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THE ELITE PREDYNASTIC CEMETERY AT HIERAKONPOLIS: 2009–2010 UPDATE

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Recent excavations in the elite cemetery HK6 at Hierakonpolis have revealed two extensive wood-built mortuary compounds dating to the beginning of the Naqada II period. These are not only the earliest evidence for above-ground architecture in a predynastic cemetery, but also indications that complex social and religious arrangements were already in place at this early time, with strong leaders able to marshal labour and exotic resources to express their authority in a variety of ways.

In 2009, investigations in the south-central part of the cemetery uncovered an interlocking network of wooden fences, centring on the large and rich Tomb 16, which enclosed a variety of tombs and tomb groupings. These satellite graves contain not only what may be interpreted as family and courtiers, but also a series of exotic animals, including a wild bull, elephant and hartebeest. Evidence that these animals were held in captivity for some time before their deaths gives insight into the physical reality behind early iconographies of power.

Adjacent to the south, a special precinct has been identified, which contained a series of large pillared or 'hypostyle' halls, an architectural style previously hypothesized for the Predynastic period, but never actually found. These superimposed buildings stretch back for generations and at least one of these multi-columned structures was clearly present when the Tomb 16 complex was in use, apparently serving as a funerary temple. Together, these tomb and temple complexes provide a view of an elaborate mortuary landscape on a scale hitherto unexpected for this time.

Introduction

Roughly 500 years before the formation of the unified Egyptian state, several political centres began to emerge in Upper Egypt whose rulers exhibited their power and status in the outstanding size and wealth of their burials. Over time, they enhanced their status by segregating their tombs within a discrete section of the necropolis or, in the most extreme cases, in entirely separate cemeteries, as demonstrated by the elite U Cemetery at Abydos, Cemetery T at Naqada and HK6 at Hierakonpolis

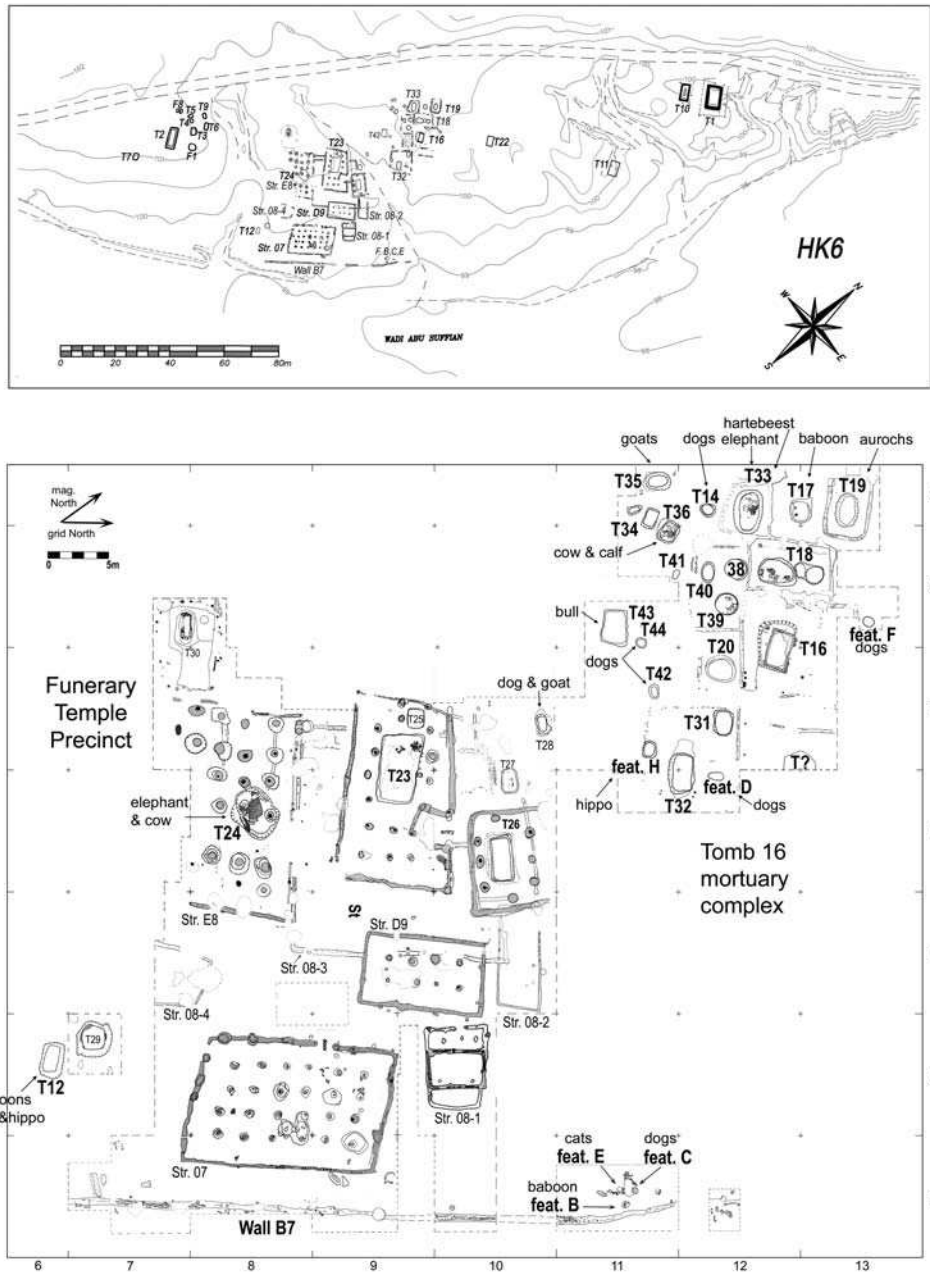

Fig. 1. The HK6 Cemetery general plan and detail of the excavated area in the south-central sector.

(Midant-Reynes 2003: 191–216; Wilkinson 2000). At Hierakonpolis, however, the elite appear to have taken this display several steps further by placing their sizable tombs within impressive architectural settings and surrounding them with subsidiary graves containing an intriguing array of human and animal associates.

The elite cemetery at Hierakonpolis, Locality HK6, is situated approximately 2 km from the edge of the modern cultivation, far back in the great wadi and separated from the numerous other cemeteries at the site (Friedman 2008a). Recent investigations in the elite cemetery have focused on two areas in the south-central sector of the wadi terrace on which it was placed (Fig. 1). In 2005, Tomb 23, the largest known tomb of the Naqada IIB period was fully excavated. At the time of discovery, it was the first to exhibit above-ground architecture, comprising a superstructure of wooden posts and a wood fence enclosure wall (Friedman 2008b). Subsequent exploration of the adjacent area revealed a precinct containing a superimposed series of structures (Fig. 1), which take the form of multi-columned or hypostyle halls, an architectural form hypothetically postulated for the Predynastic age (Ricke 1944: 27–36), but never previously found (Friedman 2008a, 2010). In an attempt to determine the relationship between the tombs and these pillared halls, and establish whether other elite tombs of the period were endowed with similar architectural features, excavations in 2009 were extended northwards to encompass Tomb 16, another large elite tomb of the early Predynastic period. Put together, the results of these excavations now provide a new view of the mortuary landscape at HK6 and allow remarkable glimpses of the power of the early elite and the elaborate and well-developed rituals that must have attended their burials.

The Tomb 16 complex

Discovered in 1998–1999 by the team of B. Adams (2002a, 2004: 47–52), Tomb 16 is a large tomb of the Naqada IC–IIA period into which a brick-lined tomb of the Naqada IIIA2 period had later been inserted in what now appears to be an act of respectful renovation rather than usurpation (Hendrickx 2008: fig. 5). The original tomb measures approximately 4.3 × 2.6 m and is roughly 1.45 m deep, making it amongst the largest known from this period (Friedman 2008b: 1188 note 32).[1]

[1] The size of Tomb 16 is an estimate based on the original 1999 plans. The tomb was partly refilled at the end of the 1999 season and has not been re-cleared.

In addition to its size — and despite its extensive plunder and reuse — it was a very rich tomb and contained a large amount of pottery; 117 vessels of Black-topped (B), Polished-red (P) and Rough (R) ware were documented from Adams' excavations by S. Hendrickx (2008: table 1),[2] including a large bowl (P15b/d) with a post-firing potmark depicting the emblem of the cow goddess Bat, in what may be her earliest attestation (Hendrickx 2005). As a result of renewed exploration along the northern side of the tomb, to this total can now be added at least two more Rough ware jars of the type (R83a) discussed in detail by Hendrickx (2008; see also Baba this volume), a large elliptical R-ware bowl and one White cross-lined (C) bowl (see Adams 2002b: fig. 3, but now with mending pieces; cf. Petrie 1921: pl. 20.C8/9H), which should remove any residual doubt as to the tomb's early date.

In all probability, the two famous ceramic masks also originate from this tomb (Fig. 2). Some fragments were found in the tomb fill, although the majority were collected in surface and subsurface levels to the west and especially to the south, where the beard to the smaller mask was recovered in 2010.[3] Other finds from the tomb and its fill include carnelian ring beads, two biconical gold beads, ivory comb fragments, rock crystal blades, three transverse arrowheads and one tanged arrowhead.

Tomb 16 was uncovered before the possibility of recovering well-preserved wooden architecture in this cemetery was realised. Although a number of wooden posts were noted in the vicinity, their traces were not adequately explored. Re-investigation was therefore necessary and was undertaken in 2009. Despite subsidence along the edges, several large wooden posts, more than 20 cm in diameter, were found at regular intervals around the tomb cut, although the use-phase (Naqada IC–IIA or Naqada III) to which they belong remains to be determined (Fig. 3).[4] The same question, however, does not pertain to the fence of closely

[2] It is now possible that some of the vessels recovered from the fill above Tomb 18 (Adams' context 21, find number 117), which are included by Hendrickx (2008) in the total for Tomb 16, may actually have come from Tomb 18. However, as this involves only 12 Rough jars, it does not significantly diminish the remarkable number of vessels in Tomb 16.

[3] Fragments attesting to the presence of at least eight of these distinctive masks have been recovered from various areas of the cemetery; see Friedman 2008b: 1164, figs. 5, 14.

[4] The postholes, rarely more than 40 cm deep, were packed at the bottom with gravel for stability. A radiocarbon date was obtained from one of the post by Adams: (Beta 142096) 4400+/–60 BP, Cal BC 3335–3195 (2 sigma) and in depth and size they resemble those observed around the Naqada III Tombs 1, 10 and 11 in the HK6 cemetery; see Adams 2000: 24–30, table 1.

Fig. 2. Ceramic masks from Tomb 16 (photo by J. Rossiter).

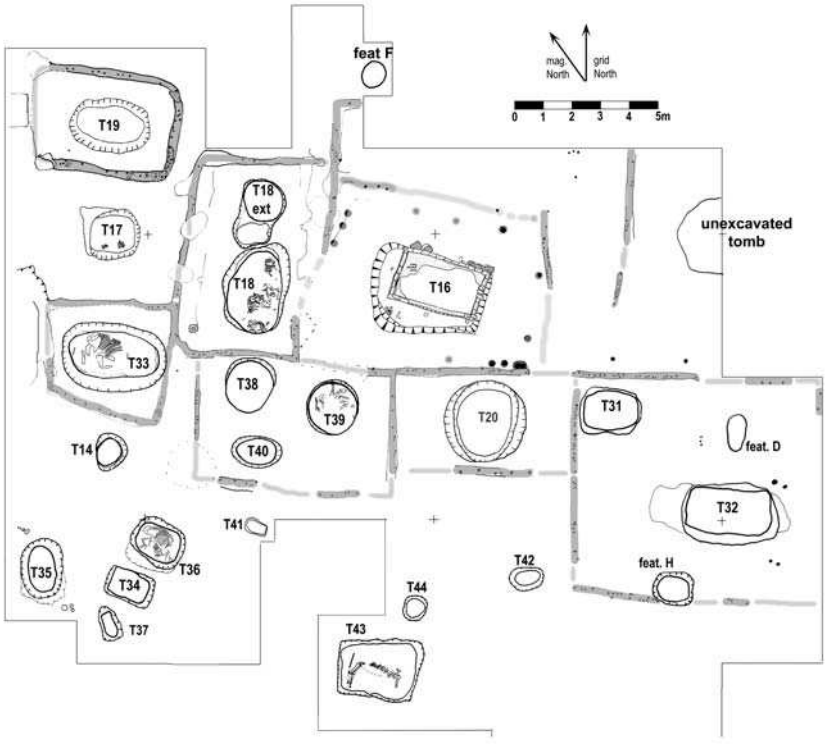

Fig. 3. Plan of the Tomb 16 complex.
The reconstructed outlines of the fences are shaded.

spaced small wooden posts (diameter c. 10 cm) that surrounds the tomb on all four sides and interconnects with other similarly built fences enclosing numerous subsidiary graves and grave groupings, all of Naqada IC–IIA date. These subsidiary graves surround Tomb 16 in an arrangement that seems to anticipate the royal tombs of Dynasty 1 at Abydos, where retainer burials were carefully situated around and beside the tombs of the kings (Vaudou 2008; Reisner 1936), and, as at Umm el Qa'ab, there appears to be nothing arbitrary about their arrangement around Tomb 16.

Mindful that this heavily disturbed complex has only been partly excavated, the evidence uncovered thus far indicates that the inner rung of graves flanking the central tomb was reserved for human burials. Those along the outer perimeter belong to an array of animals (and possibly their keepers), forming a veritable royal menagerie, which included an elephant, a hartebeest, aurochs, hippopotamus, baboons, domestic livestock, dogs and cats.

Human burials

A brief survey of the tombs uncovered to date begins on the south-east (grid east), directly adjacent to the Tomb 16 enclosure, where indications of a large, heavily plundered tomb were detected, although the exact size and location of the tomb cut has not yet been located (Fig. 3: unexcavated tomb). Objects from the disturbed, rain-compacted sediments include decorated bone and ivory and numerous fragments of cut-out jar stands (cf. Petrie 1953: Proto 100P), which suggest that another tomb, possibly also 'reused' in Naqada III times, is present. Its exact relationship to the Tomb 16 enclosure is still unclear, but the fence line to the south is a party wall with the enclosure around Tombs 31–32.

Tombs 31 and 32

Tombs 31 and 32 were found within a large enclosure of remarkably well-preserved wood posts (Fig. 4). Fitting tightly into the north-eastern corner of the enclosure, Tomb 31 is roughly rectangular with rounded corners (1.96 × 1.40 m, 1.2 m deep). It contained two individuals (see Table 1)[5] and, like all of the human burials in the complex, it was badly

[5] Analysis of the human remains from the Tomb 16 complex excavated in 1997–2009 was undertaken by S. Dougherty, University of Indiana.

Fig. 4. Tomb 31 and the preserved wood posts of the fence enclosure (photo by A. Pieri).

disturbed. Nevertheless, some of its original furnishings were recovered, including a large rhomboid-shaped slate palette and several pottery vessels (see Fig. 5, plus at least two R83a jars).

Notable among the vessels is the distinctively decorated White cross-lined (C) bowl, mending portions of which have been previously published as coming from Tombs 14 and Tomb 24 (Friedman 2004: 142, figs. 6–8, Adams 2002b: fig. 2). As the base of the bowl and numerous other pieces were found within Tomb 31, there is now no doubt as to its original provenance and the distribution of the fragments over an area of more than 35 m has been attributed to the activities of plunderers and tourists. Nevertheless, the wide distribution of fragments casts doubt on the attribution of material recovered from surface deposits to specific tombs based on proximity alone. Thus, while large quantities of pottery were recovered from the Tomb 16 complex, only those vessels for which several mending pieces were found in the same or closely related contexts are discussed here as belonging to a specific tomb.

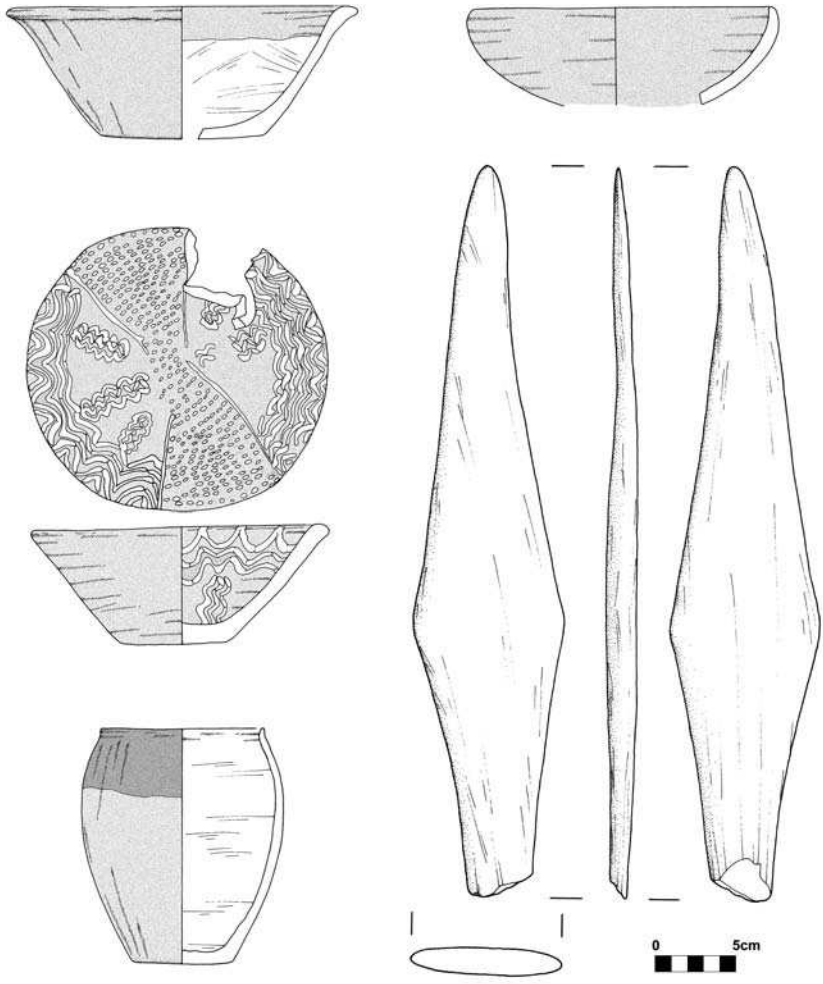

Fig. 5. Selected objects from Tomb 31 (drawings by J. Smythe).

A stone with the fossil impression of a leaf was also recovered from within the tomb, and must have been deliberately collected in antiquity, since this type of fossilised material is not naturally prevalent in the Hierakonpolis area. The floor of the tomb was lined with matting, and textile fragments were also present.

Tomb 32 shares the same enclosure. It contained at least three young individuals, all badly disturbed. Burnt bones of two further individuals

were also recovered from the fill, but their significance and association with the tomb remains to be determined (Dougherty 2010). A right foreleg of a sub-adult domestic cattle, still partly articulated, had been provided as a food offering. Large posts at the eastern end of this large rectangular tomb (2.90 × 1.55 m, 1.25 m deep) suggest a possible superstructure, but further investigation of this is required.

Scattered throughout the tomb and its fill were fragments of plaster decorated with red, black and white pigment; textile impressions appear on the back side of several. The quantity of fragments and the variety of designs on them (alternating red and black stripes on white, black lines on white, white zigzags on red, and solid red) suggest that several objects were originally present, some (if not all) of which were decorated on both sides. Although reconstruction was impossible, the decoration and the material find parallels in the model hunting gear (model shield, quiver, knife and sandals) recovered in the well-endowed Tomb S24 at Adaïma, dated to Naqada IIA (Crubézy et al. 2002: 79–82, 468–471). Similar plaster or gesso objects in Tomb 1466 at Armant (Mond & Myers 1937: 121–132, pls. 44.2–3, 47–48), dating to Naqada IIB and one of the richest in that cemetery, suggest that items of this type were restricted to the more important tombs.

Another model object retrieved from Tomb 32 is an unfired clay cone (Fig. 6) of the type discussed by U. Hartung (this volume). Although such cones are not exclusive to the wealthiest tombs and have, for example, been found in the 'working-class' burials at HK43 (Friedman 2003), they clearly held some significance for the early elite at Abydos and el-Mahâsna (see Eyckerman & Hendrickx this volume) as well as Hierakonpolis, since they also appear in Tombs 18 and 34 discussed below.

Other finds from Tomb 32 include two rock crystal blades, fragments of an ivory comb and a natural ring-shaped nodule of flint, like those found at HK25 (see Hikade this volume). While flint resources in the Hierakonpolis region are increasingly becoming known, the find spot for this type of nodule remains elusive and there can be little doubt that it was deliberately collected for inclusion in the tomb. Two small rectangular flints (Fig. 7), resembling later razors, were found in surface debris on the southern side of the tomb and are presumably associated with it.

The ceramic inventory of the tomb includes types B57a (2×), B25e and P65b, along with several P-ware bowls and at least four R83a jars of the type so prevalent in Tomb 16, two of which have pre-firing potmarks involving one or two slashes at the shoulder (cf. Hendrickx 2008: fig. 4). All are consistent with a Naqada IC–IIA date. In addition, a rim and

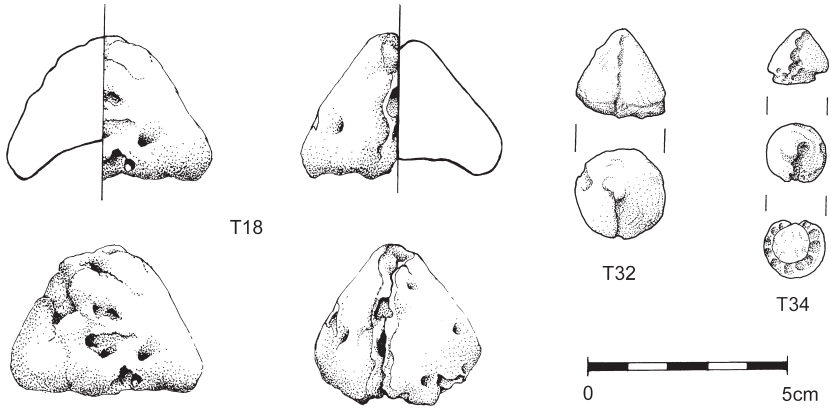

Fig. 6. Unfired clay cones from Tombs 18, 32 and 34 (drawings by L. Liekens and J. Smythe).

several body fragments of the distinctive jar type B53a and the upper body of a small Rough jar (R65b) were recovered. While these shapes have been documented for the Naqada IIA period (Hendrickx 1989), they have not previously been found in such contexts at Hierakonpolis and may be either intrusive or indicative of later or recurrent usage of the tomb.

Thus far unique to Tomb 32, subsidiary burials of animals flanked it on two sides. On the north, a shallow mat-lined pit (Feature D) contained the bodies of two adult dogs, one with a reconstructed shoulder height of 53 cm, which is on the higher side of average for the dogs in this cemetery (Van Neer et al. in press).[6]

On the southern side, a relatively deep oval grave (1.3 × 0.9 m, 0.67 m deep) held a young hippopotamus (Feature H). Although the burial was highly disturbed, most of the skeletal parts were recovered. The emergence of the milk dentition indicates that this animal was already weaned and capable of feeding independently, and a healed fracture on a fibula shows that it had been restrained in captivity for several weeks prior to its burial. This is the third young hippopotamus recovered from the HK6 cemetery.[7] No adult hippopotamus bones have so far been noted in

[6] Using the total lengths of the long bones and the indices compiled by A. von den Driesch and J. Boessneck (1974), it was possible to estimate the size of the dogs, cattle and goats buried in the Tomb 16 complex.

[7] A newborn hippopotamus was found in Tomb 12 and a 6–12 month old specimen in the vicinity of Tomb 2, see Van Neer et al. 2004: 76, 84.

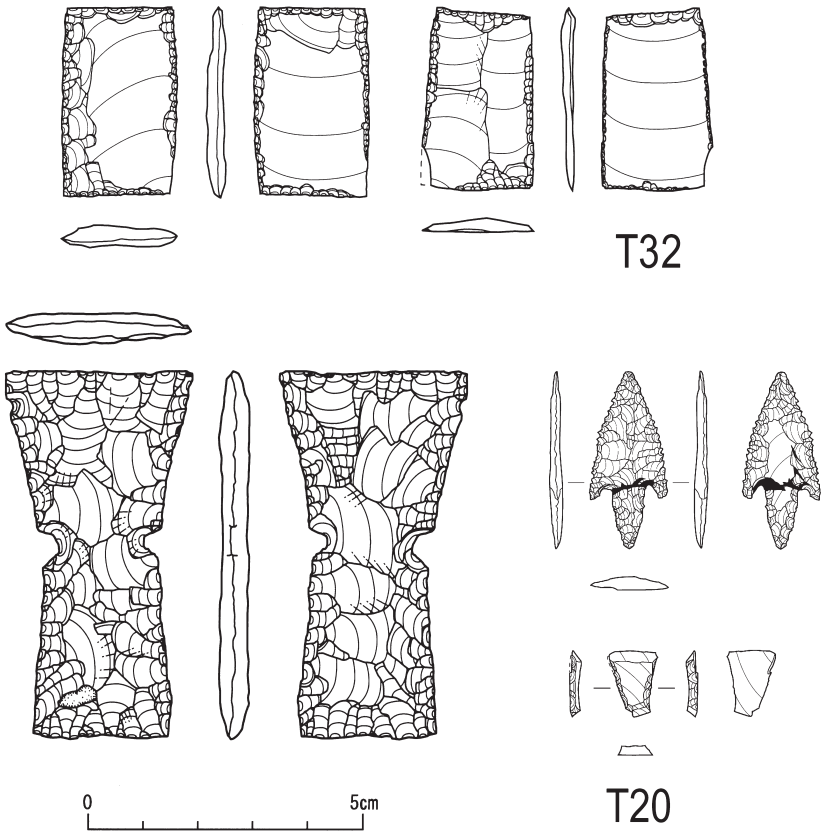

Fig. 7. Lithics from Tomb 32 and Tomb 20 (drawings by H. Endo and K. Nagaya).

this cemetery, although they are known from the ceremonial centre at HK29A and in the refuse at HK11C Operation B (Linseele et al. 2009). Their absence may be related to the difficulty of capturing a living adult or transporting the full carcass of a dead one. While it is likely, but ultimately unknown, whether the animals selected for burial in this cemetery were still alive when brought to the burial site, the wholeness of the body appears to have been of importance. Apart from those clearly intended as food offerings, only complete, unbutchered animals were interred (Van Neer et al. 2004).

The subsidiary animal burials, the grave goods and the position of Tomb 32 within its spacious enclosure suggest that it belonged to people of high status. The combination of dogs, a hippopotamus and possibly

model hunting gear may reflect the tomb owners' prowess in hunting, an activity considered the purview of the elite and a marker of status (see Graff et al. this volume). The iconographic record shows that the hippopotamus hunt in particular had great symbolic meaning in this period and later (Müller 2008), but whether the selection of a juvenile hippopotamus has further significance (e.g., apotropaic or invoking the protective qualities of its mother) remains unknown.

Tomb 20

Contiguous to the west is another wood-post enclosure, its northern wall sharing the fence along the southern side of Tomb 16. This enclosure contained a single round tomb called Tomb 20 (2.6 m in diameter, c. 1 m deep). The area above and around Tomb 20 was previously excavated by Adams (2004: 42, fig. 3), but was erroneously believed to contain two interconnecting tombs (Tombs 20–21). Earlier exploration of the area also uncovered a quantity of fine, mostly intact pottery (Fig 8; B22c (4×), B26d, B24c, B55b, F15 straw tempered) and flint-work, including one transverse arrowhead and three tanged arrowheads (Adams 2004: 42, fig. 7). These can most probably be attributed to this tomb. During recent work in the immediate vicinity, a bifacial flint with a central notch was also recovered (Figs. 7–8) and from the general vicinity came the flint shaped as a 'giraffe head' (Fig. 8; Adams 2004: fig. 7f), although based on proximity this could equally have originated from Tomb 31.

Excavation to the mat-lined floor of the tomb in 2010 revealed the disturbed remains of three individuals: two female and one male, all between the ages of 12 and 19 years (see Table 1).[8] The only object found in situ was a very fine tanged arrowhead wrapped in animal hide (Fig. 7) along the side of the tomb; four further transverse arrowheads (Fig. 7) were found in the fill, again suggesting a connection with hunting.

Notable in the tomb were the thick wads of textile up to 2.5 cm thick, which appear to be resin-coated and stained by decomposition fluids. The impressions of bones could be detected on one side with up to four layers of matting adhering to the other. These textiles are identical to those found in the HK43 cemetery associated with the wrapped burials (Jones 2007) and have also been recovered from HK6 Tomb 25 (Friedman 2008: 1165).

[8] Analysis of the human remains from this tomb was undertaken by D. Antoine, British Museum.

Fig. 8. Objects attributed to Tomb 20.

Tombs 38–40

Adjoining to the west, another fenced enclosure surrounded three smaller round-to-oval tombs. Tomb 38 (diameter 1.70 m) and Tomb 40 (1.42 × 0.98 m) were badly plundered, and only the shattered human bones of several individuals were found within these mat-lined graves (see Table 1). However, Tomb 39 (diameter 1.68 m) still held the partly articulated remains of four individuals and two pottery vessels in situ beneath the mat covering. On the north-eastern side, the torso and legs of a female were in situ with several layers of matting above and below the body and quantities of textiles at mid-torso. A small B-ware jar (Fig. 9) was found by her arm, but the vessel may be associated with the adjacent occupant whose smashed pelvis and femora were found on a different mat immediately to the south. This interment may be a later addition (by minutes or years), but because of the disturbance this could not be determined with certainty. On the western side of the tomb were the articulate feet of two more individuals and an intact P-ware bowl (Fig. 9), all covered by the same upper matting as the first female. A small leather sack containing chunks of malachite and three drop pendants made of clay still on their string was recovered from the lower

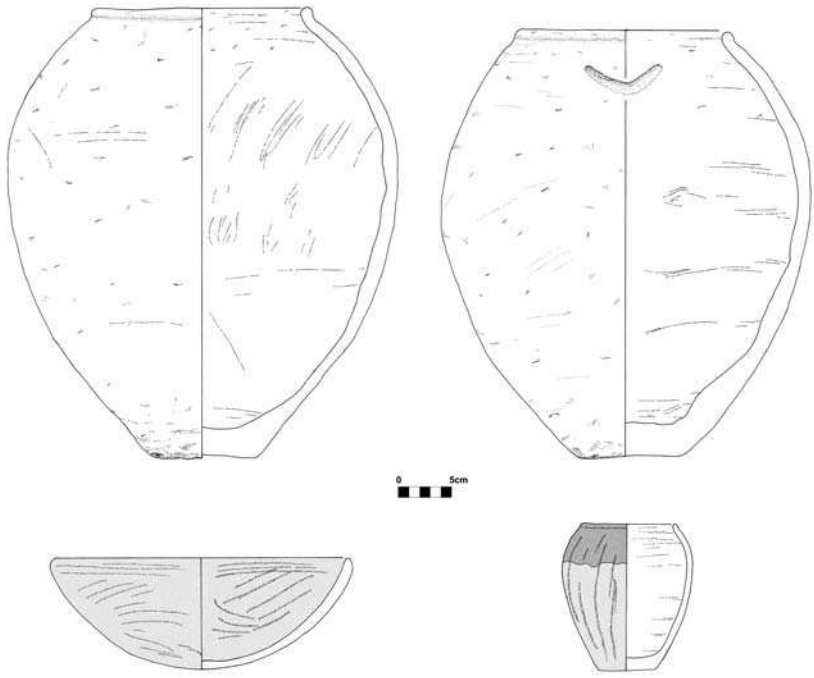

Fig. 9. Pottery from Tomb 39
(drawings by J. Smythe, inked by H. Jaeschke).

fill along with mending fragments of two R83 jars, one of which has a pre-firing potmark (Fig. 9).

Throughout the western part of the enclosure, large amounts of ostrich eggshell were recovered during the initial exploration by Adams[9] and during the recent re-investigation. Together they reflect the original presence of a minimum number of six whole eggs (see Muir & Friedman this volume). Notably, very little eggshell was found within the fill of the tombs and thus the eggs may be related to above-ground offerings or rituals, as suggested by the finds in the adjacent enclosure of Tomb 18.

[9] The surface levels in this area were previously cleared by Adams (2002: fig 3) without fully determining the underlying features. Thus, Tomb 39 is equivalent to Adams' Pit 235/6, in which were found pieces of an ivory comb, a reconstructed R83a jar and fragments of a carinated bowl (P7E), all of which may perhaps originate from this tomb. Adams' context 22 is equivalent to Tomb 38, while re-excavation of Adams' Tomb 15 showed this to be a looters' pit, and the human bone found in it was re-assigned to Tomb 40.

Tomb 18

Abutting the western side of the enclosure around Tomb 16, another large fenced enclosure surrounds Tomb 18 and the tomb apparently annexed to it. When excavated in 1999 (Adams 2002: 19, 2004: 40–41; fig. 41), Tomb 18 (3.45 × 2.44 m, 1.15 m deep) was found to contain the partly articulated remains of five individuals, most of whom appear to be female (Table 1). The best preserved had been placed on her left side, facing up the wadi, on the southern side of the grave, together with four P-ware bowls (one carinated and three hemispherical; Fig. 10b). In association with another partly in situ body on the north-eastern side were two large chunks of resin, malachite and three mud cones, two of large size (Fig. 6). Other material found in the fill include numerous beads and one drop pendant of carnelian and four further P-ware bowls (P22a, P25, P11b, P23). One had a post-firing pot mark on its base (Fig. 10a), which, in contrast to the pre-firing marks, is a rare occurrence in this cemetery (cf. Hendrickx 2005; Adams 2000: cat. nos. 66, 72, 233). In addition, seven reconstructible R83a jars and rim sherds of six others with pre-firing potmarks were recovered from the fill (see Hendrickx 2008: table 4, find number 117), but whether they originally derive from this tomb remains unclear. In light of the regular presence of this jar type bearing pre-firing potmarks in many of the surrounding tombs (cf. Tomb 32, 39 and 34), the large number of marked pots found within Tomb 18 may be of significance. Also attributed to this tomb are ceramic appliqués, presumably applied to jars, one in the shape of a cow's head (Adams 2002: fig. 5, 2004: fig. 5) and the other apparently in the shape of a human female breast; however, no further joins to these items were found during renewed exploration.

In 2009, excavations to the north of Tomb 18 revealed what appears to be an annex or extension of the tomb. A low narrow lip separates the two tombs, but both were originally dug to the same depth, and it seems unlikely that one could have been created without the knowledge of the other. The remains of four individuals (two adult, two juvenile) were recovered from this annex, but only the matting for the interment of one juvenile was preserved because the rest of the tomb had been dug to a deeper level by looters. From this grave came three small, but extremely fine Black-topped jars (Fig.10c–e), two further R83a vessels, a P1t2, an elliptical bowl of straw tempered clay (F15), and an ivory cup with a pedestal base and traces of red pigment on the exterior (Fig. 10f). The top of an undecorated ivory comb (Fig. 10g) and several beads of carnelian and one possibly of garnet were also recovered.

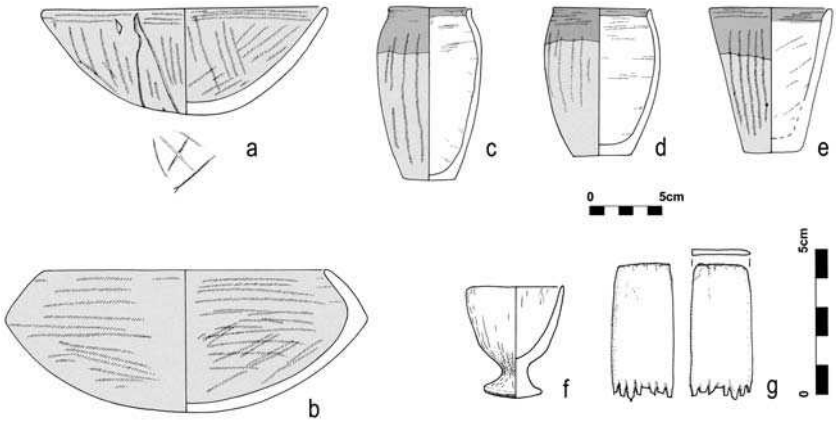

Fig. 10. Selected pottery and objects from Tomb 18 and Tomb 18 extention (drawings by J. Smythe, inked by H. Jaeschke).

The high quality of the objects found in these tombs suggests their occupants were high-status women and children. If this is the case, then their obvious connection with the concept of fertility and regeneration may explain the deposit of three ostrich eggs that was discovered in the southwestern corner of the tomb enclosure. A ring of mud plaster, with eggshells still present in the centre, suggests that the eggs had originally been set up for above-ground display (see Muir & Friedman this volume). Again, it should be noted that the amount of eggshell found within the tombs themselves was extremely limited. From fragments recovered from the northern side of the enclosure, more than two-thirds of another egg could also be reconstructed, which is rather remarkable considering the extensive disturbance and dispersal of the tomb contents themselves.

Other human burials

The excavations to date indicate only human interments were placed immediately adjacent to the Tomb 16 enclosure, and further human burials are expected along the northern side of the complex during future excavations. In contrast, human burials were relatively limited in the outer rung of tombs. Tombs 34 and 41 are the only ones thus far discovered that contain human bones only. Neither of these burials appears to have been surrounded by a fence.

Tomb 34 was a small rectangular tomb (1.38 × 0.96 m) dug to a shallow depth (0.72 m). Although badly disturbed in recent times, it once contained a mat lining and the body of an adult male with large amounts of textiles (some sewn and some with fringe) and leather. Associated pottery includes four fully reconstructed R83a jars, three with a pre-firing potmarks. A small mud cone (Fig. 6) was also recovered along with chunks of resin, a combination also noted in Tomb 18. The tomb also contained numerous stones of the fruits of the jujube (*Zizyphus spina-christi*) and desert date (*Balanites aegyptiaca*), a food offering that is extremely infrequent at HK6 (Fahmy et al. 2008: 175), although well-known within the HK43 cemetery (Fahmy 2003). In addition, a large number of acacia (?) wood branches, averaging about 1 cm in diameter, were found in the disturbed fill, and perhaps derive from arrow shafts (numerous transverse arrowheads were found in the general vicinity during the surface clearance of Adams[10]) or a roofing material. None were found on the floor of the tomb to indicate their use in a bier or box. Similar twigs were found in Tomb 20, but always in the fill.

Tomb 41 contained the remains of an adult male, who must have been tightly contracted to fit into his very small and shallow grave (1.20 × 0.75 m). Matting was provided both above and below the body along with copious amounts of textiles. No other objects of material culture could be associated with this tomb. Although only limited remains of the owner's skeleton were retrieved, he was one of the few to present pathologies. The neural spine of the fifth (?) cervical vertebra was bent from left to right, most probably due to a healed fracture.[11]

Human burials in conjunction with animals occur in two further tombs. Tomb 14 contained six dogs (see below) and the scattered remains of a juvenile human. As the human remains were found deep within the tomb, this suggests (but does not prove beyond doubt) that they are original to it. Tomb 17 also contained two juveniles along with one young baboon, and was probably surrounded by a fenced enclosure, which made use of the fences of Tombs 18, 19 and 33 flanking it on three sides.

Although the sample is still limited, the demographic of the 36 individuals found within the 13 tombs containing human remains is far from normal. No one is younger than eight years of age and no one can be

[10] In addition, the limestone discoid mace-head and obsidian blades (Friedman 2004: fig. 13) previously attributed to Tomb 14 may potentially originate from Tomb 34.

[11] Analysis by D. Antoine. Evidence of healed fractures on the right ilium and right rib of a female from Tomb 40 (combined with Tomb 15) were observed by S. Dougherty.

Tomb	Male	Female	Unknown	Juvenile
14				10–15 yrs
16		21–25 yrs	adult	(frags)
17				10–15 yrs 10–15 yrs
18		18–24 yrs 20–35 yrs ? adult ? adult		14–15 yrs
18 ext	? adult ? adult	? ?		13–15 yrs
20	15–20 yrs	15–20 yrs	15–20 yrs	
31	? 20–35 yrs	20–25 yrs		
32	? burnt	? burnt	20–25 yrs	8–10 yrs 15–17 yrs
34	29–33 yrs			
38				12–15 yrs 12–15 yrs
39	? 20–35 yrs	20–25 yrs young adult	feet	very partial
40		? 21+yrs		8–10 yrs
41	25–35 yrs			
Total	**8 male**	**13 female**	**4 unknown**	**11 juvenile**

Table 1. Age and sexes of the human occupants of tombs in the Tomb 16 complex (this supersedes previous discussions in Adams 2002, 2004 and Van Neer et al. 2004.

aged over 35 years (Table 1). Multiple interments within the same tomb are a feature of elite burials at several sites (see Midant-Reynes 2003 for overview); however, in the Tomb 16 complex, the high number of juveniles and women, especially in the inner rung, suggests special selection. There is nothing to prove that all of the graves were created at the same time, or that all of the bodies in them were interred concurrently. Nevertheless, where the tomb edges have been sufficiently preserved (i.e., Tomb 31, northern sides of Tombs 20, 38, 39), it is clear that the fences could only have been erected after these graves were dug. Furthermore, the fence with its continuous foundation trench extending along the southern side of Tomb 16, which served as the northern walls for the enclosures around Tombs 31–32, 20 and 38–40, indicates a single building phase.

Animal burials

The second rung of tombs around the complex is almost entirely inhabited by animals. To date, the remains of 28 animals in ten graves or grave features have been excavated, although the exact grave for five of the animals has not yet been determined. This total does not include the remains of sheep/goats, many of young or neonate age, found in several of the tombs throughout the complex, as their depositional circumstances and purpose (food offerings?) remains unclear. It is also likely that the pit features (B, C, E) at the eastern edge of the wadi terrace containing 17 further animals should also be included as part of this complex, although excavations have not yet linked them.

Amongst the animals, all of which were clearly buried whole, different levels of care and perceived value can be observed in their treatment in death. The greatest effort was expended, perhaps not surprisingly, on the two largest and most exotic of the animals buried in the complex: the African elephant (*Loxodonta africana*) in Tomb 33 and the aurochs (*Bos primigenius*) in Tomb 19.

Tomb 33

Initially attributed to Tomb 14 by Adams (1999), it had long been suspected that the elephant was actually buried elsewhere (Friedman 2004). Excavations in 2009 of the area previously known as Pit 240 finally resolved the issue when the articulated lower half of this ten-year-old male elephant was found on the floor of Tomb 33 (Fig. 11).[12] This large oval tomb (3 × 1.65 m) was nearly 2 m deep and surrounded by a wood-post fence on all four sides, its eastern fence being contiguous with that of the Tomb 18 enclosure. At the bottom of the tomb, the elephant had been placed on a layer of matting on its left side, head to the east, facing south-west, and was then covered with textile and matting. Evidence of the food it had eaten was found within its intact ribcage and abdomen. This consisted mainly of botanical matter, but two catfish bones (a *Clarias* and a *Synodontis*), various partially digested sherds, flint debris and stones were also recovered, indicating that the animal had been feeding in proximity to settlement debris. Detailed analysis of the botanical content revealed a diet composed of acacia twigs and the stems and flowers of the river-side plant C*eruana pratensis*, but for the most part it was

[12] Another elephant of similar age was found buried in Tomb 24 (Friedman 2004).

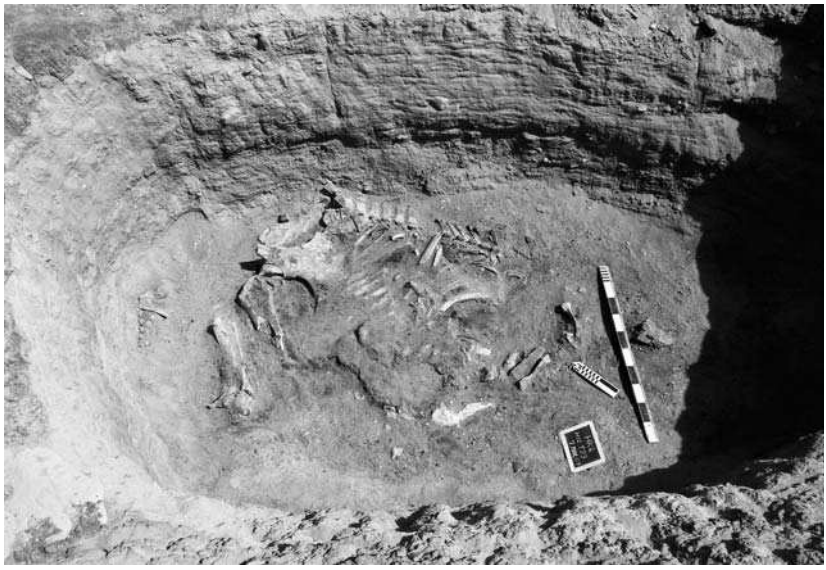

Fig. 11. The remains of the elephant in situ in Tomb 33.

made up of the chaff of emmer wheat, a common livestock fodder, suggesting that he was being maintained in captivity, although the duration of his stay cannot be assessed (Marinova & Van Neer 2009).

Due to extensive disturbance in the area of the head, where offerings might be expected, it is unclear whether the elephant was endowed with any grave goods. Fragments of various pottery vessels were found in the fill, but none at depth. Nevertheless, a radiocarbon date on a well-preserved skeletal element provided an AMS date of 4850+/–40 BP, or Cal BC 3660–3640 (1 sigma),[13] which is more or less in accordance with the dating derived from the ceramics in the overall complex.[14]

Tomb 19

Radiocarbon dating of the preserved gut contents of the aurochs in Tomb 19 yielded a remarkably similar result of 4850+/–60 BP (Cal BC 3670–3635,

[13] Sample Beta 252910; 2 sigma calibration: Cal BC 3700–3630 (Cal BP 5650–5580) and Cal BC 3570–3530 (Cal BP 5520–5480).

[14] The radiocarbon date is actually somewhat later than expected from the ceramics, but this problem is not limited to Hierakonpolis; see Buchez this volume [Adaima]: note 3. See also Hendrickx 2006: 90–92 for problems with the radiocarbon chronology of this period.

1 sigma),[15] suggesting these two animals may have met their ends at the same time. Like the elephant, the three-year-old male aurochs (Van Neer et al. 2004: 99) was buried with linen and matting in a deep oval tomb (2.96 × 1.97 m, 1.4 m deep). Reports of resin and body packing as artificial measures to ensure its preservation (Adams 2004: 42; Warman 2003) should now be understood as gut contents and decomposed muscle. The tomb, discovered by Adams in 1999 and subsequently back-filled, was not re-investigated in 2009. However, re-exploration of the area immediately around it revealed the well-preserved remains of a post fence on all four sides. The posts had been set into a wall trench that had been packed with white ashy material, which presumably acted as an insecticide (cf. Friedman et al. 2009: 192).

Just beyond the wall on the northern side, a large rhomboid palette was retrieved, but it is unclear whether this should be attributed to Tomb 19. This is also an issue for a number of fine objects found by Adams, including the upper portion of a human figurine of red painted clay (Fig. 12) and a linen mat containing traces of malachite (Jones 2002: 13). It is possible that all of these objects may originate from another (probably human) tomb in the immediate vicinity, but only future excavations can confirm this.

The surface area above and around the tomb also produced a notable concentration of black polished egg-shaped jars of type F91d/B44s (MNI: 7 vessels), a shape rare in the Tomb 16 complex,[16] but found with frequency in ritual settings at HK29A (Friedman 2009: 85–86) and in the pillared hall complex to the south (see Muir & Friedman this volume; Friedman 2008: fig. 6c). A quantity of neonate or very young sheep/goat remains were also recovered from the tomb fill; however, as the offering of the lower limbs of these young caprids is another feature better known from the pillared halls, it is possible that a locus of ritual activity is present in the vicinity, perhaps paralleling the ostrich egg deposits on the southern side of the Tomb 16 complex. Thus, at this point, it is unclear whether all or any of the objects found in and around Tomb 19 can be considered as grave gifts offered specifically to the aurochs.

Analysis of the gut contents from the aurochs revealed relatively low quantities of emmer chaff with a greater contribution from other grasses of the sedge family. It is in some respects comparable to the preserved gut

[15] Sample Beta 142094; 2 sigma calibration: Cal BC 3720–3520 (Cal BP 5670–5470).

[16] It is probable that Tombs 16 and 18 each contained one egg-shaped vessel.

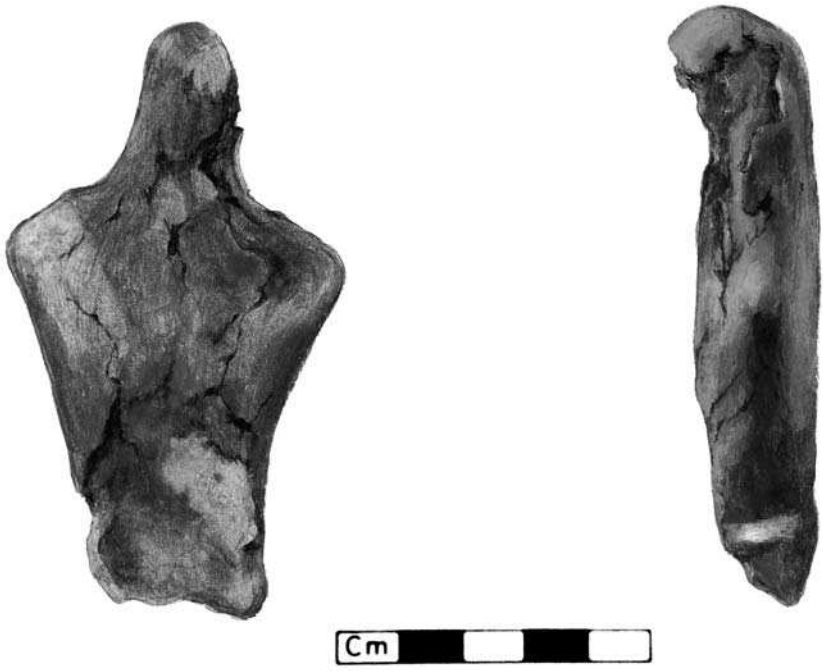

Fig. 12. Figurine from Tomb 19 (painting by L. Liekens).

content of the domestic cow found in Tomb 36 (Ryan 2010) and suggests that the aurochs may have been pastured with the domestic cattle.

The hartebeest

Although neither the elephant nor the aurochs show explicit signs of long-term captivity, that animals were sustained in confinement for some time is indicated by the hartebeest, the bones of which were found on the surface and in the upper fill of Tomb 33 (cf. Van Neer et al. 2004: 93–94). Its actual tomb is probably located immediately to the west, where a cutting has been detected, but not yet investigated. Examination of its scattered remains has revealed a healed fracture on one rib and, although such pathologies also occur in the wild, it is likely that the injury was a result of manipulation by humans either during capture or afterwards. The healing of a long bone fracture takes 4–6 weeks, which is hence the minimal duration that this animal was in captivity. This same

individual also shows two additional pathologies that may be related to a prolonged stay in captivity and, possibly, inappropriate food. On one of the coronoid processes of the mandible, there is an abnormal bony extension and an upper premolar, found separately, shows abnormal wear. Together, these indicate that the animal had a problem with mastication and similar deformations of the dentition occur very frequently in wild animals that are kept in zoos today.

Domestic livestock

Special care was also given to at least one specimen of domestic cattle, the adult domestic bull found in Tomb 43 on the southern side of the complex. On the mat lined floor of this large rectangular tomb (3.1 × 2.2 m, 1.2 m deep), the hind part of the body was still in situ covered with matting and textiles. The animal had been placed on its left side, its head to the east. The shoulder height of this bull, calculated on the basis of its metatarsal, was 141 cm. In the fill, a substantial part of a White cross-lined bowl with geometric designs (cf. C9H) was recovered, but its association with the tomb is not certain.

Although no fence was detected surrounding Tomb 43, its size and depth indicate special effort. This stands in contrast to the nearby Tomb 36, the grave of a domestic cow with her calf, which were packed into a small and relatively shallow tomb (1.38 × 0.96 m, 0.72 m deep) without matting or other evidence of additional care.[17] The nearly intact skeleton of the cow was positioned on its left side with the head towards the east, the body of the calf placed between her legs (Fig. 13). This is the oldest and most complete skeleton to date that can be identified as Egyptian longhorn cattle. The shoulder height of this cow, estimated on the basis of the same skeletal element as in the bull, is 128 cm. Copious amounts of gut content were preserved and show that the cow foraged on various grasses with emmer chaff as its main fodder (Ryan 2010).

Owing to extensive disturbance and previous excavations, the burial circumstances of the two very large male goats attributed to Tomb 35 are unclear. One of the goats was originally assigned to Adams' Tomb 13, but reinvestigation of this tomb shows it is only a looters' pit. The actual grave (Tomb 35) was located further to the south. It is oval in shape

[17] All of the graves in the south-west sector (except Tomb 14) were dug to approximately the same shallow level, suggesting that the surface topography in the past was somewhat different than it appears today.

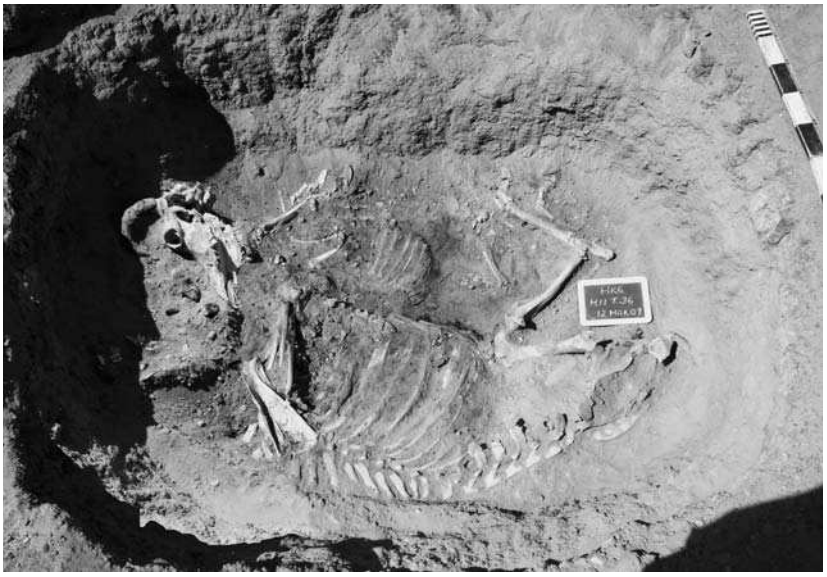

Fig. 13. The cow and calf in Tomb 36.

(1.6 × 0.95 m), but has been heavily disturbed. Its floor was dug into by looters and thus its original depth cannot be determined. Renewed exploration now indicates that two large males were present, and the augmented skeletal inventory confirms the previous identification as goat (as opposed to ibex or Barbary sheep; Van Neer et al. 2004: 86–88). The shoulder heights, based on the metatarsals, are estimated at 76 cm and 84 cm respectively. This is extremely large for goats and illustrates that HK6 was special not only for its wild species, but also for the quality of the domestic animals that were selected for burial.

Dogs

Four graves (not including feature D) contained the remains of several dogs each, some of which appear to have been accorded better treatment in death than others, perhaps reflecting their perceived quality or value. Most were buried in relatively shallow mat-lined pits only large enough to hold them.

Tomb 42 (1.2 × 0.8 m) held the disturbed remains of three dogs (two adult and one juvenile) along with indications of a young baboon.

The shoulder height of one of the dogs was 51 cm. The tomb also contained two Black-topped beakers (B21c), found intact and upright along the southern side of the grave in its upper levels. This is the first unambiguous evidence of grave gifts for the animals in this cemetery.

Exceptional for its depth is Tomb 14. The upper levels of this grave and its surroundings were initially investigated by Adams (2002: 21–22, fig. 3), who believed it to be the tomb of the elephant now known to be interred in Tomb 33. During reinvestigation, the true location of this round (c. 1 m diameter, 1.15 m deep) tomb was discovered slightly to the north of its placement on Adams' map. The disturbed but relatively well-preserved remains of six dogs and one human (mentioned above) were found in the lower levels of the tomb. At least two of the dogs were males, as shown by the preserved bacula. The four mandibles that allowed ageing indicate the presence of one senile animal, two old individuals and one young adult. Their shoulder heights, calculated on the basis of three complete right humeri, were 51, 54 and 56 cm.

Previous excavations yielded numerous remains of dogs in the upper fill of Tomb 14 and its surrounding back dirt, but these cannot necessarily be equated with those found during the recent work. It appears that three or four more dogs are present in the older material, but these may have originated from a shallow grave that was destroyed during plundering or whose location and significance went undetected during the original excavations.

Tomb 44 is a good example of how easily these disturbed tombs can evade detection. This small round grave, 1 m in diameter, originally contained four dogs, but only the hind part of one dog was still in situ at the base of the grave. The remains of the others had been dumped in the adjacent Tomb 43 during plundering and as a result were relatively well-preserved. One of the dogs was a juvenile, the three others adults, and at least one was male. One of the adult dogs had its second and third cervical vertebrae fused, possibly as a result of an accident or injury. The dog still in situ in Tomb 44 had a shoulder height of 53 cm and the remains found in Tomb 43 showed the presence of at least one individual of 52 cm at the shoulder.

The exact location of Feature F on the northern side of the complex was similarly difficult to detect due to disturbance. The cluster of dog bones belonging to two adult animals observed on the surface proved to originate from a shallow grave with traces of mat lining found indirectly below. The humerus of one specimen indicates a shoulder height of 53 cm.

Features B, C and E

Probably also part of the complex are the animals discovered in Features B, C and E at the eastern edge of the cemetery in 2008. These animals were found during investigation of Wall B7, which runs along the edge of the wadi terrace and may have encircled the entire cemetery (Friedman 2008: 1185–1188, fig. 4). Along the western side of this wall, in a rocky area otherwise devoid of finds, excavations revealed the shallow grave of a juvenile baboon (Feature B), an oval pit containing the articulated skeletons of nine dogs (C) and immediately adjacent to it, a small circular pit with the remains of six cats (E) (Van Neer et al. in press). All of the

Fig. 14. The intact baboon in Feature B.

burials were intact and are so far the only completely undisturbed animal burials in the cemetery.

The four to five-year-old baboon in Feature B was found in a foetal position, lying on its right side, facing north (Fig. 14). The skull was chalky and fragile and, as a result, exact species identification could not be achieved. However, as all other identified baboons from HK6 have thus far been anubis baboons (Van Neer et al. 2004), it seems likely that this one also belongs to this exotic species and must have been brought to the site from a more southerly part of the Nile Valley. Like most of the other baboons in this cemetery, this one also presents with pathologies: on the lower left arm, there is a transverse fracture of the ulna. This injury is similar to one observed on one of the seven anubis baboons from Tomb 12, many of which exhibit numerous pathologies related to traumas (Van Neer & Linseele 2002; Van Neer et al. 2004). Similarly, the young, female baboon of about four years of age found in Tomb 17 also had a pathological forearm, with a healing fracture of the left radius and ulna. Dynastic depictions of constrained baboons or other cercopithecids show a rope tied either around their waists or necks (Osborn & Osbornová 1998), making it unlikely that the observed fractures of the forearms are related to the tethering of the animals. While a number of other injuries detected on the baboons suggests they were sustained as a result of their captivity, the forearm fractures indicate they were subjected to violence, perhaps as disciplinary measures (Van Neer et al. in press).

Less than half a metre from the baboon, Feature C was encountered beneath a loose pile of sandstone slabs. The oval pit, measuring roughly 1.4 × 1 m and approximately 46 cm deep, contained nine articulated dogs (Fig. 15). All of the dogs lay on their left sides with heads oriented towards the east; no matting was detected. Of the nine individuals, at least two were males and all, with the exception of one old dog, were healthy young adults. The dogs all appear to be 'medium-sized', i.e., with heights at the shoulder of around 45 cm or a little taller. This would correspond to the size of the average stray dog seen today in and around Egyptian villages and stands in contrast to the height estimates for the dogs discussed above, which had shoulder heights of 46, 51, 52, 53, 54 and 56 cm.

Additional osteometric work is needed to further substantiate whether the somewhat smaller size of the dogs in Feature C, combined with the fact that they were buried with less care, might be an indication that they were so-called 'pariah dogs' or mongrels as opposed to the larger sight hounds. It has been suggested on the basis of pictorial and skeletal

Fig. 15. The lower level of dogs in Feature C.

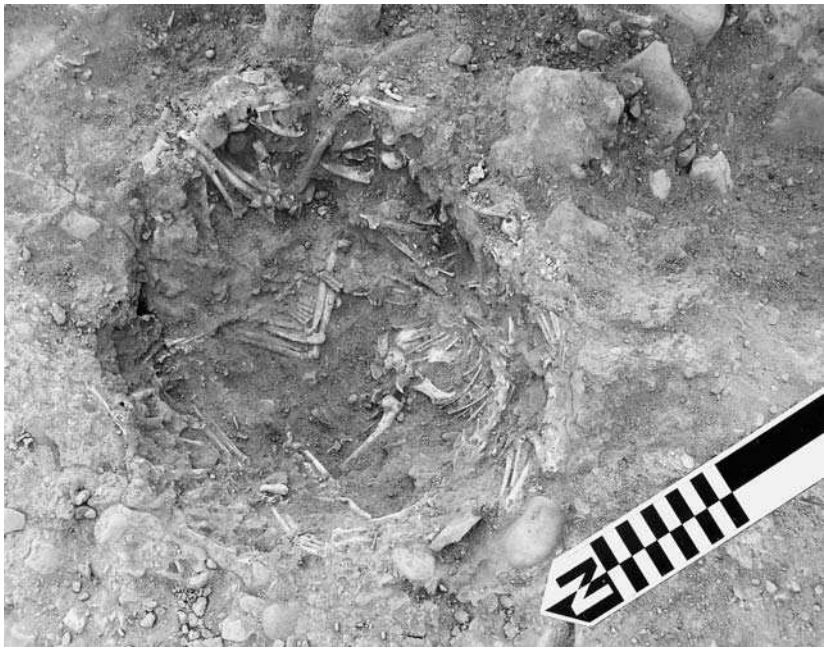

Fig 16. The cats in Feature E.

evidence of Dynastic times that it may be possible to distinguish between pariah dogs, with shoulder heights of less than 50 cm, and the larger hunting dogs (Brewer 2001).

Directly adjacent to the dog pit, Feature E was a circular pit of about 50 cm in diameter and 25 cm deep, which held the fully articulated bodies of six cats (*Felis silvestris*) draped along the bottom and around the sides (Fig. 16). The cats include two adult individuals (male and female) and four kittens of two different age classes. Although cat bones occur in Predynastic settlement deposits at several sites including Hierakonpolis, they attest only to the presence of the species in the vicinity of human habitation (Linseele et al. 2007, 2008). On the other hand, these cat burials are the first confirmation of human interest in their presence. Furthermore, the ages of the animals make it clear that this is not a single family. The female, at less than a year, and the two pairs of kittens, aged four and five months respectively, suggest that if the cats were not already domesticated, intensive contact with humans had altered the natural breeding cycle. Cats in the wild have only a single litter per year and, in this case, the adult female should have been a year older than the kittens (Van Neer et al. in press). Thus, the generally reported Middle Kingdom date for the domestication of cats (Malek 1993; Osborn & Osbornová 1998: 106–110) needs to be revisited.[18]

Significance of the animal burials

The HK6 cemetery has long been recognised as unique for the number of animal burials it contains (Flores 2003), but the recent wide-area clearance has now allowed some of them to be placed in context in relation to the elaborate burial complex around Tomb 16. The distribution of other animal burials across the cemetery (Tombs 3, 5, 7, 12 and scattered remains around Tomb 11; see Van Neer et al. 2004) suggests that similar compounds may be present.

[18] In light of this discovery, the discussion of the Early Dynastic goddess Mafdet may also need reassessment. Considered a protective power over the royal court, she was called 'the mistress of the mansion of life', a part of the palace that has been identified as the royal eating and food storage areas (Gardiner 1938). Although what specific feline represented her is still unclear (Osborn & Osbornová 1998: 117), it has been suggested that she was embodied in the cats that protected these areas from vermin and snakes (Wilkinson 1999: 290), and there can be little doubt that the value of cats in this capacity was recognised at an early date.

The variety of taxa involved and the differential effort expended in their interment indicate that the meaning and significance of these animal burials need not be the same. Nevertheless, in general, the wide range of animals may have symbolically provided protection against the natural chaos they represented, the captivity and eventual slaughter of these animals a way in which chaos was brought under control. Additionally, the burial of domestic animals may have ensured an eternal food supply and companionship along with forming part of an ostentatious sacrifice of valuable assets. However, the burial of the large wild animals was probably more than anything else a display of power. The ownership of these exotic animals would have been a strong visual statement to this effect. The healed injuries observed on some of these animals indicate that they were held in captivity for a minimum of four to six weeks. The creation and maintenance of royal menageries is known to have been a means of legitimising the rule of New Kingdom pharaohs (Müller-Wollermann 2003), and it may have served this purpose already at this early time. Yet the power exhibited here was not simply the power to control or kill these creatures, but also to become them, taking their powerful natural attributes for one's own. In this way, these burials reflect the physical reality behind the animal-based royal iconography of the Early Dynastic period (cf. Hendrickx 2002). Furthermore, these burials also suggest that the orderly rows of animals carved onto the ivory knife handles of the later Naqada IID–Naqada III period (Ciałowicz 1992) were not simply aspirational symbols of control, but harkened back to actual practices.

Mortuary Landscape at HK6

The full extent of the Tomb 16 complex is unknown, but it may be at least 60 m long (E–W) and 40 m wide, if laid out symmetrically. Likewise, its likely appearance is still vague, but the range of fences may have been modelled on the elite residence (or royal palace) in an arrangement perhaps similar to that proposed on the basis of Tomb U-j at Abydos (Dreyer 1998: 6–9). Support for this prototype is admittedly still limited, but the evidence to date suggests that placement in life is reflected in location in death, e.g., guard dogs at the front, women and children at the back and so forth. Obviously, further exploration is required to clarify the issue.

The situation around Tomb 16 itself is still uncertain. It may have been marked in a special way with a superstructure that allowed it to stand out at the heart of the complex. The span across the tomb cavity between the

preserved post emplacements does not preclude roofing. However, elsewhere there is no indication that the enclosures were roofed and as G.A. Reisner (1936: 1–5, fig. 10) suggested, the fences may have served (at least in part) as revetments for mounds of earth placed over the graves. The notable overburden in some areas (in contrast to the pillared hall precinct) may support this view. A scenario in which the funeral rites took place prior to the creation of the mound and the building of the fence around it could also explain the discrete clusters of ostrich eggshells still preserved at surface level.

Notably lacking in the Tomb 16 complex is any clear indication of pillared architecture. This is restricted to the adjacent pillared hall or funerary temple precinct, where at least three phases of construction and demolition of these wooden structures have been detected. Eight different structures can be distinguished, those unshaded on Figure 1 belong to the earlier phase, amongst which are traces of other structures whose full configuration cannot be ascertained and may be even earlier. In the later construction phase, these earlier buildings were removed to make way for structures much more substantially built (shaded in Fig. 1). Whether the structures of this phase were built simultaneously or sequentially cannot yet be determined, but a radiocarbon date of 4930+/–50 BP, Cal BC 3790–3640 (2 sigma)[19] from the preserved bark on a pillar in one of the largest and longest lasting of the halls,[20] Structure E8, demonstrates that both the fenced compound of the Tomb 16 complex and at least one of these multi-columned buildings were extant at the same time. That the pillared halls functioned as funerary temples for the continued cult of these elite burials cannot be doubted and is demonstrated by similarities amongst the fine objects found in both the temples and tombs (cf. Friedman 2008). Together, these complexes provide a view of an elaborate mortuary landscape on a scale hitherto unexpected for this period.

The clear distinction between the pillared architecture of the temple structures and the fenced constructions of the Tomb 16 complex does, however, call into question the elaborate superstructure of Tomb 23. Although there is no clear indication of reuse, Tomb 23 could be a later addition into a pre-existing columned structure; yet, the superstructure of

[19] Sample Beta 216824; 2 sigma calibration Cal BC 3760–3660 (Cal BP 5710–5600).

[20] Masses of beer jars and bread pots datable to early Dynasty 3, with a distribution that respected the walls of both Structure E8 and Structure 07, indicate that almost 1000 years after they were built, these buildings were still extant in some form and still the location of rituals, see Friedman 2010.

the adjacent and seemingly contemporary Tomb 26 was clearly custom-made for it, showing that superstructures of the type that would continue to be used in this cemetery in the Naqada III period were already known. Based on ceramic evidence, Tombs 23 and 26 can be dated to Naqada IIB (Friedman 2008) and thus postdate the Tomb 16 complex. They may therefore represent a development in funerary architecture, which combined the elements of the temple and the tomb. This combination may not have been simply a matter of expediency, but may also have been a means for the elite to again enhance their status and express a new conception of rule that combined the ruler with the divine.

Further research is still required; nevertheless, the discoveries in the HK6 cemetery show that complex social and religious arrangements were already in place in the Naqada IC–IIA period, with strong leaders able to marshal labour and exotic resources and express their authority in a variety of ways, setting the stage and providing the prototypes for developments leading into the Dynastic Age.

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