to within 15–20 cm of the roof.

Tomb 15 is unusual amongst those in Group 2 in having a recess carved into one wall. This is located at floor level in the south wall and is 30–50 cm wide, 190 cm long and 43 cm high. From its size, the niche was presumably designed to contain a single inhumation.

Inhumations

The tombs in both groups were clearly used for successive burials. The only exception is Tomb 10 which had six bodies systematically laid out on the floor of the chamber, indicating perhaps that they are contemporary (Plate 3). The bodies in the West Cemetery were not placed in coffins, and generally have no protection except for their wrappings, though cartonnage head and foot coverings were occasionally employed. The latest additions to the burial chambers were frequently placed on top of previous inhumations. Disarticulated and disturbed human remains were spread around the rear and sides of each chamber, apparently having been pushed aside to make room for later burials.

The treatment of the bodies and their positioning in the tomb varies between Group 1 and 2. The latest inhumations in Group 1 tombs were generally well-preserved mummified individuals placed with the feet towards the door of the chamber, that is along the axis of the tomb entrance passage. A substantial number of bodies in Group 1 tombs have been mummified: an example is Tomb 2 which contained 42 burials, 15 of which had been mummified.

In the tombs of Group 2, the latest inhumations were skeletons, with disturbed mummified remains located at the rear of the chamber or pushed to the sides. The bodies were almost invariably placed at right angles to the axis of the tomb, with the head to the west (Plate 4). They were simply wrapped and were frequently placed on small
Plate 3 West Cemetery: Tomb 10.

Plate 4 West Cemetery: Tomb 8 Bodies 1 and 2.
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sandstone blocks or large pottery sherds (Plate 3). Tomb 3 contained 31 skeletons, the majority of which were disarticulated. Two of the bodies were wrapped and provided with painted cartonnage masks which have been dated on stylistic grounds to the Ptolemaic period.

In March 1992, five of the mummies from Tomb 5 and one from Tomb 6 were analysed by M. Cook, C. A. Marlow and P. Sheldrick. Autopsies were performed by opening the chest and abdominal cavities. Evidence of internal organs such as heart, lung, diaphragm, bowel, stomach, kidney and bladder were found in a very desiccated condition. The expedition had the use of a portable x-ray machine plus the radiological facilities of the Mut Hospital for developing films. Further autopsies and examinations were undertaken in November 1992 by M. Zimmerman. In November–December 1993 A. Auferheihe, M. Zonis and L. Cartmell performed autopsies on 15 mummified individuals. The thoracic and abdominal cavities were entered by removal of the ventral walls. The viscera were removed and samples of soft tissue were taken from each body for analysis. Skulls were examined by E. Molto. On completion of the autopsies, remaining soft tissue and skeletons were reburied.

The examinations revealed that some of the bodies had apparently desiccated in the tomb, since they had not been eviscerated and the internal organs were found intact. The best preserved bodies had all been treated with a black resin applied either to the body surface or to the linen wrappings. Resin was also frequently detected in the body cavities. The cranial cavity of each mummified body had been pierced by a trans-nasal craniotomy through the ethmoid bone, with resin applied to the inside of the skull. In such cases, the resin collected in the posterior of the cranium. The nostrils were normally plugged with wads of resin-soaked linen. Resin was also found in the thoracic cavity having entered either via the mouth and trachea or an opening into the pleural cavity. In several other bodies, the trunk cavities had been eviscerated via an abdominal incision and resin and resin-soaked linen was introduced into these cavities.

A few poorly preserved bodies had been stabilized and reconstituted with palm ribs which had been inserted down the spinal column (Tomb 8, Body 5; Tomb 12, Body 1). The projecting end of the stick, normally 1–1.5 cm in diameter, was wrapped in linen and passed up through the foramen magnum into the skull. Other poorly preserved bodies were tied to palm-rib racks. The racks were made from long pieces of rib bound to short lateral rods with palm-fibre twine or cloth. An autopsy on Body P from Tomb 2, found tied to one of these racks, revealed that the remains consisted of parts from four different individuals. Loose racks, not associated with a particular body, were also found in Tombs 2, 3, 4 and 7.

Wooden rods were also used to maintain the form of skeletons. Body 2 in Tomb 13 was that of a small child which had been carefully wrapped and decorated with a painted cartonnage mask (Plate 7). The skeleton had been consolidated by two pieces of unworked wood which were inserted into the cranium via the foramen magnum.

The cloth used for wrapping the mummified bodies of the West Cemetery varied in quality and quantity. The preservation of the material depended on the amount of black resinous material applied to the outer surface of the body. Where there was a large quantity of resin, the linen has concreted and almost impossible to remove. The wrapping on Body B from Tomb 3 will serve as an example. The first layer of cloth was wrapped around the body and right arm leaving the left arm free. The entire body was then wrapped in a linen sheet which was held in place by a large quantity of linen bandaging. Over this layer, the body was wrapped in three pieces of fringed cloth which were doubled over the body. The ends of the cloth were folded over the feet so that the frayed ends rested against the shins. A circular linen wad had been placed under the head and was wrapped up with the cloth. The entire body was then wrapped in numerous layers of linen bandage (7–8 cm wide) which covered the entire body and the head. A separate, short linen bandage was tied around the neck as the final wrapping.

Poorly preserved bodies from Group 2 tombs (such as Tomb 8 body 1) had linen wadding around the abdomen and over the legs. This was covered with short pieces of coarse cloth and successive sheets of finer quality linen tied down with short lengths of bandage. The body was then covered with a red linen shawl which extended from neck to knee, affixed around the neck with a short linen bandage.

Tomb 5 contained the disturbed remains of two mummified bodies which retained a layer of gold foil applied directly to the skin of the hands, arms and face. Both bodies were disarticulated, presumably as a result of attempts to remove the gold.

Brief description of tomb contents

All of the tombs in the West Cemetery had been disturbed at some time prior to excavation. Nearly every tomb contained painted and gilded cartonnage in fragments on the tomb floor or in the sand fill of the entrance. The best preserved cartonnage was found in Tomb 10. A painted –

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3 Similar palm-rib racks were found at Dush, for which see F. Dunand, J-L. Heim, N. Henin, and R. Lichtenberg, Douch I: La necropole, Cairo, 1992, 226.

Plate 5 West Cemetery: Tomb 10 Body 1.

Plate 6 West Cemetery: Tomb 10 Body 1.

Plate 7 West Cemetery: Tomb 13 Bodies 2 and 3.
Plate 8 West Cemetery: Tomb 13 Body 3.

Plate 9 West Cemetery: Tomb 13 ceramics.
and gilded-head and chest cover, and a foot cover were found in situ on Body 1 (Plates 5 and 6). The cartonnage comprises a coarse linen coated with white plaster. A layer of thick gilding and painted decoration had been applied to the outer surface. The depictions on the head covering include seated deities before offering stands, hawk heads mounted by solar disks, and sphinxes with mumiform figures on their back. The sphinxes have been identified by Olaf Kaper as representations of the god Tutu, the principal deity of the Main Temple of Kellis.

Painted cartonnage head covers were also found on Bodies 2 and 3 in Tomb 13 (Plate 7). The well-preserved example on Body 3 (Plate 8) has elaborate painted decoration and an applied stucco wreath, as do the other examples from the cemetery; over its feet was a fragmentary cover. Painted-cartonnage foot covers, decorated with scenes of ba-birds and seated deities, were found also in Tombs 3, 4 and 8. These had been disturbed and could not be associated with particular bodies.

A number of tombs contained painted wooden statues. A painted wooden ba-bird in Tomb 1 was found in the south-eastern corner of the chamber. A canine-headed figure, possibly to be identified as Anubis, was found in Tomb 5, and another was found in Tomb 6 against the northern wall. Two gilded and painted ba-birds were found in Tomb 10. The first represents the ba-bird with outstretched wings. A piece of linen bandaging passed between the feet and tail of the bird presumably to attach it to a body. It was found on Body 5 with the right wing broken. The second ba-bird was found on the floor of the tomb beside Body 5, with the head facing south. It had two slots for the insertion of wings, which were missing.

Two small sandstone offering tables were found in the entrance passage of Tomb 5 and another was located within the doorway of the tomb near the south wall. The first table has the representation of four loaves of bread on the upper surface. The second depicts five loaves of bread, a one-handled spouted jug and a jar with flaring neck. The third table depicts two spouted libation vessels and two circular loaves of bread.

Four of the tombs in the West Cemetery contained pottery (Tombs 1, 2, 9 and 13; see Patten, herein). A spouted jug with two handles (Patten, herein Figure 3.36) was found outside Tomb 1 in the sand fill of the entrance passage. A large jar was also found in the entrance passage of Tomb 9 (Patten, herein Figure 3.37). A simple spouted lamp and a small jar (Patten, herein Figure 3.35) were found in the sand fill within Tomb 2. Tomb 13 contained four vessels and a small woven fibre basket. Two small jars, one of which had horizontal bands of painted decoration, retained their clay seals wrapped in linen. The jar with the horizontal bands (Patten, herein Figure 3.32) was found on the chest of Body 1, the other jar (Patten, herein Figure 3.33) was resting against the north wall and a shallow bowl (Patten, herein Figure 3.29) lay in the centre of the tomb (Plate 9). A third jar (Patten, herein Figure 3.34), coated with black resinous material, was found against the east wall beside the woven basket.

Each tomb contained miscellaneous botanical remains, with small bouquets of rosemary found in Tombs 3, 4 and 15.

Preliminary study of the objects from the tombs in the West Cemetery suggests that it was in use from the Ptolemaic period into the early Roman period. The ceramics and cartonnage from Tomb 13 have been assigned to the Ptolemaic period, the cartonnage on Tomb 10 Body 1 has been dated to the first century CE and the spouted jug from near the entrance to Tomb 1 to the first-second centuries CE. The large jar from Tomb 9 predates the late third century CE and may be as early as the Ptolemaic period.3

The East Cemetery (31/420–C5–2)

The East Cemetery is located on a low undulating rise approximately 200 m north-east of the northernmost mud-brick mausolea in the North Tomb Group (Hope 1988, 161–2; Winlock 1936, 21, Plates XI–XII). The cemetery occupies a plateau which is three metres above the base of the main wadi and is separated from the northern end of the North Tomb Group by a deep dry rivulet. The surface of the plateau is covered with wind-blown sand, flints and limestone pebbles, pottery sherds and bleached human bones. Mud-brick enclosure walls, low mud-brick superstructures and grave pits are clearly visible. The cemetery extends for at least 150 m east–west and 60 m north–south. It is densely filled with pit graves cut into the red Nubian clay. The surface has been subjected to wind erosion, causing many of the grave mouths to be exposed. The pits ordinarily contain single inhumations, the bodies placed supine with the head on the west.

The February 1991 examination of the area by P. Sheldrick was designed to determine the nature of the cemetery. Test excavations were begun at the north-west corner of the rise. Systematic excavation took place in November 1992, when he began clearing a 10 m by 10 m area at the western edge of the site. This region is dominated by two mud-brick enclosures containing pit graves with mud-brick superstructures. These are surrounded by isolated graves with superstructures and a great number of simple pit graves. During November–December 1993, 19 pit graves were excavated by the writer and P. Sheldrick in a 10 m by 10 m square north of the enclosures. A total of 56 graves have been excavated to date (Figure 3).

3 (Eds) This assessment of the dating has been provided by C. A. Hope; information concerning the suggested dating of the cartonnage from the tombs derives from Annie Schweitzer in personal communication to C. A. Hope (September 1998), and of the ceramics from P. F. French and S. F. Patten (1998, personal communication, July).
Figure 3 Plan of the excavated section of the East Cemetery.
Enclosure 1 is a small walled area containing graves with mud-brick superstructures. The walls of the enclosure are preserved to a maximum of three courses. Each corner of the structure is buttressed with additional bricks, and the external dimensions are 338 cm north-south by 337 cm east-west. The exterior and interior surfaces of the walls, as well as the floor of the enclosure, were covered with a coarse white gypsum plaster. A limestone door pivot found in the enclosure indicates that there may have been a door, but there is no other evidence of its existence. Four graves are located within the enclosure; three of adults and one of a child. All bodies were supine and oriented east-west with the heads to the west. The southernmost grave (1D) was the most elaborate and contained the skeleton of an adult female. The pit was lined with mud bricks placed on their edges. These supported a vault of mud bricks over the body. A mud-brick superstructure, preserved to a height of 60 cm, was erected on the surface.

Enclosure 2 is located two metres to the south of Enclosure 1 and consists of a walled area of approximately four square metres surrounding five graves with mud-brick superstructures. Two infants’ graves (2 and 5) are intrusive in the north and east sides. The walls of the enclosure have been badly effected by wind erosion and are preserved to a maximum of two courses. There are traces of mud-brick columns, 60 cm in diameter and composed of wedge-shaped bricks, two at the north-west and one at the northeast corners. There is no indication of columns at the corners of the southern end. The most elaborate grave in the enclosure is Grave 8, which contained an adult female. The superstructure had external dimensions of 230 cm by 86 cm and was preserved to a height of 16 cm (1.5 courses). The sides of this mud-brick mastaba were covered with unpainted mud plaster. The mouth of the pit was 190 cm by 60 cm, and the depth was 133 cm. The lowest 35 cm of the pit were cut at a smaller size (160 cm by 40 cm) producing a ledge around the entire inner surface. Mud-bricks formed a vault resting on the lip of this ledge. The interior of the lowest part of the grave and the top of the gable was lined with straw-tempered mud plaster.

The two mud-brick enclosures are surrounded on all sides by pit graves surmounted by simple mud-brick superstructures. A large grave placed between the two enclosures (Grave 4) consisted of a mound of sand and gravel covered by a single layer of mud bricks coated with white gypsum plaster.

The graves located at a greater distance from the two enclosures have no superstructures but are simple pits cut into the red Nubian clay. These pits vary in length, width and depth depending on the size of the skeleton interred. Children were buried in very shallow graves, and as a result have been exposed by wind erosion. Some infants or foetuses were buried in close proximity to adult graves, and in one instance were buried in shallow pits under the sides of the mud-brick superstructure which covered the adult: Graves 30 and 38 are located under the brick covering of Grave 26.
Each grave had a single inhumation which was placed on the hard clay at the bottom of the pit. No coffins were used. The bodies have all been reduced to skeletons by the action of ground water, but they are generally undisturbed. The hands were placed over the pubic region or beside the thighs; in the majority of the burials of females the former position was usual.

The bodies in the East Cemetery were simply wrapped in linen cloth which usually does not survive apart from loose rags around the feet of adult skeletons. Some of the infant wrappings are better preserved. Grave 56 contained a wrapped infant with some soft tissue remaining on the lower part of the torso and around the legs. A coarse weave cloth had been placed under the body and folded over. The infant had then been placed on a second cloth of finer weave which was folded over the body with the excess cloth doubled back under the head. Fine linen cord was used to bind the wrappings.

Few of the graves contained artefacts. None of the bodies were decorated with jewellery or amulets. Grave 24 contained the supine skeleton of an adult female. A rectangular green glass bottle had been placed over the right shoulder. Its form suggests a date of manufacture in the second century CE (Marchini, herein). Some of the pits contained loose pottery sherds placed over or near the face of deceased infants. In other instances, the entire grave was covered with pottery. The most distinctive ceramic type from the East Cemetery is the so-called pigeon pot (Patten, herein Figure 3.38; also Hope 1979, 190, Plate XIX.11). In Grave 55, belonging to an adult female, large fragments from three pigeon pots and a large painted jar covered the torso and legs of the body (Plate 10). The lower section of a fifth vessel was placed upright, covering the face of the deceased. The ceramic evidence indicates that this cemetery was only in use during the fourth century CE.