

Discovery of a predynastic elephant burial at Hierakonpolis, Egypt

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It has long been known that the ancient Egyptians buried such animals as dogs, baboons and cattle, sometimes in human tombs and sometimes in separate graves of their own. Now excavation in a cemetery associated with the large settlement of Hierakonpolis has led to the unexpected discovery of a 5700-year-old elephant burial. Here the Research Curator of the Petrie Museum of Egyptian Archaeology at UCL describes the discovery and discusses its significance.

The hoary antiquity of Hierakonpolis and its links with the first pharaohs were recognized by the ancient Egyptians themselves, and almost 100 years of archaeological research has confirmed the site's central role in the transition from prehistory to history in the Nile Valley (Fig. 1). The present multinational, interdisciplinary expedition to Hierakonpolis began in 1967 under the direction of the American anthropologist, Walter A. Fairservis, who was joined in 1969 by an Amer-

ican colleague, Michael A. Hoffman. The startling discoveries made under their direction in some 16 seasons of survey and excavation have added immensely to our understanding of the vast site and leave little doubt that the ancient traditions associating Hierakonpolis with the rise of early Egyptian civilization were well founded.

Their work proved conclusively that the Nile floodplain was the focus of habitation. Extensive survey in the desert beyond the floodplain established the enormous extent of the site and demonstrated that it is the largest predynastic settlement still extant

and accessible. In his fieldwork, Hoffman focused primarily on areas of ancient habitation, but he also investigated the extensive cemeteries of the site and chose to excavate in the large (200×90m) cemetery known as locality 6, which is situated in the Wadi Abul Suffian some 2.5km southwest of the edge of the zone of cultivation (Fig. 2).

Previous excavations at the locality 6 cemetery

Michael Hoffman was the leader of the predynastic component of the American project at Hierakonpolis when I joined the expedition in 1980. My chief involvement was with the cemetery at locality 6, where people of high status were buried. Hoffman's excavations took place there in 1980, 1982 and 1985, during which time he excavated 11 tombs.¹ Three of these were dated to the predynastic early Naqada II period, three (or four if the stone-cut tomb 2 is included) to the protodynastic, or Naqada III, period (Table 1), one was a possible reburial, and three were animal graves containing dogs, baboons and cattle (Fig. 3). Hoffman made certain assumptions about the dates of the animal graves, based principally on their proximity to other graves.² He suggested that an animal "quarter" once clustered around the large



Figure 1 Upper and Lower Egypt, showing the location of the predynastic settlement of Hierakonpolis and selected other ancient sites and modern towns.

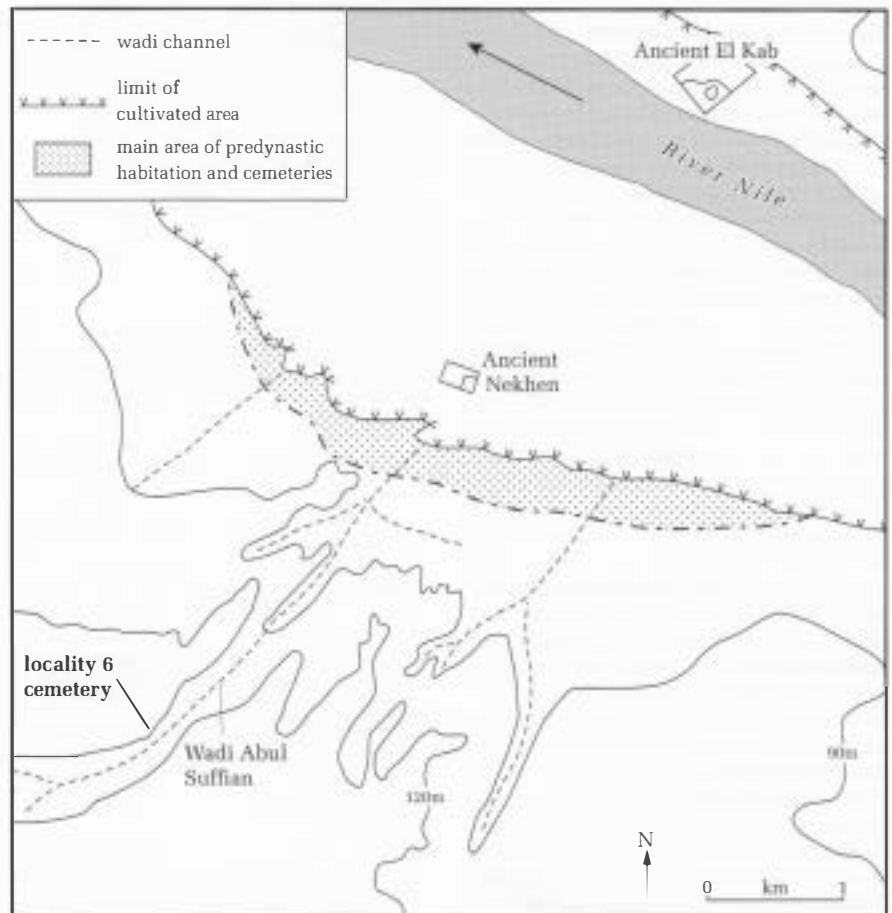


Figure 2 The predynastic settlement of Hierakonpolis and the location of the locality 6 cemetery.

Table 1 Simplified chronology of the predynastic and protodynastic periods BC in Upper Egypt

Predynastic	5500–3200	Upper Egypt
Early	5500–3800	
	3800–3600	Naqada Ia, Ib, Ic
Middle	3600–3400	Naqada IIa, IIb
Late	3400–3300	Naqada IIc
	3300–3200	Naqada IID
Protodynastic	3200–3050	Naqada IIIa, IIIb, IIIc

stone-cut tomb 2 and implied that all the animal burials were contemporary with it, and probably of Naqada III age. This may well be true for the cattle burials south of tomb 2, one of which (in tomb 7) was excavated, but further work on the material now indicates that the baboon grave (tomb 12), which is 45m northeast of tomb 2 (Fig. 3), dates to Naqada I–II, and the dog grave (tomb 5), by association with tomb 3, also dates to that time.

The responsibility for producing the site report on work in the locality 6 cemetery fell to me when Hoffman died prematurely in 1990, and it has not proved a straightforward task. He had postulated a gap in the use of the cemetery during the late predynastic or Naqada IID period (3400–3200 BC), when, he suggested, the rulers had moved their funeral business nearer to the area of cultivation, returning later to use the cemetery again during the protodynastic period. As I studied the material, I did not find this hypothesis convincing and it became apparent that chronological clarification of the cemetery would be possible only through renewed excavation. I therefore proposed a return to the cemetery to test my alternative hypothesis that there had been a horizontal expansion of it through time from the Naqada I–II graves at the southwest end to the large protodynastic (Naqada III) tombs at the north end. Accordingly, with grants from the British Academy and the UCL Institute of Archaeology, and helped by contributions from the Friends of Nekhen organization, I led a mini-component of the multinational expedition to the site in November 1997.

Renewed excavation at the cemetery

Once on site, the decision was made to excavate part of a 10m square approximately 90m north of the stone-cut tomb 2 (Fig. 3), where, according to Hoffman's 1980 map, there was a line of three grave depressions. This square (18H) was selected for two reasons: my surface survey of artefacts had suggested the likelihood that graves dating to the late Naqada II period might be found in this central part of the cemetery; and, secondly, because of a lack of time and personnel, it seemed sensible not to excavate a square where large mudbrick-lined tombs might be found. I had been involved with the excavation of tomb 11 in 1982, which, although looted like all the tombs

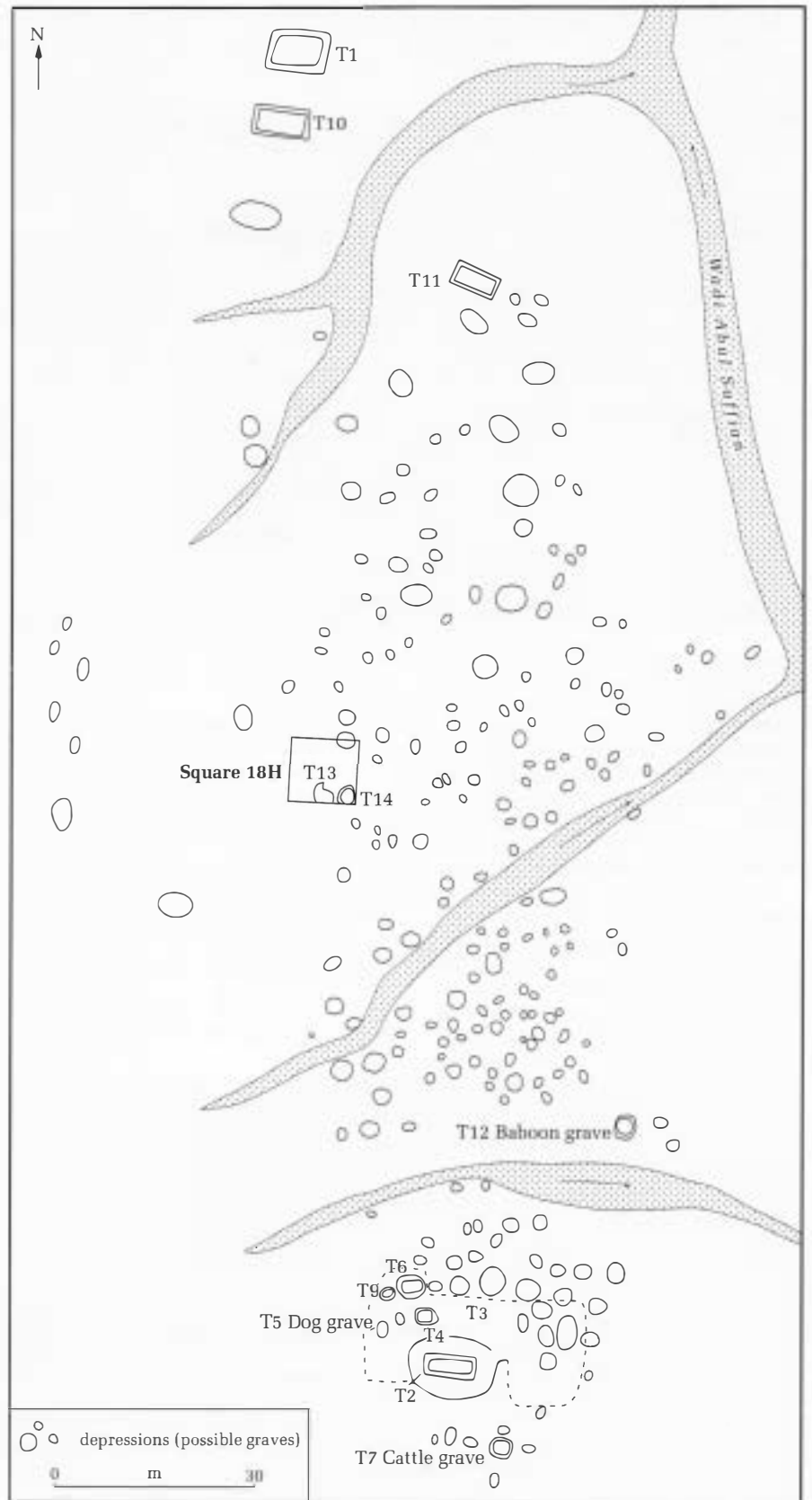


Figure 3 The locality 6 cemetery at Hierakonpolis, showing the location of excavated animal graves and square 18H, where the elephant burial was discovered in tomb 14.

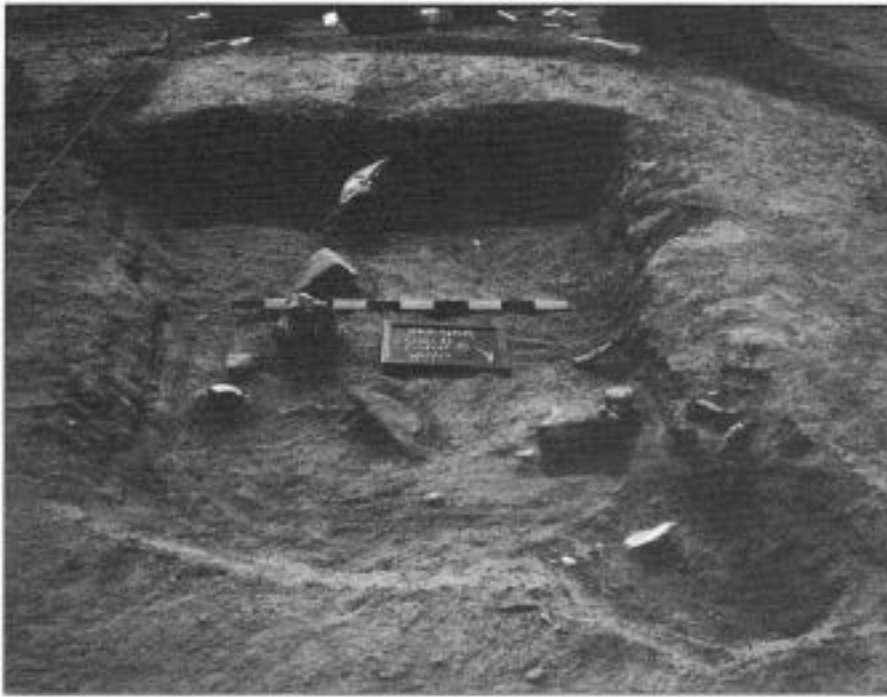


Figure 4 Tomb 14, looking south, with both the elephant jaw and a sherd of white cross-lined pottery in situ that indicated the date of the burial (scale bar: 10 cm intervals).

in this cemetery, had produced several hundred finds including gold, silver, turquoise, garnet, carnelian and lapis lazuli beads and amulets, carved ivory and wood, figurines in pottery and stone, and many pottery sherds – all of which took a great deal of time to sort, record and reconstruct.

The objects retrieved during cleaning of the surface of square 18H prior to excavation consisted of a mixture of early predynastic artefacts, including over 40 chert arrowheads (transverse projectile points) and fragments of disc-shaped mace heads,³ and later protodynastic artefacts such as fragments of stone vases, obsidian blades, and pottery tempered with calcium carbonate. These finds were puzzling because there was no known large tomb visible in the vicinity. However, in 1999, a magnetic (magnetometer) survey by Tomasz Herbich, Director of the Polish Centre of Mediterranean Archaeology in Cairo, suggested the presence of a large tomb under a track west of square 18H, which may account for these finds.

Burials of dogs and humans

Then, as our time began to run out, and with the results thus far rather disappointing, the work became more interesting. We had noted that a pit⁴ (which when excavated we labelled tomb 14) in the south of square 18H (Fig. 3) had a spread of animal bone over its northwest corner. Because of their large size these bones were tentatively identified being as from cattle. Another bone scatter to the south of the pit contained the long bones of at least seven domesticated dogs, together with skull, jaw and tooth fragments, vertebrae and foot bones and over 40 claw cores. Human bone

was also found, associated with scraps of linen, resin and string, under the animal bone in the spoil thrown out by looters, suggesting that it had been thrown out from the grave pit first. The source of the dog bones is not certain. They could have come from a grave south of square 18H and been thrown out to the north by looters, although it seems more likely that they came from the graves we were excavating (tombs 13 and 14) because we found more dog bone in them.

The second pit⁵ we excavated and labelled tomb 13 (Fig. 3). The bones within

it proved to be a mixture of human and dog, and the few pottery sherds found were identified as predynastic, but of Naqada Ic age, probably around 3700 BC. Theya Molleson of the Natural History Museum in London, who specializes in the study of human bones from archaeological sites, analyzed the human bone from the looters' spoil and from tombs 13 and 14, and concluded that no more than two individuals were represented, an adolescent male and a young adult male. Most of the latter's bones came from tomb 14, signifying that the body was possibly buried in that tomb.

The discovery and identification of the elephant

During the clearance of the bones from the spoil on the north edge of tomb 14, flakes of ivory began to be noted. As work proceeded, many more fragments appeared, sufficient finally to be recognized as the remains of a small, straight tusk. The right side of a large lower jaw lacking teeth, with tooth sockets uncharacteristic of cattle, was found in the south end of the tomb (Fig. 4), and the earlier tentative identification of cattle (although there was some cattle bone too) we then amended to hippopotamus. A rim fragment of a white cross-lined pottery bowl came out of the north end of the tomb, which, together with a few other sherds of black-top red jars, polished red bowls and shale- and calcite-tempered sherds that were found, dates the burial to c. 3700 BC, in the Naqada Ic period. The discovery in context of the white cross-lined sherd was a first for the expedition and it added to our excitement because hippopotami are often depicted in white paint on this type of red-polished pottery made from Nile silt.

From the surface contexts and the fill of tomb 14, we retrieved remains of the large



Figure 5 Part of the lower jaw of the juvenile elephant (*Loxodonta africana*) that was found in tomb 14, showing the pattern of tooth sockets.

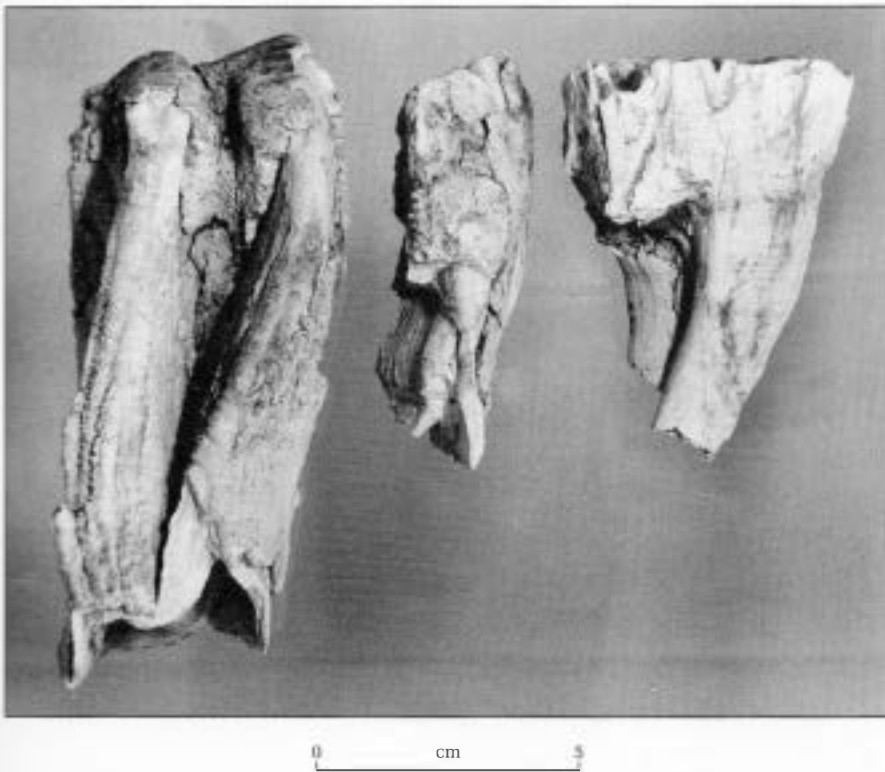


Figure 6 Three fragments of cheek teeth (probably from a premolar and the first molar) from the elephant jaw found in tomb 14.

animal, which included pieces of tusk, skull, the right side of the jaw already mentioned (Fig. 5), vertebrae, foot bones, ribs, pelvis and scapula, many fragments of long bones, some separate parts of limb bones still in the process of growth (unfused epiphyses), and parts of cheek teeth (Fig. 6). We lacked a specialist in the study of animal bones, but Theya Molleson was able to help with the preliminary analysis of these finds. She had a strong suspicion at the time that our so-called hippopotamus was actually a little elephant. I did not believe this then because, if true, it would be such a remarkable discovery in a burial. However, the bones were later identified, from photographs, by Adrian Lister and Paul Davies of the UCL Department of Biology as from a juvenile African elephant (*Loxodonta africana*). On the basis of the size of the lower jaw (Fig. 5) and the wear on some of the tooth fragments (Fig. 6) they suggested an approximate age for the elephant of $8 \pm$ years and pointed out that the presence of unfused epiphyses of the phalanges (foot bones) also indicated that the animal was a juvenile.

African elephants

As far as is known from palaeontological and archaeological evidence, the only elephants to survive the end of the Ice Age were the present African and Indian forms, respectively *Loxodonta africana* and *Elephas maximus*.⁶ It is not known whether the Syrian elephant, known from literary and pictorial evidence to have existed in

historic times, was related to the Indian or the African form, or had evolved separately and was distinct from both living groups. The African elephant is larger than the Indian form and can be tamed, although African elephants are seldom trained.

Archaeological evidence of elephants in Egypt

Although surface finds of elephant bones have previously been reported from Hierakonpolis,⁷ specimens of elephant are unknown from other predynastic sites in Egypt. However, they have been found in neolithic contexts in the Fayum⁸ and Dakhla⁹ oases in the desert west of the Nile. The British archaeologist, Gertrude Caton Thompson, excavated the skeleton of an elephant at site K on the shoreline of the Fayum lake. An arrowhead was found lodged in the bones (another arrowhead was found in the ribs of a hippopotamus at site N in the Fayum), but Caton Thompson could not accept that such a weapon could have killed the elephant without poison. However, recent experiments have shown that elephants could have been killed with Clovis flint points, the type of spearhead used by early native Americans.¹⁰

Predynastic depictions of elephants

Several predynastic depictions of elephants are known. They take the form of carvings on stone (petroglyphs) and ivory, decorations and models on pottery, and, in one case, a freestanding pottery model of an elephant. The closest depiction geographically to the locality 6 cemetery is a petroglyph of an elephant found at locality 61c at Hierakonpolis (Fig. 7). Unfortunately, the date of this rendering is not known. It could pre-date the use of the area as a seasonal settlement and cemetery during Naqada I-II times. During the Neolithic a moist interval, known as the Subpluvial II phase, replaced arid conditions around 7000 BC, and contemporary rock drawings in the deserts to the west and east of the Nile depict giraffe, elephant and ostrich – all animals that favour savanna environments and avoid drier steppes and deserts.

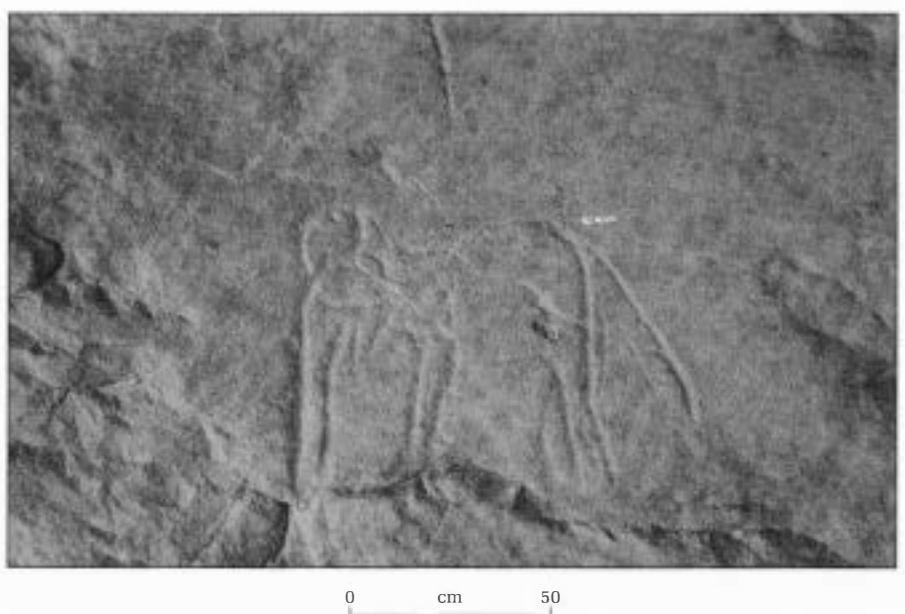


Figure 7 Petroglyph of an elephant at locality 61c, Hierakonpolis.

Their disappearance from the record on the rocks by the beginning of the Naqada II period about 3600 BC led the environmental archaeologist Karl Butzer to suggest that there had been a temporary climatic change to more arid conditions at that time,¹¹ which made the habitat unsuitable for elephants.

Other authors have presumed from the depictions known on artefacts that the elephant was still living in Egypt during the Naqada I period, but had been hunted to extinction by c. 3500 BC, in early Naqada II times, an interpretation that fits well with the disappearance of elephants from the rock drawings by c. 3600 BC.¹² However, few of these early depictions on artefacts appear to derive from excavated contexts, so the dating of them is often problematic. The only known freestanding model (mentioned above) comes from the Naqada I-II settlement at the desert edge at Hierakonpolis. It was excavated by the archaeologist Henri de Morgan in 1912 and is now in the Brooklyn Museum, New York.¹³ It is a crude pottery model, 5.8 cm long by 4.5 cm high, of an elephant with a stumpy trunk and relatively small ears, and it may suggest that the animal was commonplace enough to have been modelled as a toy, or perhaps that the elephant was in some way domesticated.

The famous Egyptologist, Sir Flinders Petrie, found two depictions of elephants in his excavations of Naqada I sites in Upper Egypt. One is incised on a black-top, red-polished pottery jar from grave 879 at Naqada just north of Luxor (Fig. 1). It is now in the Petrie Museum of Egyptian Archaeology at UCL.¹⁴ The other is depicted on a palette (a flat stone used for preparing cosmetics) from grave B102 at Abadiyeh north of Naqada (Fig. 1) and is now in the Musée d'Art et d'Histoire, Brussels.¹⁵ Both of these artefacts date in the range c. 3700 to c. 3600 BC (Naqada Ic-IIa).

The elephant has not been noticed on the type of painted pottery that is characteristic of the Naqada IIc-IIId period, except for one example of a stylized elephant that appears on a decorated vase from grave 454 at Naqada, which is now in the Ashmolean Museum, Oxford.¹⁶ This negative evidence reinforces the inference that elephants had become scarce in Egypt by 3500 BC.

A further decrease in rainfall occurred between 3300 and 3100 BC, and Nile floods decreased from early dynastic times,¹¹ so a return to a big-game fauna along the Nile would have been unlikely then. The objects made of elephant ivory that were found in the famous Main Deposit in the temple of Nekhen at Hierakonpolis (Fig. 2) are presumed to have been imported through the town of Elephantine (present-day Aswan) from farther south in Africa during the protodynastic period.¹⁷ Stylized depictions of elephants on ceremonial artefacts such as knife handles, which resumed at this time, suggest that the animals had assumed ritualistic signifi-

cance. They are often shown on mountains,¹⁸ sometimes accompanied by snakes, which may imply that they were observed outside the Nile Valley.

The discovery of an actual interment of an elephant in a Naqada I tomb dated to c. 3700 BC is of great ecological and social significance for our understanding of the predynastic period in Upper Egypt. Together with the scarce but definite depictions of elephants datable to Naqada I to early II times, and the lack of such images through most of the Naqada II period, it raises fascinating questions concerning the relationships between the ancient Egyptians and these impressive animals.

Notes

1. For an account of the excavations at locality 6, see *The predynastic of Hierakonpolis*, M. A. Hoffman, 38–60 (Cairo, Illinois: Egyptian Studies Association Publication no. 1, 1982).
2. M. A. Hoffman, "Where nations began", *Science* **83**, 42–51, 1982.
3. A mace head is a centrally perforated stone mounted on a pole to form a weapon (the mace).
4. This pit had been numbered 236 by Carter Lupton, Hoffman's site supervisor.
5. This pit had been numbered 243 by Carter Lupton, Hoffman's site supervisor.
6. The information in this paragraph is taken from *Domestic animals from early times*, J. Clutton-Brock, 114–15 (London: British Museum (Natural History) and Heineemann, 1981).
7. John McArdle, the zooarchaeologist who worked with Michael Hoffman in the 1980s, reported surface finds of elephant bone in the locality 6 cemetery at Hierakonpolis; see p. 50 in Hoffman's article in *Science* cited in n. 1, and Hoffman's comment on p. 44 in K. L. Willoughby & E. B. Stanton (eds), *The first Egyptians* (Columbia, South Carolina: McKissick Museum, 1988).
8. See *The desert Fayum*, vol. 1, G. Caton Thompson & E. W. Gardner, 172 (London: Royal Anthropological Institute of Great Britain and Ireland, 1934).
9. C. S. Churcher, "Dakhleh oasis project", *Journal of the Society for the Study of Egyptian Archaeology* **13**, 178–97, 1983. For a spurious discovery of a neolithic elephant see A. Gautier, R. Schild, F. Wendorf, T. W. Stafford Jr, "One elephant doesn't make a savanna: palaeoecological significance of *Loxodonta africana* in the Holocene Sahara", *Sahara* **6**, 7–20, 1994.
10. G. C. Frison, "Clovis tools and weaponry efficiency in an African elephant context", *American Antiquity* **54**, 766–78, 1989.
11. K. W. Butzer, "Patterns of environmental change in the Near East during late Pleistocene and early Holocene times", in *Problems in prehistory: North Africa and the Levant*, F. Wendorf & A. E. Marks (eds), 389–410 (Dallas, Texas: Southern Methodist University Press, 1975).
12. See *Manuel d'archéologie égyptienne*, I, J. Vandier, 270 (Paris: A. Jean Piccard, 1952).
13. Museum no. Brooklyn 09.889.325, and see *Predynastic and archaic Egypt in the*

Brooklyn Museum, W. Needler, 357 (New York: Brooklyn Museum, 1984).

14. Museum no. UC.5899, and see plate 51 (nos 11 and 12) in W. M. F. Petrie & J. E. Quibell, *Naqada and Ballas* (London: Egyptian Research Account no. 1, 1896).
15. Museum no. E7062, and see plate 12 (no. 43) in W. M. F. Petrie, *Diospolis Parva* (London: Egyptian Exploration Fund no. 20, 1901).
16. Museum no. Ash.1895.584, and see plate 65 (nos 11 and 4) in the reference cited in n. 14.
17. See *Hierakonpolis II*, J. E. Quibell & F. W. Green, 29–30 (London: Egyptian Research Account and the British School of Archaeology in Egypt no. 5, 1901).
18. See *Ancient Hierakonpolis*, B. Adams, 69 (Warminster: Aris & Phillips, 1974) for an example of an ivory from the Main Deposit at Hierakonpolis that depicts elephants on mountains.