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Tell El-Farkha (Ghazala): Season 2001

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TELL EL-FARKHA
(GHAZALA)
SEASON 2001

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in association with

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The present campaign, sponsored by the Poznań Prehistoric Society, Jagiellonian University in Cracow, Adam Mickiewicz University Fund in Poznań and the Polish Center of Archaeology in Cairo, lasted from April 4 to June 6, 2001.[1)]

On the western kom the area excavated last year was now extended to the west and north, while on the central kom further work was carried out within the confines of a trench dug in 2000. Two trial trenches were explored on the eastern kom, revealing in one of them the remains of a cemetery.

A pottery analysis and information on archaeozoological and archaeobotanical studies conducted at the site this season are appended to this report (see pp. 118-126 below).

1) The team headed by Dr. Marek Chłodnicki and Prof. Dr. Krzysztof M. Ciałowicz included: Mr. Krzysztof Cichowski, Ms Joanna Dębowska, Ms Marzenna Gurtowska, Mr. Maciej Jórdeczka, Mr. Jacek Kabaciński, Mr. Ryszard Kirkowski, Mr. Piotr Osypiński, Mr. Piotr Szejnoga, archaeologists; Mr. Mariusz Jucha, Ms Agnieszka Mączyńska, ceramologists; Ms Maria Abłamowicz, archaeozoologist; Mrs. Lucyna Martens-Kubiak, palaeobotanist; Mr. Robert Słaboński, Mrs. Halina Żarska-Chłodnicka, documentalists; Mr. Piotr Kołodziejczyk, Ms Anna Longa, Mr. Eryk Schellner, Ms Izabela Dachtera, Ms Magdalena Gorlas, students of archaeology. The Supreme Council of Antiquities was represented by Mr. Yasser el-Said el-Gamal, Inspector from Mansura.

The Mission would like to express its gratitude to the Authorities of the Supreme Council of Antiquities for their continuous help, encouragement and interest in our work.

*Fig. 1. Figurine of a prostrate man, from the Western Kom (Photo R. Słabońsk*i)

*Fig. 2. Western Kom. Zoomorphic vessel, from the Western Kom (Photo R. Słabońsk*i)

EXCAVATIONS ON THE WESTERN KOM

Work on the Western Kom – a total surface of 505 sq. m was excavated this year – was focused on an area adjoining the already explored part on the north and west, to where the big structures explored earlier, like the Nagadan residence and the big house attributed to the Lower Egyptian Culture, extended. The first step was to remove the overlying layers in order to reach the said structures below; hence, investigations concentrated on the latest periods of settlement, that is, phases 4 and 5.[2)]

Phase 4, which was distinguished on the grounds of typical pottery, is dated to the Nagada IIIa2 and IIIb (IIIA1-IIIB) period, while phase 5, identified in the highest-lying layers, features an assemblage typical of the transition from Nagada IIIb to IIIc1 (late IIIB-IIIC1), that is, the rule of the Zero and early First Dynasties.

A small deposit of figurines and vessels made of faience, clay and stone was discovered just below the surface. Of special interest are the images of baboons and a representation of a prostrate man (*Fig. 1*). His only covering is a penis sheath and he wears his hair and beard long. Another clay figurine found nearby represents a standing man, naked, longhaired and bearded; the manner of execution points to the Predynastic origins of the piece. Especially noteworthy is a set of five egg- or barrel-shaped clay rattles with engraved decoration. One should also mention models of piriform maces, miniature vessels made of different materials, zoomorphic vessels representing a water bird (duck or goose), clay double-vases, faience beads and objects that are presumably game counters. Some of the constituent elements of the deposit, like the baboon figures and the prostrate man, were deposited in the last phase of the building's use, in terminal Zero or early First Dynasty times. Others come from earlier periods with the oldest being a zoomorphic vessel (*Fig. 2*) and a figurine of a standing man found on the deepest level.

The deposit was uncovered inside massive walls marking off a relatively small room that was part of a building of considerable size (at least 25 by 15 m) (*Figs. 3*, *4*). The structure continues west and south, beyond the area explored this year. The mudbrick wall survives to a depth of over 1 m. The lowest associated levels have not been reached this year, but there is reason to suppose that they are somehow superposed on top of the Nagadan building discovered in 2000. A chronological stratification of the structure and an identification of particular building phases will be attempted once the work is completed.

The structure is made up of a series of rooms, which agglutinated over a certain period of time in response to growing needs or were rebuilt and developed after natural disasters. One such event may have been a fairly mild earthquake, which resulted in the collapse of walls of some of the rooms lying southeast and northwest of the area where the deposit was discovered. The debris buried many items, including big storage vessels, thin-walled red bowls and cosmetic palettes of greywacke. To judge by the geometric forms of these palettes, they were made in the third phase of Nagadan culture.

2) For previous work at the site, cf. M. Chłodnicki, K.M. Ciałowicz, *PAM X, Reports 1998* (1999), 63-70; id., id, *PAM XI, Reports* 1999 (2000), 59-76; id., id., *PAM XII, Reports 2000* (2001), 85-97.

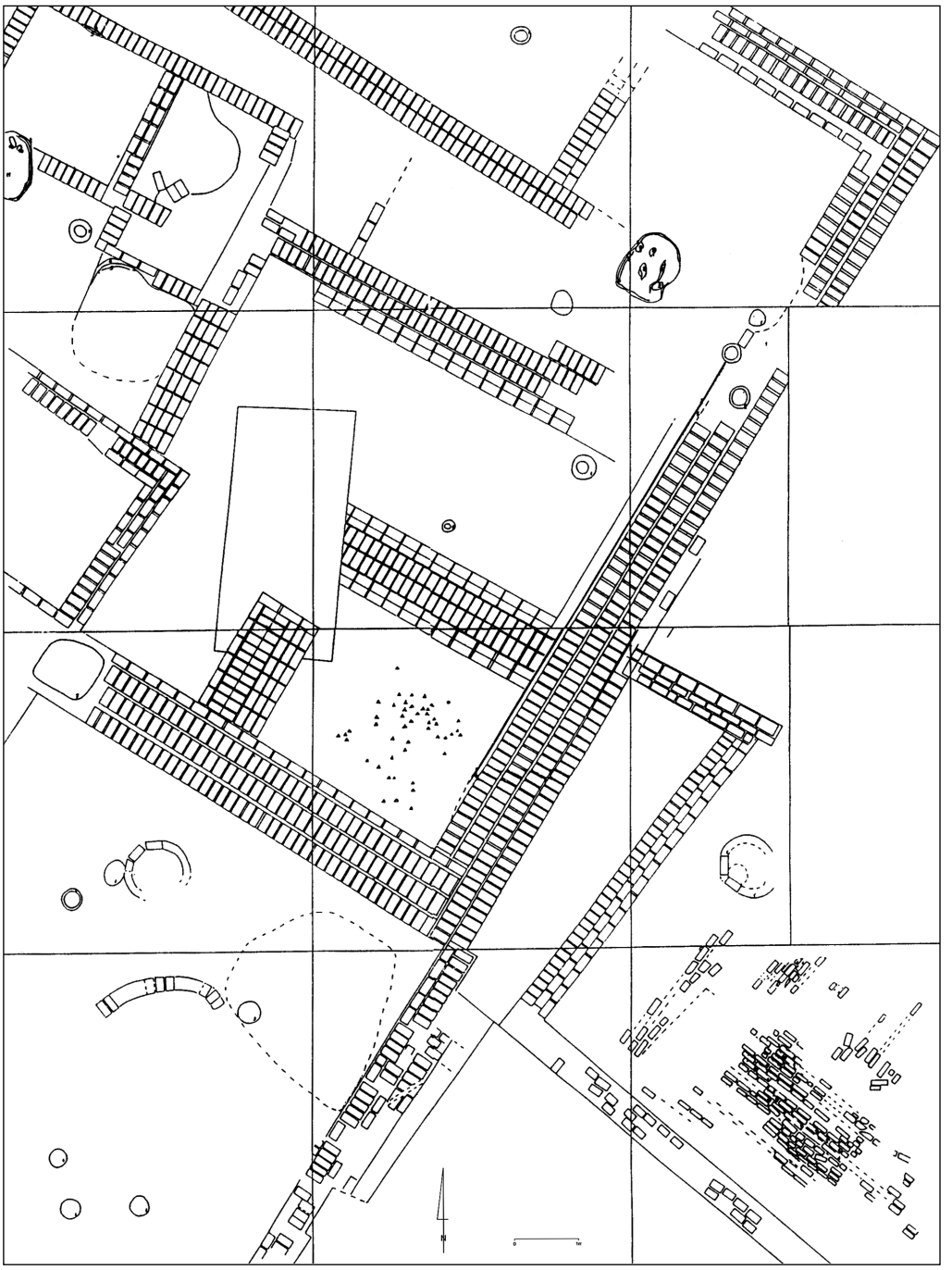

Fig. 3. Western Kom. Mudbrick structure (Drawing J. Dębowska)

The functional differentiation of particular rooms and the related differences in the thickness of walls and wall execution techniques should be emphasized. The main walls and those surrounding the deposit are the thickest, reaching c. 120 cm. Brick size remains more or less constant at c. 15 by 30 cm throughout the period. Walls one, one-and-half or two bricks thick (from 30 to 60 cm) surround other rooms that are of distinctly domestic character. Small hearths were discovered chiefly in the small units, enclosed by thin walls that separated them from the neighboring spaces. An especially big concentration of hearths was discovered in the northwestern part of the complex. Occasionally, bottomless vessels were found standing in the hearths (in similarity to previous finds of the kind recorded at Tell el-Farkha). Whole vessels, querns and grinders were recovered from the vicinity of the hearths. In some of the other, bigger rooms, storage vessels were preserved standing *in situ* or else there were mud stands that had once supported such vessels.

The layers excavated this year have yielded a noticeable quantity of small finds, including potsherds in bulk (some examples of wavy-handled pottery with visibly projecting lug handles, possibly imports from Palestine), whole vessels, mostly of small size, sickle blades and fragments of flint knives, flint scrapers, numerous pieces of querns, stone grinders and pestles, mudseals used to close all kinds of containers (some with impressions of cylindrical seals), stone pendants (amulets)

Fig. 4. Western Kom. Mudbrick structure, view from the west (Photo R. Słaboński)

in the shape of a duck and of a stylized female figure. A highly schematic figurine of a ram was discovered north of the deposit, but inside the thick wall surrounding the complex. One of the most interesting finds was a cylindrical jar with 187 fin bones of fish, some with the thicker end broken off, others whole. Even without further processing, the fin bones with their sharp serrated edge constituted excellent material for making harpoon heads (e.g. for fishing) or even arrowheads for bird hunting. The bones may have been collected on purpose as valuable raw material. Immediately next to the jar a half of a clay boat model was discovered. (KMC)

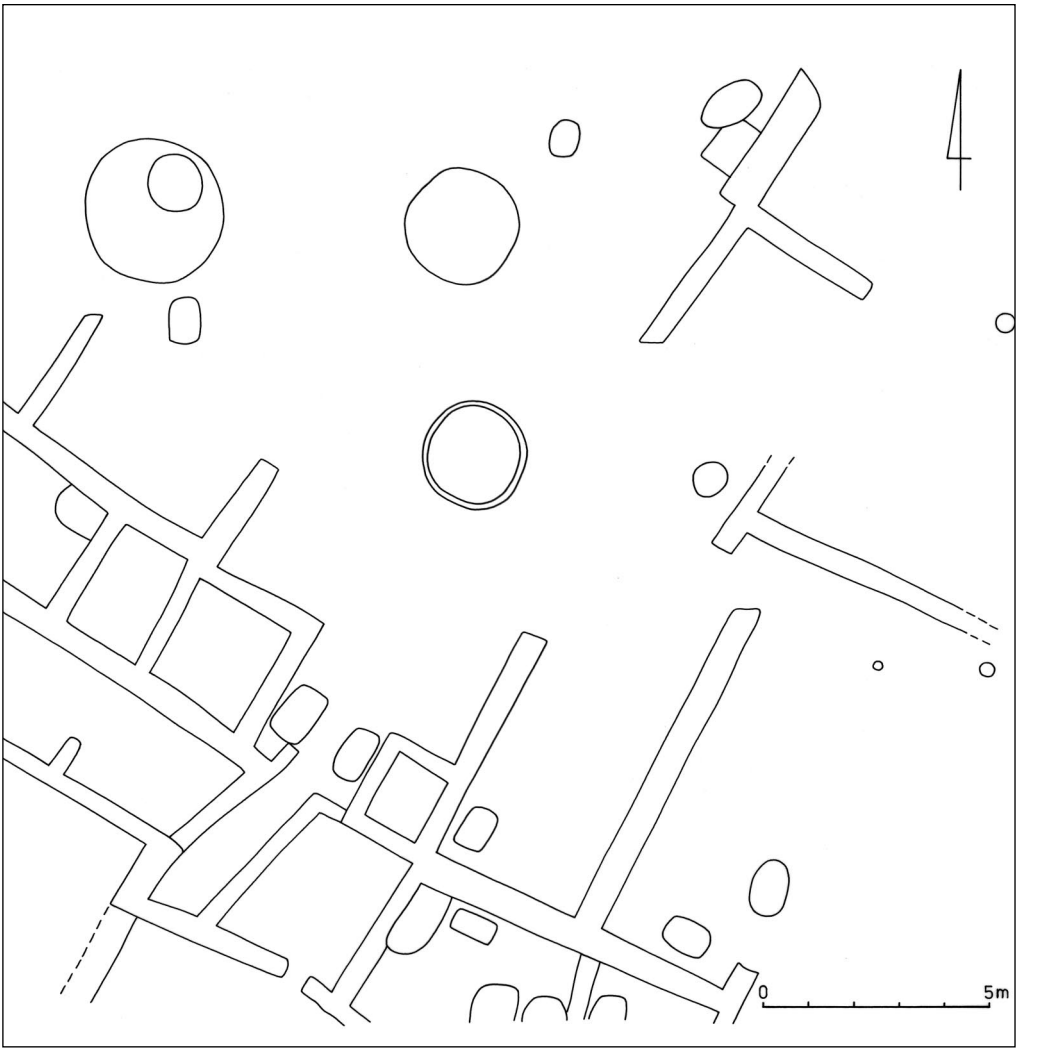

Fig. 5. Central Kom. Mudbrick structures in level 18 (Drawing E. Schellner)

EXCAVATIONS ON THE CENTRAL KOM

Investigation of the central kom proceeded within the boundaries of the trench marked out in 2000. An area of 506 sq. m was examined. The youngest settlement phases (levels 1-5, of which levels 1-3 were explored in 2000) are attributable to the Old Kingdom period. Little evidence was found of any permanent features. Only a few fragments of walls, aligned NE-SW, were discovered. These were approximately 30 cm wide and did not form any enclosed room layouts. Numerous traces of hearths were recorded, as were the remains of a kiln and a series of silos measuring from 1 to 1.5 m in diameter. The uppermost occupational levels of this tell have survived in poor condition due to the concentrated activities of burrowing animals in this area.

In the older levels (6-7), preliminarily dated to the beginning of phase 7, the outlines of walls become easier to trace, particularly in the central section of the southern trench, where a concentration of six simple kilns was also recorded. Three vessels were discovered *in situ* in the same level.

The Early Dynastic settlement phase of this site (phase 6) starts with a deposit identified as level 8. Successive phases of

Fig. 6. Central Kom. Mudbrick structures in level 18, view from the southwest (Photo R. Słaboński)

rebuilding and extension can be traced beginning with level 15 (phase 5). During this period a large utility site came into being, with a spacious courtyard opening out to the northwest. A kiln complex stood in its southwestern corner and a large silo, 2 m in diameter, at its western edge. Four rooms abutted the courtyard, the largest of them measuring 3 by 5.5 m. The courtyard itself was developed during successive building phases (beginning with level 12) with rooms being traced inside its boundaries. New rooms also appeared to the north. This complex was probably serviced by the midden lying to the east of it, in the eastern section of the trench. A major concentration of animal bones was found here together with numerous highly fragmented pottery sherds. Further development phases of this utility area can be traced in levels 10-11.

The top of settlement phase 4 on the central kom was identified in levels 16-18. The layout of buildings was different here than in phase 5, although the general NE-SW orientation did not change (*Figs. 5, 6*). Exploration of the southeastern section of the trench revealed a number of small rooms (the smallest being 2 by 2.5 m) and some larger ones with corner stoves. A group of three large silos, measuring 2-3 m in diameter, stood in the northern part of the trench. Only one half of a silo has been examined to date, the others to be excavated in 2002. Soil samples taken from it have been found to contain large quantities of barley grain.

Work on the central tell yielded a considerable amount of finds, predominantly pottery sherds, though a number of complete vessels were also found. Other items included a large tool assemblage

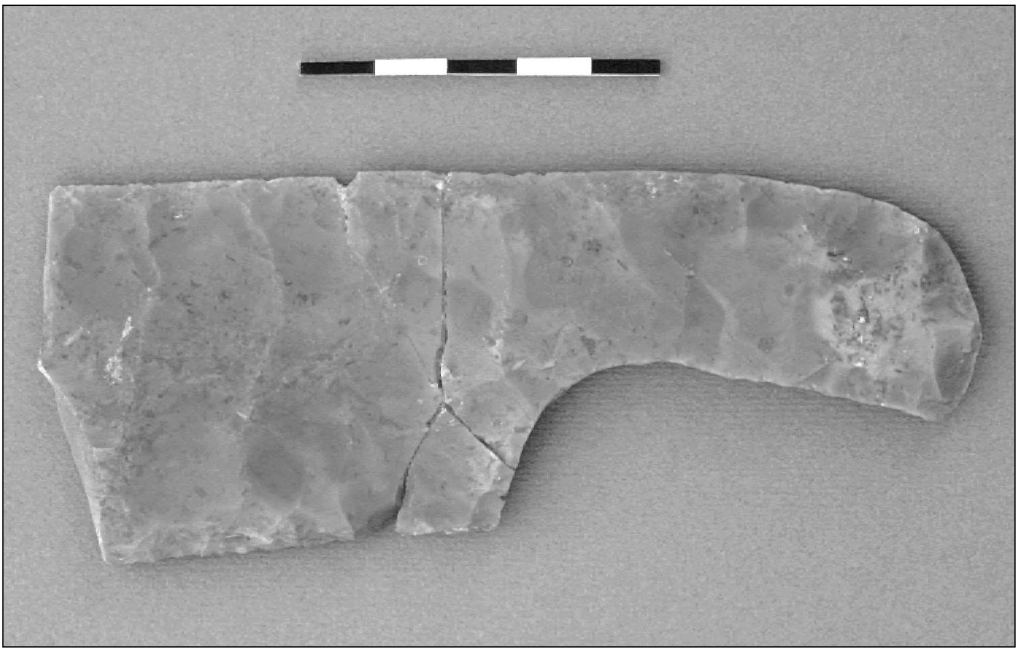

Fig. 7. One of the flint knives found on the Central Kom (Photo R. Słaboński)

including a deposit of flint sickle blades – a harvester's kit (*Fig. 7*) – concealed within a wall, as well as stone tools, cylindrical seal impressions, stone beads and fragments of stone and copper bracelets.

The same trench yielded substantial quantities of animal bones and plant remains providing information about the diet of Tell el Farkha's ancient inhabitants (see archaeozoological and palaeobotanical appendices below). The data acquired thus far clearly indicates that in the Early Dynastic period the central tell functioned as a utility area serving the residential and temple sectors of the settlement located on the western tell. (MC)

EXCAVATIONS ON THE EASTERN KOM

Of the two trenches dug this year, one was situated in square E44b and was initially 5 by 3 m in size, later extended a meter to the north and two meters to the west (partly into square 44a). Three brick-ensconced tombs were found, all aligned NE-SW, following in this the traditional orientation of all of the houses raised on Tell el Farkha. They were dated provisionally to terminal Dynasty 0 and early Dynasty I.

Tomb no. 1 consisted of a sand-and-mud brick superstructure over the actual burial chamber, the pit of which was considerably smaller in extent. The walls of the tomb (one-brick thick) were plastered with a fragmentarily preserved white substance of organic origins, bearing distinct traces of single and interwoven fibers – presumably a mat that had been laid over the fresh plaster.

The skeleton was strongly contracted, lying on its left side with the head to the northeast facing southeast, hands in front of the face. Despite the deteriorated condition of the bones, measurements and analysis identified the remains as that of a woman. Evidence of a mat was observed underneath the bones.

One of two storage vessels found lying in the southern end of the tomb had a continuous row of lightly impressed half-bow ornaments and a rope band on the shoulders, below it a pot-mark made after firing, resembling a hoe in vertical position – the later *mr* sign. The other was decorated with three impressed half-bow ornaments on the shoulders on opposite sides of the vessel. Four cylindrical jars were also uncovered. An empty space was observed in the fill above the mouths of these vessels, here as well as characteristically in all the tombs.

The tomb yielded six burnt osseous remains, five belonging to pig, one unidentified. The pig bones were all probably from a single animal aged about 2 years.

Tomb no. 2 also consisted of a kind of brick superstructure that is considerably larger than the underlying burial pit. Just below the structure, at a depth of c. 80 cm, a white organic layer was revealed. Constituting it were the remains of a mat covering the chamber with the grave goods.

The skeleton – that of a male in this case – appeared to be almost prone on his back, the head turning to face northeast (*Fig. 8*). A big hole in the skull suggests a probable cause of death. The bones, badly deteriorated and disturbed, especially in the part of the upper limbs, had been squeezed in between the vessels and the eastern chamber wall, possibly indicating that the body had largely decayed by the time it was buried. Traces of a mat were found under the skeleton.

Fig. 8. Eastern Kom. Tomb no. 2, view from the south (Photo R. Słaboński)

The grave goods in this case consisted of 21 ceramic vessels (including those from a layer of vessels overturned and crushed by the collapsing brick superstructure), arranged alongside the north, south and west walls of the tomb. Two large wine jars decorated with a triple rope band pattern deserve special attention. The inscription on one of them represents a falcon on a shield(?). Although there is no *serech* around it, the name of Hor-Aha may still be assumed. On the other jar there is a pot-mark representing a tree(?). Other jars are decorated with continuous or broken rows of lightly impressed half-bow ornaments around the shoulders. They also bear pot-marks; one sign resembles the hieroglyph for *kˁ*, others have an oval bisected by a line or crossing lines. The grave goods also included two small vessels of bone found inside one of the jars, two cylindrical vases (one with a rope band) and a few bowls (two with knobby decoration in bands on the lower half of the body and just above the bottom), not to mention a ceramic cone (game counter?), stone bowl, pestle, a big and almost square palette with grinder, and some miniature beads of carnelian – perhaps a necklace or bracelet worn by the deceased.

Burnt pig bones were discovered in the crushed pots and around them – altogether 434 fragments, representing (in all likelihood) five animals aged from a few to a dozen or so months. Four burnt fish bones were also noted. In some of the vessels the remains of a greasy, presumably organic substance were observed.

In Tomb no. 3, the rim mouths of three vessels appeared just below the surface; the white organic substance covering them represents the remains of a mat spread over the burial chamber. Isolated sand-and-mud bricks were also observed, forming a putative structure over what could be walls destroyed in their upper parts. Judging by the presence of the white organic layer, mats had been used to cover the interior walls and floor, as well as to wrap the body.

The skeleton, identified as that of a woman, was not well preserved and disintegrated easily (*Fig. 9*). It lay in a contracted position, on its left side with legs tucked under and hands in front of the face. The head pointed northeast, the face turned to the southeast. No traces of jewelry of any kind were noted.

Eighteen vessels of varied size were stacked in layers on top of one another in the northern end of the burial chamber. Wedged between particular vessels and between the vessels and the walls were potsherds or especially formed wedges. Again, the most interesting pieces include jars decorated with a rope band or with continuous or broken rows of lightly impressed half-bow ornaments around the shoulders, cylindrical jars and a big but shallow oval plate. Only two vessels bore pot-marks. On one low and squat jar that was otherwise completely plain there is an inscription depicting a long-legged bird with open beak, sitting on pulled up legs next to an oval that resembles the later hieroglyph for *rḳ*. A wide-mouthed red-polished vessel features an engraved representation of what looks like a boat.

Animal bones recovered from the fill consisted of 113 burnt fragments belonging to mammals and five of fish. The mammals represented included the following species: pig, cattle, dog, goat/sheep, hare.

Below the tomb and not in alignment with its structure there appeared a wall three bricks wide. West of this wall, the fill contained pottery and a fragment of a cylindrical-seal impression. The wall may have been part of the floor of a tomb or a bigger, presumably chronologically

Fig. 9. Eastern Kom. Tomb no. 3, view from the south (Photo R. Słaboński)

earlier structure. Investigations in the coming season should clarify the issue.

The other trench, measuring 5 by 5 m, was dug in section E94b, in an area featuring heavy *sebbakhin* damage on the surface. The surviving upper levels (1-2) comprise backfill deposits, containing loose pottery finds dating from the Old Kingdom period (phase 7). Levels 3 and 4, dating from the Early Dynastic period (phase 6), were of a similar nature. A compact layer of silt, about 40 cm thick, was recorded at 5.50 m above sea level (level 5, phase 5) in the eastern end of the trench. It contained negligible quantities of ceramic sherds and represents in all likelihood the remains of a thick wall. At 4.45 m above sea level (layer 9), when the trench had already been reduced in size to a mere 3 by 4 m, part of a mudbrick structure was revealed. These remains were dated provisionally to the transition between phases 3 and 4. Excavation was halted at 4.35 m above sea level and the exposed structures covered over. Work will continue once the trench has been extended in the coming season. (MC, KMC).

APPENDIX A

THE POTTERY, 2001

POTTERY FROM THE CENTRAL KOM (PHASES 4 AND 5)

The most commonly represented pottery in these phases is rough ware, subdivided on the basis of its fabric into rough coarse ware (R1) and rough ware (R2). In the later occupation levels of these phases, R2-ware occurs more frequently than R1-ware, whilst in earlier contexts this situation is reversed. Among vessels belonging to this category, relatively shallow bread moulds with a characteristically rounded base are prevalent. Their rims are usually rounded, though examples with flat or slightly concave rims are also present. Among the pottery vessels with fewer organic and mineral inclusions, the most common are jars with variously distinct neck, externally thickened or slightly turned out rims, slightly convex sides and a narrow, flat or irregular base. Holemouth jars are also present. Of the bowls made using the same technique the most frequently represented are those with straight or concave sides with straight or externally thickened rims. Another example of rough ware found at Tell el-Farkha are the small jars, which are characteristic of the Naqada III period.

Other than rough ware, the Tell el-Farkha pottery finds also include large quantities of red slip ware. The ceramic body used in the production of vessels covered in red slip contains a temper of fine- or medium-grained sand and finely chopped straw (Viennese System category: N I.B). The red slip ware class of pottery primarily comprises bowls and only occasionally jugs with their outer surface covered in red slip. Of the red slip ware bowls the most numerous group is represented by simple, moderately deep or deep, rounded vessels with straight rims (the biggest diameter is either just below the rim or halfway up the vessel) and by simple, open, rounded or shallow bowls of various sizes, with straight rims. The outer and inner surface of these sorts of bowls is covered with red slip and bears traces of smoothing with a hard implement. On the outer surface, these burnishing traces usually run horizontally, whilst the inner surface of the vessel is either burnished horizontally like the outer surface or divided into a horizontally burnished rim edge and a vertically smoothed body.

Also present are bowls which are only partially covered with slip, up to a half or a third of their height. This partial covering of slip was applied primarily to the bowl's outer surface, the inner surface being entirely covered.

The characteristic decorative motif which appears on P-ware dating from phases 4 and 5 is known as punctated decoration. This is sometimes associated with incised lines characteristic of the Pre-Dynastic and Naqada III periods (cf. *Figs. 10-11*).

Hard-smoothed ware pottery is represented exclusively by various sizes of jars. The ceramic body used in the production of S-ware jars was of very good quality. Other than alluvial Nile clay, it also contained temper of fine sand and, occasionally, finely chopped straw (N I.B). Among the S-ware ceramics, it is also possible to distinguish pottery made of marl clay tempered with very fine sand (fabric category M I).

S-ware pottery is also associated with characteristic forms of decoration. The most common motif, which appears on

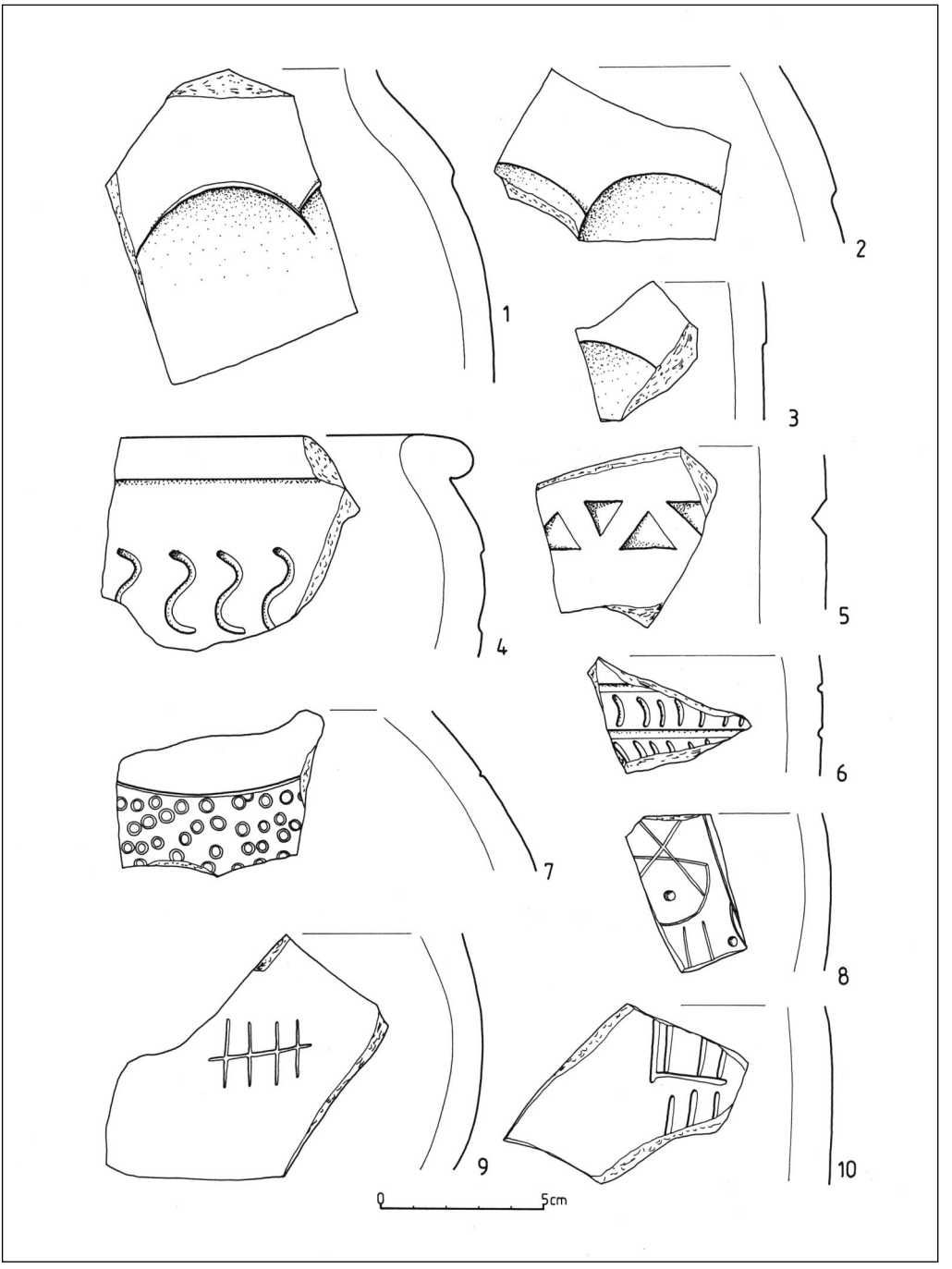

Fig. 10. Assorted examples of decorated sherds from the Central Kom at Tell el-Farkha (Drawing A. Mączyńska)

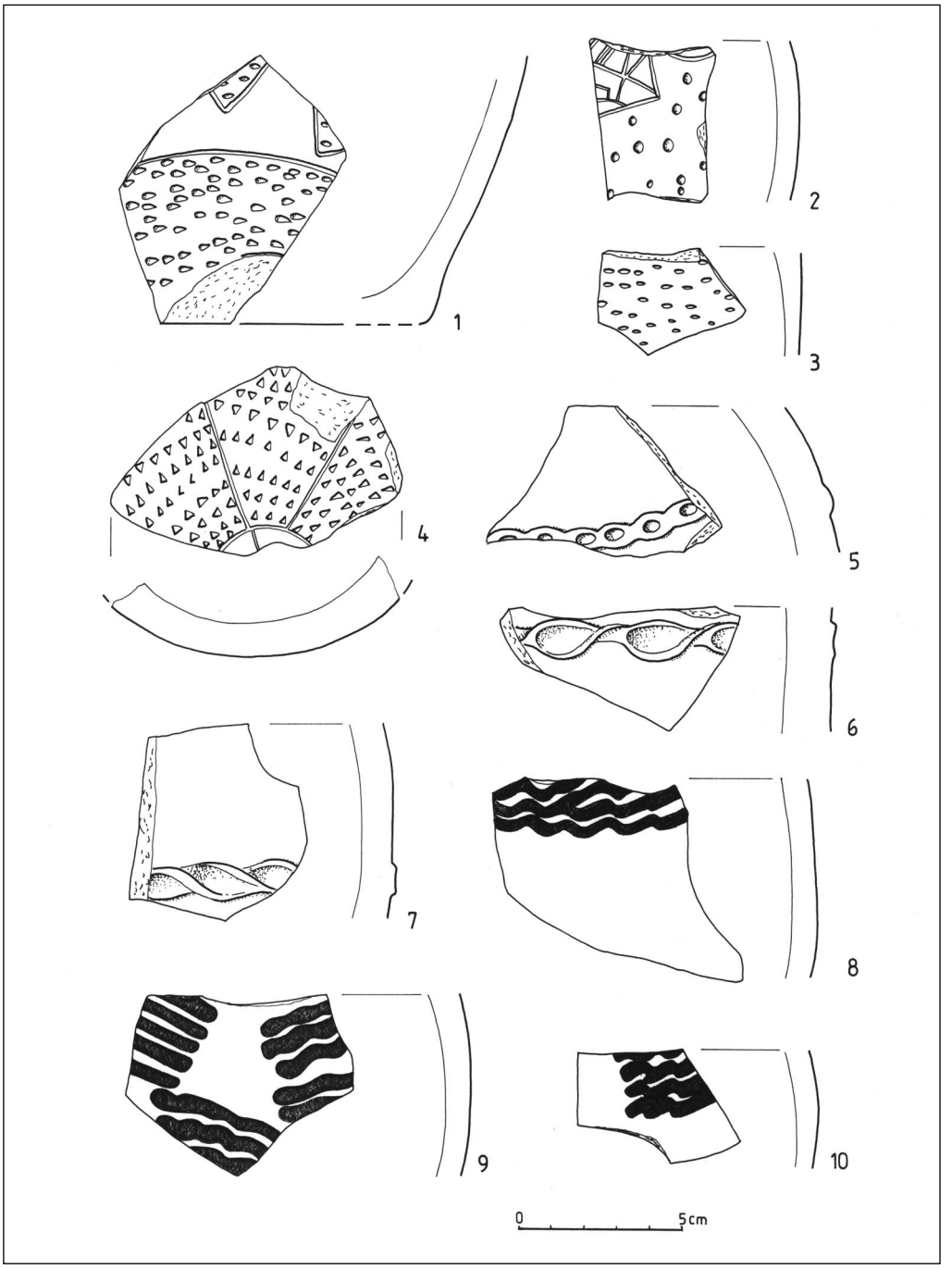

Fig. 11. Assorted examples of decorated sherds from the Central Kom at Tell el-Farkha (Drawing A. Mączyńska)

hard-smoothed ware from phases 4-5, is the plastic rope band, which is found on wine jars, adorning the upper section of the body and/or the area just above the vessel's base. S-ware vessels have also been recorded with motifs consisting of a lightly impressed or incised row of arches on the shoulder. Another decorative motif used on cylindrical hard-smoothed ware vessels comprises a band formed by pushing the clay upwards with the finger-nail. Fragments of cylindrical vessels decorated with impressed points forming a continuous line are also typical designs of phases 4 and 5.

The smallest group of pottery in this assemblage is represented by Y-ware, which has a characteristic layer of white liquid clay on its outer surface.

It is possible to divide Y-ware into two technologically dissimilar groups. The first is reminiscent of R2-ware, and has a N I.C1-2 fabric, whilst the second is distinguished by a better prepared ceramic body containing much smaller quantities of mineral and organic temper (N I.B). Characteristic vessel forms for the first of these two groups include: open, shallow bowls with outer rims in the form of lips; small and large globular jars with wide rims, an indistinct division between neck and body, and rounded rims. Vessels made of better quality fabric include medium and large open bowls with outward rounded rims, as well as jars with a narrow mouth, short cylindrical neck and outward rounded edges.

Also characteristic of phases 4 and 5 are fragments of D-ware decorated with so-called “water lines”.

PHASE 6

Some vessel forms typical of the preceding period also occur among the material characteristic of the early Predynastic period (latter half of the First Dynasty and the Second Dynasty). Potsherds adorned with arched motifs, rope band and punctated decoration were also recorded in the younger strata of this phase.

Phase 6 is distinguished by a moderate prevalence of R1-ware over R2-ware. New rough coarse ware vessel forms include bread moulds, which are deeper than earlier examples, their walls flaring outwards at the point where they join the base. Typical rough ware vessels include beer jars with either pointed or rounded bases and distinctive body surface treatment carried out with the use of a brush. The most common type of bowl is the tulip bowl, which has concave walls and rims, which are either straight or slightly thickened on the outside. A few sherds and two complete vessels of this type have a hole made in the base after firing.

The number of vessels covered in red slip is slightly greater in relation to the previous phase. Carinated bowls with burnished surfaces now appear alongside the bowls and jars which were already in use earlier.

Pottery with a hard smoothed surface classified as S-ware does not display any greater diversity than in the previous phase. A variety of potmarks (including geometric patterns of incised lines) and fragments of *serekhs* frequently appear on jars.

The quantity of Y-ware decreases quite significantly in relation to the Protodynastic and early First Dynasty periods. Of all the pottery groups this remains the smallest. A new type of fine ware jar appears in the occupation levels of this phase. These jars have a short neck whose walls are slightly inverted, thus restricting the rim diameter. A growing number of large storage jars is observed among the vessels with coarser temper in their fabric. (AM)

PROTODYNASTIC AND EARLY DYNASTIC POTTERY FROM THE WESTERN KOM (PHASES 4-5)

Thick-walled bread moulds of rough ware – made of Nile clay, tempered with medium-to-coarse sand grains and fine-to-medium chaff or coarse straw – were found in strata belonging to phases 4 and 5. The number of these forms increases from Protodynastic to Early Dynastic times, being definitely more numerous in phase 5. Most of the moulds are spherical with rounded base. Shallow forms, sometimes with flattened base, are also present but in lesser quantity. The rim top is mostly simple and rounded, rarely flattened or concave. A few potmarks, mostly inside the vessels, have been recorded on the walls of these bread moulds.

Dated mostly to phase 4 are tall tapering vessels without the bottom, which was narrow and flattened. Also found were small bowls in this fabric, as well as different bowls with concave walls and simple rim or slightly thickened external extension, and cups with straight sides and simple rim.

Fragments of different types of red slip ware bowls also occur in these two phases. They were generally made of Nile clay, tempered with fine-to-medium sand and sporadically very fine organic material; coarser inclusions are also present occasionally. Most of the bowls are light red, or reddish-brown, coated both inside and out, with burnished surface. Vertically burnished bowls are very characteristic, while horizontal burnishing outside and vertical inside occurs on occasion. In a few examples, also the upper part of the inner surface just below the rim is horizontally burnished, while the lower part is burnished vertically. Fragments of streak-burnished bowls have also been recorded.

Another frequent find from phases 4 and 5 on the Western Kom are fragments of fine hard-smoothed wares made of Nile clay, untempered or with very fine sand inclusions or in a few examples made also of marl clay. The surface of these vessels – mostly jars – is finely hard-smoothed. Marks of a turning device are visible occasionally on the necks of such jars. Potmarks also occur on a few examples. Small fine drop-shaped vessels, complete and fragmentary, were also found.

A few sherds collected from phases 4 and 5 are decorated with punctated decoration. Most fragments of D-ware from the Western Kom, occurring in both phases, are decorated with so-called water lines (wavy parallel lines in short groups). Sherds of W-ware, as well as of so-called wine jars with rope pattern and others with a row of arches on the shoulder were also found, as were pieces of cylindrical jars with impressed or incised decoration beneath the rim.

Pottery of phases 4 and 5 appears to be characteristic of the period of state formation in Egypt. On the grounds of current research, our phase 4 can be dated tentatively to Naqada IIIa2, with the end of this phase falling sometime during Naqada IIIb, and our phase 5 to Naqada IIIb, ending sometime during the First Dynasty, probably at its beginning. (MJ)

APPENDIX B

ARCHAEOZOOLOGICAL RESEARCH

The studied osseous remains included bones of the *Vertebrata* and *Invertebrata* classes. The invertebrates were represented by mollusks (mollusks, snails), while the vertebrates included the following groups: fish (*Pisces*), amphibians (*Amphibia*), birds (*Aves*) and mammals (*Mammalia*).

The analyzed osseous material was preserved in very poor condition, damaged and fragmented. Most of the bones were burnt through or at least on the surface. The process of secondary mineralization, which is the outcome of calcium precipitation, was observed on the external surface of many bones, often making a positive anatomic and species identification impossible. Another frequent observation concerns traces of gnawing by predators. These facts largely limited the data on species, number of animals, their size and gender.

CENTRAL KOM

Interestingly, the animal osseous remains seem to have been concentrated in a single part of the excavated area (squares 65c-d). Of the domestic animals pig remains (*Sus domestica*) are definitely the most numerous. Also represented are cattle remains (*Bos primigenius f. domestica*), goat/sheep (*Ovis aries – Capra hircus*), dog (*Canis familiaris*), cat (*Felis*). To judge from available data, pigs were slaughtered most frequently once the animal had reached an age of 1-2 years. The data for the other domestic species is too fragmentary for similar conclusions to be drawn.

The number of wild animals on the Central Kom reaches almost 21% of all the identified mammals. The identified remains belong to wild boar (*Sus scrofa*), auroch (*Bos primigenius*), antelope (closer identification is impossible as yet), hyena (*Hyaena*), white rhinoceros (*Ceratotherium simum*), hippopotamus (*Hippopotamus amphibius*), fox (*Vulpes vulpes*) and representatives of the line of rodents (*Nesokia indica*). The specific status of the donkey (*Equus africanus*) or onager (*Equus hemionus*) is unclear. It is very difficult to be sure whether the identified donkey remains (11 animals) belong to the domestic or wild variety; sub-species identification (donkey or onager) is also quite difficult. Some metric features of the long bones could point to the domestic donkey, while the teeth indicate the wild donkey or onager. Noteworthy when compared to the other animal species is the number of fragments of hippopotamus tusks, belonging to 7 or 8 animals.

Some of the bones bear traces of working and use. The most interesting include fragments used as awls.

Another interesting find was a concentration of bones found 15-20 cm below the modern surface (square 53d). The identified remains represented at least four dogs and an antelope (?) of large size; two bones belonged to an animal of a species that could not be identified. The poor condition of the bones hinders a reconstruction of the position of the animals at the time of death. It may have been an intentional burial of the dogs accompanied by food.

WESTERN KOM

Pig dominates among the domestic animal remains, second place being taken by cattle, followed by goat/sheep, dog and cat. Here, too, pig was slaughtered at the age of 1-2 years. It should be noted, however, that the quantity of osseous animal remains originating from this area is much smaller than that from the Central Kom.

Remains of wild animals constitute merely 2% of all the identified remains. Represented is the auroch, donkey or onager, hippopotamus and rodents of the *Nesokia indica* line. The shoulder bone of one auroch was found in the wall of a building, where it was used in replacement of a brick, while the bones of the metatarsus and metacarpus were laid out in opposition by the wall. Hippopotamus was identified on the grounds of six fragments of tusks, all originating possibly from the same individual. (RA)

APPENDIX C

ARCHAEOBOTANICAL ANALYSIS

The analysis was carried out on a total of 160 botanical samples ranging in volume from c. 0.5 liters (most often) to c. 20-30 liters. Sieving of all soil samples was carried out on-site using 1.0 and 0.5 mm sieves. Plant material was present in c. 90% of the analyzed samples. All of the plant remains survived in charred form.

Botanical samples were taken from a wide range of archaeological contexts: (1) from storage vessels and rooms (probably storerooms), as well as from the fill of ovens on the Western Kom; (2) from storerooms (possibly a granary/silo), hearths and fills of ovens recorded on the Central Kom; (3) from vessels deposited in burial chambers on the Eastern Kom. Note was made of the location and type of archaeological feature from which each sample was taken.

A rich botanical record survives at this site. Two types of cereal crop predominate among the plant remains: barley (*Hordeum vulgare*) and emmer wheat (*Triticum dicoccum*). The presence of threshing waste among these remains is particularly significant in diagnostic terms. Alongside burnt wheat kernels, fragments of wheat ears have also survived (spikelet forks and husks), allowing the species of wheat cultivated during the late Predynastic and Early Dynastic period to be identified. The species in question is husked emmer wheat (*Triticum dicoccum*), the grains of which are firmly encased in their husks, so that the ears have to be roasted before threshing can begin. The presence of ears and husk fragments indicates that both roasting and husking were carried out on-site at the settlement.

Samples containing large amounts of cereals also included seeds of wild plants (mainly grasses) – weeds growing among the cultivated crops. These weed assemblages help to establish a fuller picture of the flora and vegetation present in areas directly affected by human activity.

Cereals appear alongside several other cultivated plant crops, such as peas (*Pisum sativum*), lentils (*Lens culinaris*), and probably also broad beans (*Vicia faba*). Seed fragments, which are thought to come from broad beans, require more detailed analysis.

The presence in this study material of plant parts, which grow below ground, such as roots and tubers, is significant. These finds require examination using an electron scanning microscope, as their identification is based on the anatomical features of parenchymatic tissue. The morphologically better preserved tuber specimens were provisionally identified as a species of the sedge family, *Cyperus esculentus* (*cibora, chufa*). This species was cultivated in Predynastic and Dynastic Egypt for its edible tubers. Theophrastus (372-287 BC) writes that tubers were also used as flavoring in the production of beer.

The large amount of cereals and other plants cultivated at the Tell el-Farkha site will enable their relative quantities to be calculated, and hence the importance of individual species to be determined for each phase of the settlement's occupation. The wide variety of plant material (the presence of both cereal grains and husks) will make it possible to ascertain the activities (including husking) which took place on site. The accumulation of barley

grains (c. 250 specimens) in a feature on the Central Kom, points to the fact that there was most probably a granary there, which was subsequently destroyed in a fire.

A further interesting aspect of the botanical remains is the presence of barley grains, which had sprouted before they were (accidentally) burned. This process may be linked to the production of beer.

In view of the early date and complexity of the settlement, the site merits comprehensive and detailed archaeobotanical analysis. Tell el-Farkha will enrich our knowledge about the cultivation and use of plants during the formative years of the first Egyptian state, as well as provide new material relating to the history of agriculture in ancient Egypt. (LMK)