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THE FLINT INDUSTRY OF TELL EL-FARKHA IN THE PREDYNASTIC PERIOD – OLD AND NEW PERSPECTIVES

Abstract: *Excavations of Predynastic deposits on the Eastern Kom of Tell el-Farkha have yielded a small, yet revealing assemblage of flint, as well as evidence of an agate workshop. The flint artefacts are mostly similar to those from other sections of the site and are fairly typical of the flint industry in the Nile Delta. The assemblage not only attests to the impressive skills of local knappers, but also furnishes us with information regarding the nature of the site's relations with the rest of northeast Africa, especially Upper Egypt.*

Keywords: *Tell el-Farkha; Predynastic period; flint; workshop*

Tell el-Farkha, located in the eastern Nile Delta in the modern village of Ghazala (about 120km northeast of Cairo), has been excavated since 1998 by the Polish Archaeological Expedition to the eastern Nile Delta under the joint directorship of Professor Krzysztof M. Ciałowicz (Jagiellonian University in Krakow) and Doctor Marek Chłodnicki (Poznań Archaeological Museum).

The site, which dates from Naqada IIB probably all the way through to the 4th Dynasty, consists of three sections: the Western, Central and Eastern Kom (for more details see Chłodnicki *et al*. 2012). The latter is the main focus of this paper. Investigation of the site's flint industry is based on excavations on the Eastern Kom conducted between 2001 and 2010 on deposits from Lower Egyptian culture of the Predynastic period

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(Naqada IID2-IIIA2, 3300-3200 BC). The relatively modest number of flints found (545) can be attributed to the limited nature of research carried out into the period thus far. This is due both to greater resources being devoted to other areas of the excavation and also to high groundwater levels that made work in the Eastern Kom impossible during certain seasons. Notably, richer assemblages have been discovered in later deposits which have been investigated more thoroughly. The Predynastic period settlement is set to be excavated in the future.

A permanent settlement with houses and agricultural structures existed during the Predynastic period on the Eastern Kom of Tell el-Farkha. The earliest (1 and 2) chronological phases are linked to Lower Egyptian culture,[1] but the flint assemblages discovered from these phases contain few whole artefacts. Later, it is possible to observe a new period of Naqadian settlement. In Phase 3, the influence of southern Egypt can be noted.

The assemblage from the Predynastic cultural layer comes from across the whole breadth of the site and neither the structure nor the place of discovery was noted. This cultural layer was explored at an arbitrary level of 0.1m. Unfortunately, not all the sediment was sieved, which could be a reason for the low quantity of flint discovered (particularly small size items like chips or small flakes). The Predynastic assemblage has been kept apart from items discovered in Feature 92 (to be described later on), which was connected with flint work, although archaeologists did not fully investigate it during the excavation. It was only after Feature 92 was discovered that all the sediment of the fill was sieved dry. This could be the reason as to why Feature 92 stone artefacts figure far more frequently than those from the Predynastic cultural level (particularly in the case of small size items).

Of the 545 artefacts found dating to the Predynastic period (Fig. 1), only 29% were excavated from the Predynastic layer of the settlement, with the rest coming from Feature 92. Some of the artefacts may originate from a chronologically different period, however, as they could be in a secondary context as a result of the peculiar nature of the Eastern Kom. Numerous ancient holes dug as graves, as well as various other types of pit, disturbed the homogeneity of the collections amassed from all periods, particularly the Predynastic one. Firstly, the assemblage from the Predynastic settlement layer will be discussed. The Feature 92 assemblage will then come into focus later on in the paper.

[1] On the site, seven chronological phases of settlement have been distinguished (Phases 1-3 relate to the Predynastic period).

	Predynastic Cultural Layer	Feature 92
Debitage	**97**	**381**
Cortical flakes/blades	11	64
Flakes	5	15
Blades	29	11
Cores	3	64
Repaired cores	11	12
Chips, chunks and unidentified fragments	30	170
Raw material	8	45
Tools	**61**	**6**
Endscrapers	1	0
Perforators	0	1
Micro-perforators	0	3
Burins	1	0
Sickle blades	27	0
Blades/flakes with retouch	17	1
Bifacial knives	4	1
Blade/flake knives	8	0
Other tools	3	0
Total	**158**	**387**

Fig. 1. Debitage and tool frequency comparison between the Predynastic cultural layer and Feature 92 on the Eastern Kom of Tell el-Farkha

In the Predynastic settlement layer, debitage was most prominent (61.4% of the assemblage; Fig. 1). The small amount of material discovered from this period does not, however, reflect the technological nature of the Eastern Kom at Tell el-Farkha. When comparing the collection with the neighbouring Central Kom (where the number of flint artefacts is higher), no difference can be observed in their components. The blade technology predominant across the whole site is of a local nature typical of the Predynastic period in the Nile Delta region. Traces of production for local community needs exist on the Eastern Kom, but the main production centre was most probably situated on the Central one.

Two distinct trends can be observed in blade blank production. The first type produced long, slender, straight tools through a soft, direct impact. The average length of such blades ranged from 45 to 75mm and they were no wider than 15mm nor thicker than 5mm. The second type produced

longer, broad, short blades from a single platform blade core. This was typical of Predynastic production in the Nile Delta area. There is, however, no evidence of this second type of blade blank on the Eastern Kom of Tell el-Farkha. The blade blanks are mostly known from retouched blade tools or blade knives. On the basis of these two groups of tools, we can estimate that the blade blank average length ranged from 55 to 65mm, their width from 30 to 35mm and their thickness from 8 to 10mm. They were created by direct impact and the blades were irregular and slightly bent.

An element of debitage was found in the Predynastic cultural layer of the Eastern Kom which connects the site with the preparation and initial processing of cores (Fig. 2: 19). Treatment of the cores was not, however, confined to a strict manufacturing pattern. The knappers did not know any effective way of manipulating the raw material and it is therefore impossible to observe any evidence of repair being carried out on the debitage. Damaged fragments of cores or blanks were instead left abandoned, indicating that workers did not attempt to either use or repair them.

Tools comprise the other 38.6% of the assemblage discovered. In certain cases, individual artefacts from the Predynastic layer seem to have appeared in a secondary context. This is clearly the case with the sickle blades, which were not produced before Naqada IID2 in the Nile Delta (Schmidt 1992, 35).[2] The most frequently occurring tool type is that of retouched blades. Some (for instance blade knives with retouched edges) have a typical broad, short, single platform core blade (Fig. 3: 8). Others have slimmer blades, one example of this being an obsidian tool (Fig. 3: 7). This was the only artefact created from this material to be discovered on the Eastern Kom. Obsidian is very rare in and around the Tell el-Farkha site, but it occurs most frequently on the Central Kom. Unfortunately, the obsidian blade discovered on the Eastern Kom of Tell el-Farkha comes from an unknown outcrop. This artefact could therefore have perhaps been brought to the site as an already finished tool.

The remainder of the tools is largely made up of different types of knives. Four bifacial knives feature here, as well as a small curved knife with a polished surface, characteristic of the late Gerzean period of Upper Egypt (Fig. 4: 4). The presence of this knife could be explained by the population growth of the site, as it could have been part of a set

[2] The sickle blades numbered 27 and their presence in the Predynastic cultural layer confirms that considerable disturbance occurred in part of the ceiling layer. Similar assemblages of tools and elements of debitage (without distinctive features) are impossible to distinguish from those found in a secondary context.

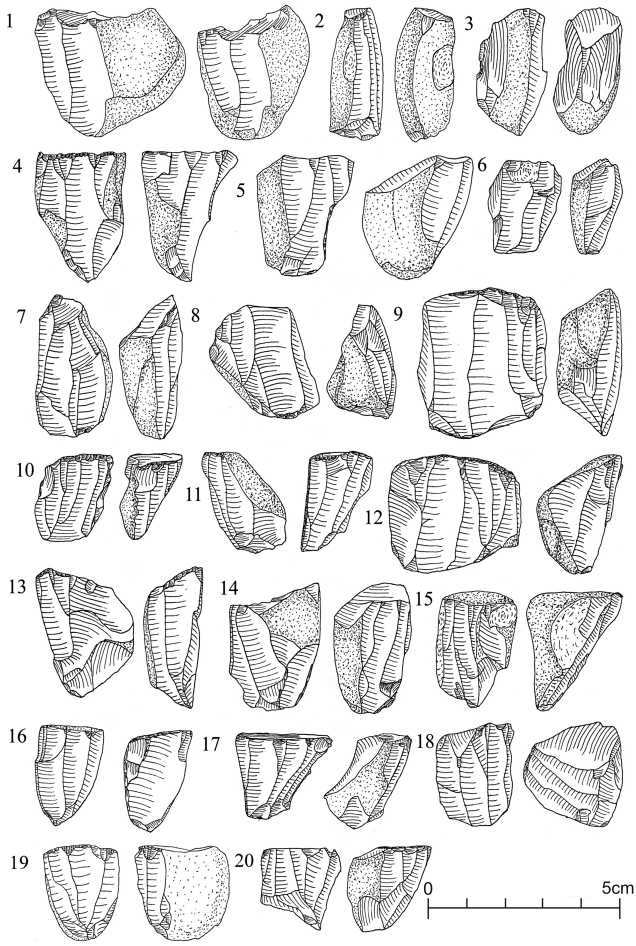

Fig. 2. Tell el-Farkha. Cores from the Predynastic period.
Drawings by J. Kabaciński (1-18, 20) and the author (19)

of goods brought in from Upper Egypt (the finished bifacial knives and obsidian tools could also have come from here). The curved knife must have been brought to the Eastern Kom from a workshop located elsewhere, since there is no evidence at Tell el-Farkha of either the development of bifacial surface treatment techniques or the polishing of surfaces during the Predynastic period. This was probably also the case with another knife (Fig. 4: 5). It may have had a round, slightly expanded end (the knife is broken, so it is hard to speculate about its original shape), but its surface traces indicating it possessed a similar kind of holder.[3] The knife is crushed

[3] In the picture (Fig. 4: 5), probable traces of the holder are indicated by little black spots.

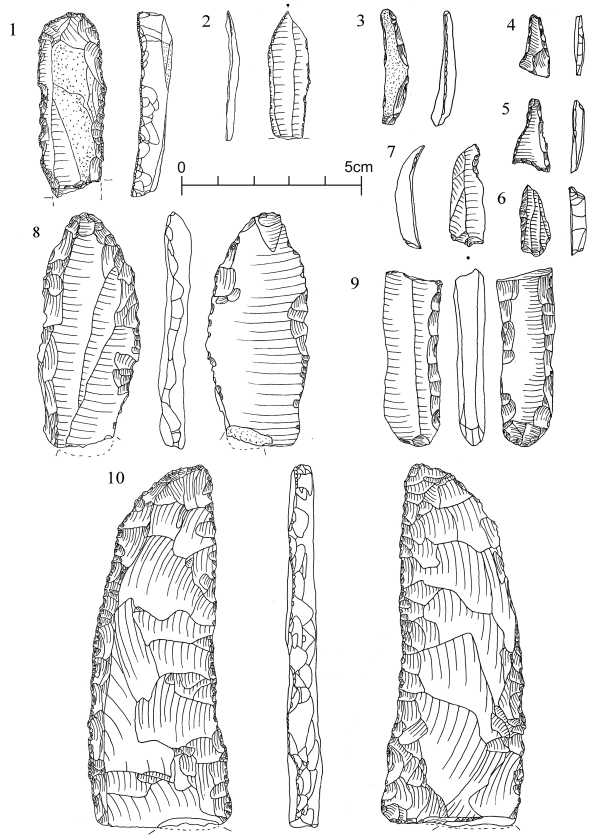

Fig. 3. Tell el-Farkha. Tools from the Predynastic period.
1 – Endscraper. Drawing by the author; 2 – Burin. Drawing by the author; 3 – Perforator. Drawing by J. Kabaciński; 4-6 – Micro-perforators. Drawings by J. Kabaciński; 7 – Obsidian retouched blade. Drawing by the author; 8-9 – Retouched blades. Drawings by J. Kabaciński; (8) and the author; (9) 10 – Bifacial knife. Drawing by the author

on a side edge (probably the result of use), but its function remains unknown. Other kinds of carefully made knives (Fig. 3: 10) were probably also brought in during the final stage of human habitation of the Naqadian settlement.

The most characteristic tools of the Predynastic period were blade knives with retouched edges called Hemmamija A knives and they were most frequently discovered in the Central Kom of the site.[4] Knives with

[4] The Hemmamija A knife term was used by K. Schmidt (1992; 1996) (a different type of knife – Hemmamija B – does not occur at Tell el-Farkha) (van den Brink *et al*. 1989). D. Holmes (1989) named the same type of tool 'blade knives'. This knife is also similar to 'Gerzean knife blades' from Naqada II described by E. Baumgartel (1960). These knives are made of single platform blade core blanks and their characteristic feature is a straight

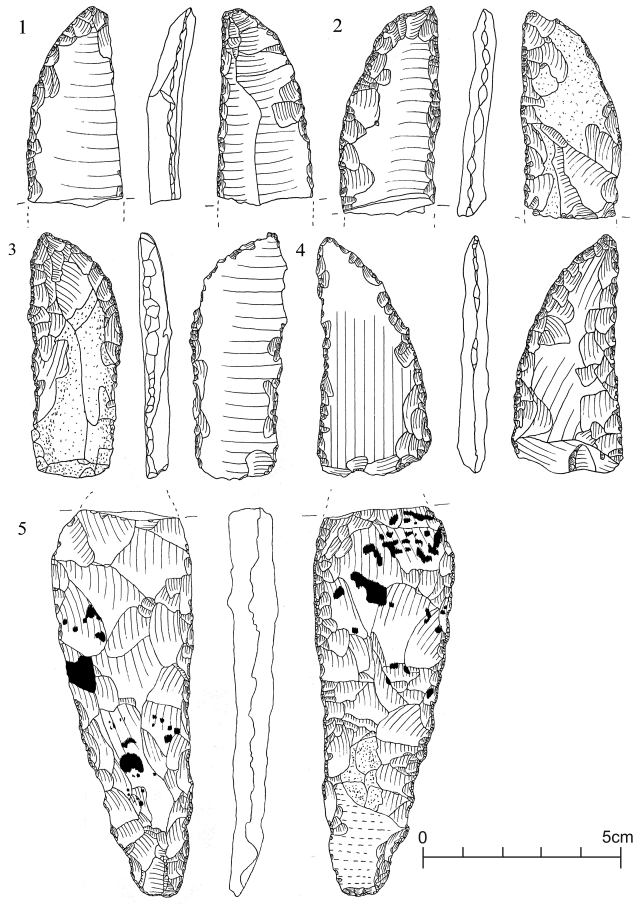

Fig. 4. Tell el-Farkha. Tools from the Predynastic period. 1-3 – Hemmamija A knives. Drawings by the author; 4-5 – Bifacial knives. Drawings by the author

wide blade blanks existed in the earliest phases of the settlement at Tell el-Farkha and these were either local imitations of Naqadian blade knives (Kabaciński 2003, 201) or the more standardised Hemmamija A knives (van den Brink *et al.* 1989; Schmidt 1992; Schmidt 1996). These knives were made with broad, short blade blanks with a characteristic retouching on the bottom side or on both sides alternately (Fig. 4: 1-3). Only two Hemmamija A knives were found in their primary context in the Predynastic

back which passes the upward pointing tip. Their surface has a regular retouch flake on the left edge (the edge passing the arched top in a straight line). The right edge is retouched from the bottom side. Various types of retouching may be incorporated, but it is always on the same side. In certain cases, they possess small separate handles, rendering a retouch from the bottom side possible.

layer of the Eastern Kom, with the other four being excavated from a secondary context in the Protodynastic layer.

Hemmamija A knives are quite commonly found at Nile Delta sites of the Predynastic period. For example, they occur at Tell el-Iswid (South), where 15 kinds of heavily standardised knife made with a wide blade were found. Fragments of a cortex on their surface were also preserved, one of the characteristic features of this kind of knife. They also appear at Tell el-Fara'in/Buto (level II), where they were used for a fairly short period (Schmidt 1992, 32). It is probable that single Hemmamija A knives were also present at the burial site of Minshat Abu Omar (Kroeper and Wildung 1994; Kroeper and Wildung 2000). Knives of this type are heavily linked to the Upper Egypt area. The knives discovered at Tell el-Fara'in /Buto were not entirely standardized.

A blade endscraper (Fig. 3: 1) and blade burin (Fig. 3: 2) also featured among the tools discovered.

During excavation, archaeologists paid much attention to Feature 92, a pit filled with brown soil and silt. Within this feature, twice as many flints and other stone artefacts were found than in the whole Predynastic cultural layer of the Eastern Kom settlement. Pit 92 was probably in the shape of a crescent.[5] When it was discovered, the pit had an irregular shape with a diameter of about 0.5m and a thickness of 0.1m (Chłodnicki *et al*. 2006, 91). The Feature 92 assemblage consists of 387 artefacts, mostly made up of flint and agate debitage elements (Fig. 2).

The large number of cores is clearly evident in the debitage assemblage of Feature 92 (Fig. 2: 1-18, 20), with most being single platform blade cores. The cores number is 67 in total and they were all produced in a very similar fashion. They are very small (thus suited to the production of irregular blades) and were often made of small flint pebbles. The core was formed using a single side impact to create a striking platform (flat and rarely cortical). Flint workers did not use any kind of treatment to prepare the edges of the flaked surfaces and most of the cores had a cortical back and cortical or splinter sides. The angle of impact ranged from 60 to 90 degrees, particularly in the case of small, single platform cores. The negative aspect of using flaked surfaces is demonstrated by the irregular shape of the blades. Flint workers used soft impact (also indirect impact) techniques.

[5] During the excavation, archaeologists only discovered the edge of Feature 92. It was assumed that the feature was actually bigger and that the size of the entire pit could be up to 1.5m in width (similar to a feature on the Central Kom of Tell el-Farkha).

The second largest group of debitage is represented by cortical blanks. The large number of cores and blanks from the early stages of core preparation indicate that specialist production occurred at the workshop. The chips, chunks, and unidentified fragments of this debitage form a very interesting group of artefacts, since the majority of them are made of agate. A significant group within the assemblage consists of raw agate pebbles (n – 32), which characteristically had one single impact on their surface.

Feature 92 only yielded six tools, three of them being micro-perforators. Only three micro-perforators were discovered on the Eastern Kom from the Predynastic period in total, but on the Central Kom they were very common. On comparing these with other examples from the whole Tell el-Farkha site, a high level of standardisation of this type of tool can be observed. One tool (Fig. 3: 5) had traces of usage at the edges,[6] but the others did not appear to have been used at all (Fig. 3: 4, 6). These artefacts were assumed to have been prepared for alternative usage, a hypothesis proven by macroscopic observation. They would have performed a very specialist function connected to the production of beads from different stone material. Micro-perforators like those from Tell el-Farkha were common in the Neolithic period and were also prevalent during the Predynastic period in Egypt (Holmes 1992; Hikade 2004). The presence of micro-perforators in assemblages from the Predynastic period has been attested at other Nile Delta sites, but they are only relatively numerous at Tell el-Farkha. A large number were discovered in the Predynastic layer of the Central Kom, where a series of specialist workshops with micro-perforators was encountered (Chłodnicki *et al*. 2006, 85). During the Predynastic period, Tell el-Farkha could therefore have been a kind of bead manufacturing centre that produced ornaments not only for its own usage, but also for that of neighbouring settlements.

A large number of agate ornaments (especially beads) have been discovered in the vicinity of the site. The workshops of Tell el-Farkha were of a specialist nature and a significant number of these beads could have been produced at the site.

A series of sandstone plates and hammers were found in one workshop.[7] The plates could have been used during the final stages of bead and

[6] This is only clear from macroscopic observation. The micro-perforators did not undergo microwear analysis at the Tell el-Farkha site.

[7] The sandstone plates and stone (non-flint) hammers are not part of my study. They are mentioned in this article due to the significant role they play in Feature 92. The stone artefacts will be examined by Dr. M. Jórdeczka.

ornament shaping and also in connection with other objects, for example in the polishing of the surface of bifacial knives.[8] Two quartz hammers made with great thoroughness must have constituted a highly important element of the workshop's equipment (Chłodnicki *et al*. 2006, 91, fig. 13, pl. XV: 2).

Micro-perforators were only present at sites in Upper Egypt in the Predynastic period, for example in Hierakonpolis (Holmes 1992; Hikade 2004). In fact, micro-perforators made up almost 34% of the tool inventory here (Holmes 1992, 43). One feature of the site was a specialist workshop, where D. Holmes (1992) singled out 33 types of this type of tool. In addition, a large amount of debitage and many finished bead products were found (Hikade 2004). A huge number of beads were produced in this workshop, most probably enough to also meet the needs of its surrounding areas. Similar workshops from the Predynastic period were found at Abydos, where more than 300 examples of micro-perforators, as well as raw material and debitage fragments of agate and carnelian were excavated (Peet 1914, 3-4, pl. IIa). Within the area of the Nile Delta, Tell el-Farkha is the only site where bead making workshops have been found. The Eastern and Central Kom both possessed small, single-person workshops grouped in clusters within the same settlement.

In Feature 92, one perforator (Fig. 3: 3) with a slim blade was discovered. Perforators were not standardised tools in the Predynastic period, as their appearance depended on the kind of blank and raw material used, as well as the skills of the flint worker in question.

The final two artefacts from Feature 92 are a retouched blade (retouched across the whole surface with a slim blade typical of the period; Fig. 3: 9), and a bifacial thin knife (with a flat-convex cross section; Fig. 5). The knife is also typical of the period. The central section and top of the knife bear traces of usage (macroscopic observation rather than microwear analysis was used). The function performed by both the retouched blade and the bifacial knife is, however, unknown.

Feature 92 possessed mainly flint and agate elements of debitage. These were largely small single platform cores that would have come from the initial stage of the preparation of cores (mostly cortical flakes), chips and chunks. The large amount of raw material in the form of pebbles (especially agate pebbles) is also of considerable interest. Feature 92 could therefore be

[8] We could not, however, observe any other evidence of this practice from the period (although we consider it possible). The first flakes from bifacial production or modification at this site come from the Protodynastic period.

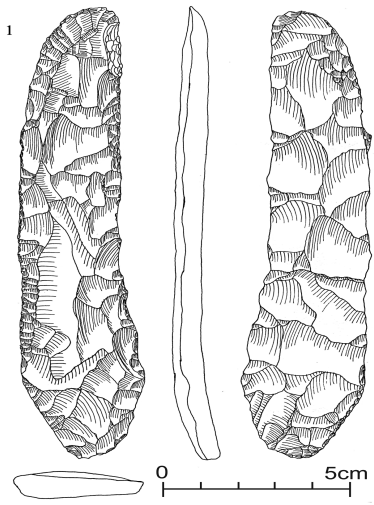

Fig. 5. Tell el-Farkha. Bifacial knife from the Predynastic period. Drawing by J. Kabaciński

the waste pit of a specialist flint workshop. The fill has not been entirely investigated, as its exact shape and the filling procedure followed is unknown. For this reason, it is impossible to define the feature as simply the depository pit of a specialised workshop, as knappers may have also worked at the site. It is, however, certain that agate beads were made here. Over 30% of the artefacts of Feature 92's assemblage were agate blanks (mainly chips, chunks, and raw material with marks indicating knapping) and it is therefore likely that agate knapping materials were of great importance in the workshop. Specialist tools such as micro-perforators (closely related to the production of beads) were also found here.

The localised nature of Predynastic flint industry production can be observed on the Eastern Kom of Tell el-Farkha. Its tool inventory indicates similar patterns and technological features to those of analogous flint assemblages in both other parts of Tell el-Farkha and at other Nile Delta sites. The influence of Upper Egypt is also clearly visible in the new types of tool, the import of knives and raw material (especially obsidian) and the fine quality flint. Feature 92 on the Eastern Kom and analogous features on the Central Kom of Tell el-Farkha permit us to postulate that these sites may have been agate bead production centres in the Predynastic period. No similar workshop exists in the Lower Egypt area from this period and micro-perforators have also not been discovered elsewhere in such quantity. Only one specialist agate workshop was found on the Eastern Kom with a rather poor assemblage dating to the Predynastic period. Future research will, however, grant us the possibility to verify our hypotheses on the spatial organization of the settlement on the Eastern Kom of Tell el-Farkha and allow us to compare it to the settlement found on the Central one.

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