

# Ancestral funerary knives: why did flint knives enter the funerary realm?

## Abstract

The tradition of using stone tools as grave goods is believed to have originated in the Paleolithic period. However, due to limited evidence of earlier burials, this practice becomes more apparent primarily from the Neolithic period onwards. During this time, various types of stone tools began transitioning from domestic to non-domestic contexts. Among these, flint knives stand out as a distinct class, with their presence in funerary context emerging as early as the Neolithic in Egypt, predating the luxurious forms characteristic to the Predynastic period. This paper explores the earliest stages in the transition of flint knives from domestic to non-domestic contexts, analyzing the ancestral types found in both contexts and investigating the early processes that imbued these tools with symbolic significance.

**Keywords:** domestic knives, multi-functional tools, grave goods, prehistoric Egypt, funerary knives.

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## Introduction

Numerous lithic assemblages have been unearthed from various sites across the Egyptian deserts and the Nile Valley, following the discovery of several campsites and early villages during the large-scale excavations of the late 19th and early 20th centuries.<sup>1-3</sup> These findings brought lithic tools into greater prominence, allowing researchers to infer various aspects of the life and ideology of prehistoric communities in Egypt and beyond. These assemblages were a matter of various technical investigations that contributed to broadening our knowledge about diverse aspects such as raw material procurement, production techniques, and regional variations, as well as socioeconomic aspects like the development of trade routes, the emergence of craft specialization, and the division of labor.<sup>4-6</sup>

The rapid evolution of lithic industries was mainly driven by the adaptive strategies of Egypt's earliest inhabitants in response to the fluctuating environmental and climatic conditions during the terminal Pleistocene and early Holocene.<sup>7-9</sup> These changing conditions set the stage for significant socioeconomic transformations. Tools that were once multifunctional evolved into a diverse array of specialized instruments tailored to specific daily activities. This evolution became particularly pronounced after the introduction of farming and the shift towards a more settled lifestyle between 8000 and 6000 BC. Hence, the development of flake and blade-based industries from the Middle Paleolithic to the Neolithic allowed for the reproduction of earlier multifunctional tools in new, specialized forms. As a result, a variety of tools, such as scrapers, cutting implements, butchery tools, harvesting tools, and hunting instruments, were crafted from both blades and flakes.<sup>10</sup>

Connecting stone tools to specific functions has traditionally been approached by excavators and researchers using various methods. These include examining the co-occurrence of tools within certain features or alongside other tools and objects, drawing analogies with modern tools, conducting ethno archaeological studies, and, more precisely, performing residue and use-wear analyses when possible.<sup>11,12</sup> However, it is generally believed that the same type of tool was often used for multiple functions, especially among hunter-gatherer and pastoralist groups who adopted a mobile or

semi-sedentary lifestyle.<sup>13</sup> Additionally, the terminology applied to the same tool can vary depending on the excavator's perception or the context of the discovery. For example, the term "knife" may be used by different excavators to describe various flake and blade tools, making the identification of knives within the archaeological record particularly challenging, especially during the Paleolithic and early Neolithic periods before the emergence of flint knives with more standardized shapes. The physical evidence of flint knives from the Paleolithic period is not well-documented. Traditional knives are notably absent from the archaeological sites of this era, despite schematic representations of flint knives appearing in few scenes depicted in Paleolithic rock art. It is widely believed that other tool types were likely used for similar functions and purposes. During this period, multifunctional tools, such as hand axes, probably served as precursors to various tool types, including knives. Some researchers have discussed the use of Acheulean hand axes as butchery tools. This hypothesis is supported by diverse experimental studies and use-wear analysis conducted on specific collections of hand axes.<sup>14</sup>

Machin et al study demonstrates that various edges of the hand axe were used at different times and for different purposes. This concept has been supported by other researchers i.e. Chavaillon who noted that "*the handaxe could be used as a knife or scraper, depending on its shape, size, and volume, and whether it was handheld or hafted, which requires axial symmetry; it could be used both as a tool and as a weapon*". Chavaillon also described a tool from Middle Paleolithic assemblages as a "handaxe-knife," but the accompanying photograph did not match the appearance of traditional hand axes. Consequently, the term "handaxe-knife" is not adopted here, although the practice of employing hand axes as knives is acknowledged. These studies highlight the complex nature of Paleolithic tools, challenging the traditional view that hand axes reflect low creativity among early humans. Lower Paleolithic societies across different regions used a diverse array of tools, ranging from 2 cm flakes to large multifunctional hand axes, to achieve various objectives. Even the same tool, particularly hand axes, was often used for multiple purposes. Gero distinguishes between two main types of tools.<sup>15</sup> The first group includes tools that are referred to as tools by archaeologists which comprise objects whose shapes are standardized and can be

grouped under certain categories known to archaeologists. The second group comprises the category referred to as “un-retouched flakes or *debitage*”, which include objects that do not carry clear signs of use nor are they of standardized shape. This also means that the group of objects that archaeologists classify as tools is highly limited when compared to the rest of objects.

Conversely, use-wear studies have significantly enhanced our comprehension of the potential roles of by-products or possibly intentionally crafted tools, such as flakes, in the butchery process during the Lower Paleolithic in the Levant.<sup>16</sup> These studies indicate that flakes were employed at specific stages of butchery and animal processing. Lemorini et al proposed that small flakes and blades functioned as knives, based on their findings at Qesem Cave.<sup>17</sup> Their research, which combined use-wear analysis with experimental studies, revealed that small blade knives and flakes, often derived from recycled tools, were used throughout the butchery process. In contrast, archaeological evidence suggests that these blades were not recycled, unlike the small flakes, which were reduced from “parent flakes,” highlighting a selective use of tools for specific tasks.<sup>17</sup> Additionally, Chavaillon posited that some early knives were created from waste associated with the production of choppers at sites like Hadar Cave, dating back over two million years. He observed that, concerning Oldowan tools, “The crude flake, without any prior retouching, must have been used as a knife”. Hence, Chavaillon proposed that the first knives were probably created unintentionally through the reduction of flake tools.

Recent fieldwork at the Lower Paleolithic site of El Pino in Spain, as detailed by Dominguez has deepened our understanding of the functions of other multifunctional tools like flakes.<sup>18</sup> Residue and use-wear analysis on cortical and non-cortical flakes of various sizes showed that large cortical flakes were employed for processing heavy materials such as bone and antler, while small and medium cortical flakes were used for working softer materials like meat. The presence of cortex likely provided a better grip on the tools. The study suggests that quartzite pebbles were utilized to create knives from both cortical retouched and un-retouched flakes. Use-wear analysis also reveals that many Middle Paleolithic scrapers in Europe were utilized as knives and occasionally hafted, while Mousterian bifaces, including points, are thought to have served as spearheads and knives during the Upper Paleolithic in Central and Eastern Europe.

On the other hand, the emergence and development of the blade industry have significantly influenced the evolution of traditional knives. Prismatic blade technology has deep historical roots, with Derevianko tracing its origins to Northeast Africa during the Late Acheulean period. The spread of this technology into various Eurasian regions is thought to have occurred alongside the migration of modern humans (*Homo sapiens, sapiens*) out of Africa via the Nile corridor.<sup>19</sup> However, the industry gained prominence after the Middle Paleolithic period, with blade and bladelet production reaching its zenith during the Terminal Pleistocene/Upper-Late Paleolithic in Egypt and North Africa. The development of the blade industry was pivotal in advancing the production of a diverse array of flint tools used for processing both organic and inorganic materials.<sup>20,21</sup>

Sites such as Nazlet Khater 4, Taramsa 1, Umm el-Okhbain in Bahariya Oasis, and Abydos provide significant evidence of the early development phases of the blade industry from the Upper Paleolithic and Epipaleolithic periods in Egypt. The range of tools produced from blades includes end scrapers, burins, adzes, sickles, and knives. Technological aspects of the blade industry have been explored in

various research studies,<sup>22</sup> while the impact of the evolution of various retouch methods like the usefulness of the invention of abrupt, flat, or micro retouch for the production of sharp edges is less discussed. Further, few research works referred to the early emergence of significant retouch methods i.e. the pressure flaking, during the Paleolithic period, with examples recorded from middle Stone Age context and applied on bifacial flint points uncovered inside caves and rock shelters at south Africa.<sup>23, 24</sup> This technique was largely applied on the later funerary knives to produce sophisticated shapes, although the knowledge about using it emerged earlier, which might also refer to the selective use of techniques while producing domestic and non-domestic tools. However, the contribution of the flake and blade industries to the emergence and development of certain tool classes, particularly domestic and non-domestic knives still requires prominent efforts to be reconstructed.

Despite the wealth of published research on blades from domestic contexts, the study of blades from funerary contexts in Prehistoric Egypt is markedly different. This disparity is primarily due to the limited evidence of burials predating the Neolithic period in Egypt. Discussions on the funerary roles of blades, which may have also functioned as early knives, are mostly confined to non-Egyptian contexts, particularly from European sites such as those in Spain and Bulgaria. These studies offer valuable insights into the use of blades across different contexts. For example, approximately 50% of the blades from the Neolithic cemetery of Can Gambus-1 in Spain exhibited signs of use, as revealed through residue analysis. The findings suggest that these blades were employed in daily activities before being placed in burials. Moreover, it appears that blades were primarily used for processing soft materials, with some being hafted and others serving multiple purposes, which might refer to their use as cutting tools or knives. Conversely, some blades seem to have been produced specifically for funerary purposes.

Additional insights into blades as grave goods were provided by Puchol et al through their study of blades uncovered from the cave burials at Pastora in eastern Spain, dating to the Late Neolithic/Chalcolithic period. The technological, functional, and use-wear analysis of approximately 61 blades revealed that most were not used before being placed in the burials. The site is notably rich in grave goods, including blades, points, pottery, and ornaments, with clear evidence of social stratification and secondary burials due to the increasing number of interments.<sup>25</sup> Macro- and micro-wear analysis on over 60 blades from the burials yielded intriguing results regarding their actual use. The investigation showed that larger and complete blades were unused before being deposited as grave goods, suggesting that these blades were likely imported rather than locally produced. In contrast, the fragmented blades exhibited signs of use, including plant cutting, bone and hide scraping, and retouching. However, not using the larger blades before their deposition might also reflect the production of better varieties for funerary purposes, which is somehow similar to the earliest evidence of the funerary use of flint knives in Neolithic Egypt.

Despite the growing interest in studying lithic assemblages from sites along the Nile Valley and in the Egyptian deserts, there remains a lack of focused research on the role of multi-functional tools within the Egyptian context compared to the investigated non-Egyptian cases.<sup>26</sup> This discussion suggests that early knives were likely more diverse in their shapes, and many tools typically classified as points, flakes, scrapers, and retouched blades were probably used as knives. Ongoing discussions, supported by evidence from sites in Asia,

Europe, and America, may therefore reinforce the hypothesis that many early tools in Paleolithic assemblages in Egypt served as knives or multi-functional tools. Additionally, this argument strengthens the assumption that the earliest forms of knives likely imitated other known tools, such as leaf-shaped points and side scrapers. While cortical blades and flakes have been documented in Paleolithic contexts in Egypt, their use as knives has not yet been confirmed. This is although cortical flakes were shaped into knives during the Neolithic period in Egypt. Harvesting knives, or “proto-sickles,” were known in Egypt before the Neolithic period, coexisting with grinding stones and linked to cereal exploitation between 15,000 BC and 12,000 BC in Nubia and Upper Egypt. In this context, hafted sickles are also considered harvesting knives or general cutting tools. However, the comprehensive study of cutting tools and knife-like implements from the Paleolithic era remains an underexplored area of research.

On the other hand, evidence from the Middle/Upper Paleolithic burial at Nazlet Khater suggests that flint axes, possibly used as the earliest types of lithic grave goods (LGG), may reflect emerging beliefs associated with multi-functional tools. However, the limited evidence of burial and the rare use of grave goods at this time was likely due to the mobile lifestyle of these early inhabitants rather than a lack of specific beliefs. Flakes and blades that may have served multiple purposes, including cutting, scraping, defleshing, and processing soft materials, require thorough investigation using advanced techniques to better understand the ancestral forms of knives. Flakes and blades were also the earliest flints to enter the funerary realm. Although their use as grave goods was still limited during the Neolithic in Egypt, but it remains as an evidence for the earliest movement of flints from domestic to non-domestic contexts, and some of these tools might have served as cutting tools or knives too. However, with the lack of proper analysis and the limited recorded evidence, this cannot be confirmed. Currently, hand axes and some produced blades and flakes are regarded as precursors to later cutting tools. However, accurately identifying early knives necessitates applying residue and use-wear analysis to lithic assemblages. This approach would provide precise data, similar to the insights gained from non-Egyptian contexts.

## Neolithic knives

Semi-sedentary and sedentary settlements began to expand in Lower and Upper Egypt during the Neolithic period, particularly at sites like Merimde, Fayum, El Omari, and Badari. By the 6th millennium BC, these sites displayed early indicators of Neolithic life, characterized by a subsistence economy that relied on farming, hunting, and cattle herding.<sup>27</sup> Sedentism became a necessity rather than an option, providing advantages but also introducing new challenges for early inhabitants. Dwellings were mainly constructed from organic materials, which, upon decay, left behind postholes, hearths, and storage areas as the primary surviving features. Most Neolithic sites included both domestic structures and burials mostly dug in abandoned settlement areas, though the latter were typically simple, shallow graves often accompanied by basic grave goods. The advent of domestication coincided with advancements in tool production, leading to technological innovations within the Neolithic toolkit, and the emergence of prominent classes e.g. sickles and traditional knives (Figure 1).

Evidence of flint knives from the Neolithic period is primarily derived from domestic contexts, with notable examples from sites such as Gebel Ramlah, Merimde Beni-Salama (e.g. JE.63172) El Omari (Figure 2), Fayum (Figure 1), and the Neolithic contexts in

Badari, Mostagedda, and Matmar (Figure 2b),<sup>28–30</sup> During this period, knives were predominantly functional, often found as surface finds or in deposits of cached flints within or near settlement features such as hearths, postholes, and storage areas. In some cases, rarely complete and mostly partial knives were discovered as part of middens. Additionally, “knife-like blades” have been identified among the lithic assemblages of the final Neolithic settlement at Gebel Ramlah, particularly at site E-16-02.<sup>31</sup>



Figure 1 Neolithic knives from Fayum.<sup>22</sup>

The evidence from Fayum is considered one of the most significant in Prehistoric Egypt, offering critical insights into the earliest farming communities in the region, potentially even predating those at Merimde Beni Salama. The site provides a rich understanding of the diverse cultural, social, and economic aspects embedded within its material culture, particularly evident in the stone tool assemblage. The stone tool assemblage from the Neolithic site of Fayum has been extensively studied by numerous scholars, beginning with Thompson and Gardner, who provided early insights into the nature of the Fayum collection in their initial publication. This work laid the foundation for establishing the typology of flint tools from Fayum and has been revisited and discussed in subsequent publications, continuing into recent years (Figure 2).<sup>32–34</sup>

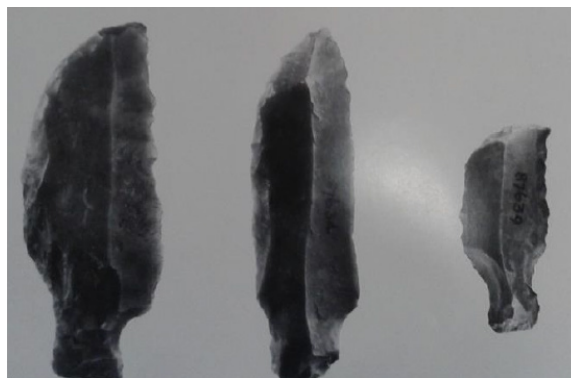


Figure 2 Handled knives from El Omari neolithic settlement.

Thompson and Gardner documented the results of their field seasons, which took place between 1924 and 1928. The lithic assemblage of the Fayum industry was primarily collected from various shore levels of the ancient lake, corresponding to the shifting settlement levels throughout the prehistoric period, including the Terminal Pleistocene and Early Holocene epochs, with a notable gap during the Upper Paleolithic period. Additionally, some objects were

collected from surface deposits. The so called Z. basin and Kom W are the first areas where the Neolithic assemblages were confirmed through their in-situ context. This is contrary to most of the finds that were collected as surface finds by her and by other researchers e.g. Seton Karr. Serrated blades, knives, arrowheads, and pressure-flaked tools were all recognized by her in this area in association with objects related to farming activities. Thompson was able to compare those objects with the ones she encountered in Badari through the weeks that preceded her work in Fayum. In addition, sites H and G to the west of Dimai were recognized as Neolithic localities but not investigated by her since they are located out of her concession (Figure 3).



**Figure 3** Two rough knives: left. Flint knife EXC.3500 Mostagadda-right: flint knife SR.52913 from area 3400, Mostagadda, currently housed at Cairo Egyptian museum.

The types of flint tools recorded by Thompson in Fayum, were refined and reduced to 28 types following the typology of Seton Karr, whose work was mainly based on surface collection. The types include axes, adzes, gouges, planes, knife blades, daggers and spearheads, halberds, chisels, ground points, arrowheads, sickle blades, leaf-shaped points, pebble-butted points, pebble-backed knives and scrapers, side blow flakes, celtiforms, scrapers, backed blades, trihedral rods, tanged arrowheads, leaf-shaped arrow-heads as well as beveled bone points and harpoons. Among the various tools, pebble-backed knives were notable in the Fayum Neolithic context, which are also known from the Neolithic context at Merimde Beni Salama. Thompson provided more detailed descriptions of the flint knives recorded in the Fayum, describing them primarily within two subcategories: “knife blades” and “daggers”. Under the broader category referred to as “knife blades,” several sub-types of knives were identified, each briefly described and accompanied by photos or drawings in the plates. These sub-types include:

Knives on thin white-crust tabular cherts retaining part of the cortex.

Long, narrow forms with a slight curve at the tip.

Long types that broaden towards the tip.

Unilaterally or bilaterally notched forms.

Partially ground knives.

Within the category of daggers, the following types were identified:

Long daggers

Bilaterally notched daggers.

Shouldered points.

The types of knives illustrated in (Figure 1), are associated with the Neolithic context in the Fayum settlement. However, due to the lack of detailed drawings and descriptions regarding production techniques, retouch type, level of exhaustion, and accurate context, it become challenging to trace the link between these types and most of their successors. Despite this limitation, some types can be identified

through photographs and compared with well-known examples from both domestic and non-domestic contexts. At the Neolithic settlement of El Omari in Lower Egypt, both Neolithic and earlier Paleolithic flints were discovered within the remains of the settlement. The presence of Paleolithic artifacts was interpreted as a result of reusing older objects, a phenomenon also observed at other sites, including Badarian sites, Naqada, and the Dakhla Oasis. Handled knives-both complete and fragmentary-made on blades were found alongside bifacial sickles, arrowheads, and scrapers. These handled knives, crafted from reddish-brown and grey flint, were documented in areas A, BI, and BIII. The excavators proposed that these handled knives were produced elsewhere. This observation was not made for the rest of the tool kit, which suggests that the blades used as preforms for these knives may have been produced outside the site, with the knives being finished on-site. The absence of production waste, such as cores and *debitage* of the same flint color, supports this idea. Alternatively, this could indicate a certain level of specialized production occurring in the site or in nearby areas. Most of the knives from El Omari were uncovered from a black layer, as noted by the excavator. The site yielded a total of 22 complete knives, 12 handles, and two blade fragments. These knives displayed evidence of use, particularly on the mesial part of the blade. It is suggested that these handled knives were employed for more specialized tasks, while other flake tools might have been used primarily for cutting meat. It is worth mentioning that in the context of El Omari, knives with handles or small tangs and square or pointed tips were classified as “handled knives”. In contrast, similar types with pointed tips were referred to as “shouldered points” and categorized as “daggers” by Thompson from Fayum Neolithic settlement. However, observing the photos of both types refers to the use of different production techniques while producing these types, with the latter being bifacially-flaked similar to traditional points. Hence, “shouldered points” might have originally used as points or rather produced to be used as knives with emphasis on the production of sharp lateral edge(s) to be used as dagger-like implements. In the latter case, “shouldered points” might be perceived as an early form of knives that imitated other earlier tool types, which is a common aspect linked to the earliest stages of the emergence of traditional knives.

Varios flint tools have been recorded from various locations in Mostagadda, including areas designated as “Tasian and Badarian villages.” These terms refer to distinct sections and regions, often encompassing residential burials. The dual terminology of “Tasian and Badarian” can complicate the differentiation between Neolithic and Early Predynastic features and finds. However, by comparing the characteristics, shapes, and descriptions of these tools across different publications, it is possible to identify and distinguish the Neolithic artifacts more clearly. Domestic flint knives have been documented at various areas classified under the broad categories of “Tasian and Badarian.” In addition, flint knives were uncovered in the so-called “Wady caves” a series of caves explored by Mr. Mayers. Noteworthy examples include Cave C and Cave 3C at Mostagadda, where flint knives from the Late Neolithic to Early Predynastic periods were discovered. These knives were found alongside a diverse array of artifacts, representing a long chronological span that extends into the Greco-Roman period. It should be noted that some of the knives mentioned as part of the flint assemblages from settlement areas were likely crafted from small, irregular flakes or designed to mimic the shape of sickles, often referred to as “saw-edged knives.” However, based on the photographs, it is difficult to determine whether these artifacts are truly knives. Additionally, many of the described villages areas appear to have been repurposed as burial grounds after certain

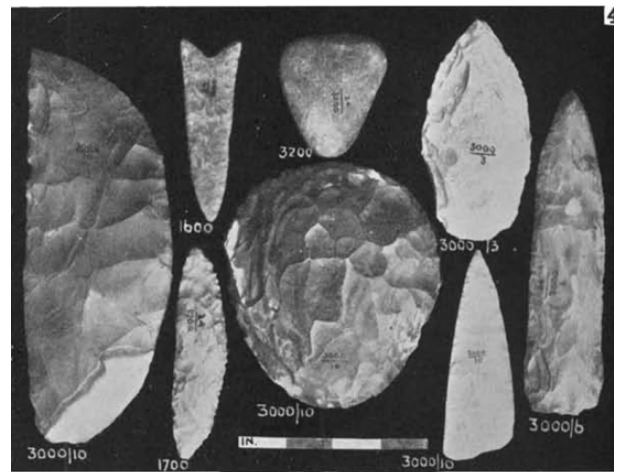
domestic zones were abandoned during the Neolithic and later in the Predynastic period. Other areas were used as cemeteries in later dynastic periods, with burials interred in earlier village sites dating back to the Badarian and Predynastic periods (Figure 4).



**Figure 4** Small curved, bifacially-worked knife JE.67131, from the Neolithic settlement of Merimde Beni Salama.

For example, Area (100) in Mostagadda illustrates a site where occupational remains and burials coexist, as it was used continuously from Neolithic period through to the Roman period. This area experienced multiple episodes of looting; making it difficult to establish clear boundaries between the various site features, including burials and domestic remains. However, based on Brunton's description, it is evident that the site originally functioned as a settlement during the Late Neolithic/Early Predynastic period, with sub-adults buried in the abandoned parts of the village, while later dynastic burials were added over time. The remains in this area include pottery, microliths, and flint knives. The types of knives recorded from early contexts at Mostagadda were primarily made from flakes. Brunton also noted the presence of what he described as "rough knives" though these were rarely photographed or described in detail, with the only information provided being their lengths, which ranged from 10 to 15 cm. Due to the very low resolution of the photos in Brunton's publication, it is difficult to determine the exact nature of the symmetrical knives, specifically whether they were single-edged or double-edged. This issue extends to the knives excavated from various domestic areas discussed by Brunton, including areas 3500, 3200, 2850, 2600, 2837200, and 1800. However, from the available photos, we can discern that some of the recorded types resemble double-edged knives with pointed tips and butts, while others have square butts. As for the curved varieties, they included types with straight backs and, in rare cases, with a tang. Brunton referred to one such example as a "twisted knife with socketed tang". However, its shape is a bit different than the handled or tanged knives from El Omari as the latter has a curved edge, pointed tip, and a curved tang.

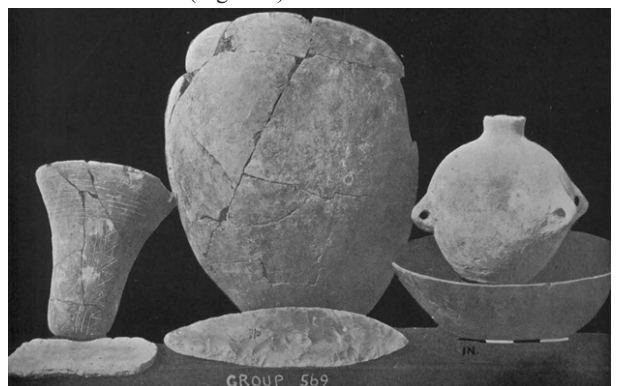
Other examples which are more abundant in Upper Egypt include the rough cortical knives from Mostagadda, now housed at Cairo Egyptian Museum (29/3400, and JE.52916) (Figure 5a) The rough knives from Mostagadda were described by Brunton among two other examples as "group of four large flints with cortex". These were uncovered in area 3400, a domestic area with few recorded Tasian burials. However, the shape, rough nature, and large size of these knives suggest their domestic use. The earliest forms of knives are less visible in other sites such as the case with Merimde Beni Salama, despite the richness of the lithic assemblage belonging to this farming community, and its significance for reconstructing the evolution of lithic industries through the prehistoric period, given the preserved stratigraphic sequence. However, pebble-butted and backed knives were among the recorded types of knives from the earliest strata (*Ursicht*). Nevertheless, other uncommon types, including bifacially-flaked examples with possible integral handles, have been observed (Figure 5).



**Figure 5** The symmetrical knife 3000/6 uncovered from village remains and knife 1700 found south to a burial area at Hammieh wadi.<sup>2</sup>

Due to the inconsistent terminology used by the aforementioned excavator, which does not align with the standard terms found in contemporary literature, the original terms discussed have been consolidated into three main categories: curved, symmetrical, and uncommon types. This streamlined classification aims to organize the recorded knife types from both domestic and non-domestic contexts, while also establishing a link between these early 'ancestral knives' and their successors in the Predynastic period.

Based on the data derived from publications on lithic assemblages from Neolithic settlements, it is evident that the knives of this period included both symmetrical and curved types. Handles were likely present in the form of tangs, which varied in size and quality, likely serving as a means of gripping the knives for daily use. Rough knives, often characterized by cortical or white-crusted surfaces, were found at both Lower and Upper Egyptian sites, appearing in both symmetrical and curved forms. The roughness of certain tool types, along with the retention of parts of the cortex, seems to have been a distinguishing feature of specific classes of tools, particularly flint knives. This characteristic was also noted by Brunton, who remarked on the Tasian/Neolithic flints from Matmar, stating: "The Tasian flint-work, as far as we can judge it at present, is mostly rough in style; there are many specimens where part of the cortex of the original nodule has been left" (Figure 6).



**Figure 6** The grave goods from the neolithic burial 569 at Qau SD 21.<sup>2</sup>

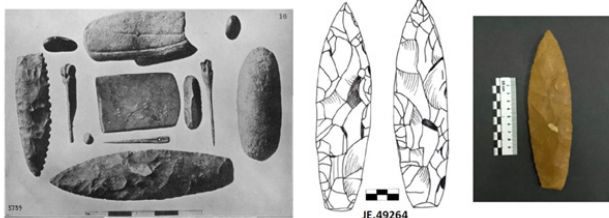
The knives in Upper Egypt appear to be somewhat larger in size. However, their shapes and finishing suggest more frequent

use of bifacial flaking technique, especially when compared to the symmetrical shapes of Lower Egypt i.e. Fayum and El Omari. This is noteworthy considering the demonstrated knowledge and skill used to apply the same technique to other tool types since the Paleolithic period in Egypt. This observation aligns with those of other scholars, who have noted the delayed use of pressure flaking on knives, even though the necessary skills and knowledge were already available earlier. However, the bifacial knives uncovered from domestic context, were characterized by the removal of large, variable-sized, irregular flakes with keeping part of the cortex in some cases.

*The earliest Flint knives entering the funerary realm.* The inclusion of grave goods in burials is believed to have begun as early as the Neolithic period in Egypt, although earlier rare instances have been documented, such as the flint axe found in the male burial at Nazlet Khater, dating to the Middle-Upper Paleolithic period. However, clear evidence of funerary assemblages only emerges during the Neolithic, when objects began transitioning from domestic to non-domestic contexts, preceding the creation of new objects specifically for funerary use. During this phase, grave goods primarily consisted of items associated with daily life. Ceramics and a few stone tools were among the first objects to take on these new roles in burial practices. Nevertheless, the types of objects found in both domestic and funerary contexts remained largely similar, with only slight variations.<sup>35</sup>

Knives were among the earliest stone tools to be included in burials, alongside flakes and blades. This is evidenced by the limited but significant instances of knives being used as grave goods in early burials. For example, in Tasian burial 429 at Mostagedda, a symmetrical flint knife with a pointed tip and partially cortical back was placed at the feet of a 14-year-old child, along with a pot and *Ancillaria* shells. Additionally, a “magical knife” made of bone was found in a final Neolithic female burial at Gebel Ramlah.<sup>36,37</sup>

Burial 569 was the only one documented in areas 400 and 500 at Qau, which had largely been impacted by its use as a disposal site by the residents of Ezbet Ulad el Hagg Ahmed. Among the objects found in this burial was a symmetrical, likely double-edged knife, accompanied by other items such as a rough pot, a rippled pot, and a black incised beaker. Another potential funerary knife, a symmetrical blade with a pointed proximal tip (Figure 5) was discovered south of burials numbered 1700 at Hammieh. While the knife was not directly linked to a specific burial, other objects were found nearby, including an arrowhead and a pot. Additionally, a symmetrical double-edged knife with a pointed tip and square distal end was part of the assemblage uncovered at Hammieh. Though it bears a resemblance to the Neolithic knife from burial 1700, the excavator assigned it to an early Predynastic date, a plausible attribution when compared with a slightly similar knife found in burial 5739 (Figure 7).



**Figure 7** Symmetrical bifacially-flaked knife currently housed at EMC. JE.49264/SR.5809 from Burial.5739 at Badari.

The knife found in burial 5739, now housed in the Cairo Egyptian Museum (JE.49264), was discovered alongside a saw-edged knife featuring a pointed tip, square butt, and a regularly toothed curved

(Figure 7) A direct examination of knife JE.49264 reveals that it is bifacially flaked, with a pointed tip, square butt, and some remaining cortical areas. The knife was crafted by removing flakes of varying sizes from different directions and is made of honey-brown flint.<sup>38</sup> These two knives were accompanied by typical late Neolithic funerary goods, including shells, beads, bone piercers, needles, and a rectangular palette, most of which were placed near the knees of the male deceased. A similar example comes from burial 5120, which contained a flint knife comparable to that in burial 5739, characterized by a pointed tip, square butt, symmetrical shape, double edges, and bifacial flaking. In this case, the knife was found alongside two arrowheads and a pot.

In her analysis of the flint implements from Badari, C Thompson described “saw-edged knives” that resembled harvesting sickle blades. These examples were compared to previously dated finds from Nubia, assigned to Sequence Date 37 (SD 37), suggesting they likely belong to the Late Neolithic or Early Predynastic period. Burial 5389 at Badari yielded part of a “rough saw-edged knife”, while burial 5706 contained a complete saw-edged knife along with a collection of flints, possibly placed in a bag behind the male deceased’s pelvis. A photograph of the knife shows it as curved, with a pointed tip and a rounded-square butt. In burial 5134, a small knife was described as “saw-edged,” though the photograph reveals it to have a pointed tip and square butt. This knife was positioned near the knees of an undisturbed child whose body was wrapped and covered with matting. Another early form includes the square-butted knife from burial 2015, which was placed at the back of the deceased. Uncommon variants include knives with “tang” or small handles, which may indicate early attempts at producing knives with integral handles or imitating other tool types, such as tangéd arrowheads. Knives with tangs can be classified into two major groups: the first, represented by examples from El Omari, are “handled knives” typically featuring square tips and parallel blades; the second group, found in Badari, is characterized by curved blades and pointed tips. The timing that marked knives entering the funerary realm is variable across various regions in the world.<sup>39</sup> However, if hand axes, flakes and blades, which are known as tools serving multi-purposes, might be considered as ancestral knives, then the earliest evidence in Egypt might be the upper Paleolithic, while the upper Paleolithic in Europe witnessed the use of blades as funerary goods too, and the experimental studies proved their movement from earlier domestic context in several cases and their involvement in daily activities similar to that associated with traditional flint knives.

The scarcity of examples from this period can be attributed to the nature of Neolithic mortuary practices, where burials were often dug in abandoned settlement areas or even within active occupational zones. Additionally, the limited use of grave goods during the Neolithic, combined with the poor preservation of villages and settlements largely due to their proximity to the floodplain and cultivated land has contributed to the disturbance of early burials, their low visibility, and the difficulty of distinguishing objects associated with Neolithic burials from those linked to later Predynastic domestic contexts. Furthermore, distinguishing between Neolithic and early Predynastic periods in early publications is often challenging due to inconsistent terminologies used to describe chronological periods, the continuous occupation of the same sites throughout both periods, and the uncertainties that early excavators, particularly in the late 19th and early 20th centuries, had about the prehistoric timeline. For instance, the earlier burials at Qau were reported as being significantly plundered by later Dynastic and Roman burials, which further obscured the archaeological evidence.

The interchangeable use of terms such as “Tasian” and “Badarian,” as well as “Badarian” and “Predynastic,” is evident in Brunton’s publications on Badarian sites. For instance, while describing “Badarian” burial 472 at Mostagedda, he remarked that “this might quite well be Tasian”. Similarly, some of the earliest knives were described as worked flakes or rough flints. This observation could also be inferred from the analysis of knives found at the so-called “Badarian town group” in Mostagedda, as their characteristics suggest they may have originated from domestic contexts rather than being specifically made for funerary purposes. This terminological ambiguity is also seen in references to Badarian sites. The term “Badarian” is sometimes used to describe a Neolithic context, equating it with the archaeological remains from other Neolithic sites such as Merimde, Maadi, and Buto. In this view, the Badarian culture is seen as the Neolithic counterpart of Lower Egyptian sites in Upper Egypt. Others, however, use “Badarian” to denote an Early Predynastic period.

The term “Tasian” has been commonly applied in early publications to describe a culture preceding the Badarian, with sites such as Mostagedda, Badari, and Matmar being classified as Tasian. Hendrickx suggests that the term “Tasian” implies both cultural and chronological differences from the Badarian. Furthermore, radiocarbon dates from the Wadi Atulla site in Egypt’s Eastern Desert (4940–4455 cal BC) confirm that the Tasian culture preceded the Badarian, though it may have been partially contemporary with it. Through the limited recorded examples, we can at least conclude that the types of flint knives detected among the funerary assemblages of the Neolithic and Early Predynastic periods are considerably limited in both shape and quantity. The recorded examples are concentrated in Upper Egypt, particularly within the Badarian region/culture, including sites such as Badari, Mostagadda, and Qau. The recorded forms mainly include symmetrical shapes with pointed tips and square butts, bifacially-worked. Their possible use prior to deposition in the burial cannot be confirmed due to the limited opportunity to investigate similar examples in museum collections, except for the case of knife JE. 49264, whose edges were relatively worn but did not show clear signs of use upon examination. Such knives might have been hafted. The other type recorded from burials is often described as a “saw-edged knife,” whose toothed edge closely imitates that of Neolithic sickles. This type is characterized by its pointed top, square distal end, or hollow-based butt. However, both types existed in low frequency among the investigated sites.

## Final remarks

The Neolithic period marked the emergence of traditional knives characterized by prominent cutting edges. This development likely followed an extensive period during which multifunctional tools, such as hand axes, flakes, and blades, were utilized for purposes akin to those of flint knives from the Neolithic onward. The rise of specialized knives probably stemmed from the growing demand for efficient cutting tools, designed with ergonomic grips to assist farming communities in everyday tasks related to cutting, butchery, slaughtering, and processing various materials. These early knives can be viewed as ancestral forms that predate the more refined varieties produced during the Predynastic period, showcasing curved and symmetrical designs. However, their production tended to be rudimentary, likely reflecting their practical use, with shapes that varied considerably. The sizes of these knives may also indicate the level of exhaustion, as suggested by existing examples. The domestic ancestral knives were produced through various techniques and were

made on flakes and blades. However, their surfaces were either left unworked with special attention paid to the edges, while in other cases the blades and surfaces of these knives were worked through the removal of variable-sized flakes, sometimes with keeping part of the cortex, which have functioned as mean of gripping the knives with cases such as the pebble-butted knives, and might also reflect spending less effort in working the entire surface of the large rough flake knives. These forms are best represented by finds from sites such as Fayum, Badari, Merimde, and Mostagadda. The evolving beliefs of the Neolithic communities dwelling upper and Lower Egypt developed rapidly and started to be expressed through various ways including the establishment of grave yards, the inclusion of grave goods, and showing care towards the bodies of the deceased. It is from this time onwards, that daily life objects started to be manipulated between domestic and non-domestic context. The earliest objects entering the funerary realm included utilitarian ceramics and lithics together with personal ornaments made of organic materials like shells. Throughout this period, the practice of including stone tools as grave goods was evolving, with knives beginning to acquire special symbolic value. This trend would continue to evolve rapidly with the onset of the Predynastic period.

It is from this time that funerary knives began to be differentiated from domestic knives. However, both types were notably distinct from those used in the Predynastic period. The flint knives identified in the funerary assemblages of the Neolithic and Early Predynastic periods are notably restricted in both shape and quantity. Most examples are known from Upper Egypt, particularly from the Badarian region. The predominant forms are symmetrical, featuring pointed tips, square butts, and bifacially-flaked. Confirming the use of these knives prior to their deposition in burials is challenging due to the scarcity of comparable examples in museum collections, which should facilitate conducting residue and use-wear analysis. However, the shapes of those knives suggest spending more efforts in their production, which refers to the possible emergence of certain level of craft specialization coinciding with the increased social stratification and the development of funerary beliefs.

The relationship between the inclusion of flint knives and the social status of the deceased during this period remains unclear, primarily due to the low frequency and generally simple nature of the funerary goods, as well as the relatively uncomplicated burial types and body treatments. While matting was consistently used for covering and wrapping in the examples discussed, the accompanying items cannot be definitively linked to expressions of wealth or social status. However, it is obvious that the production of knives for funerary purposes emerged as an upper Egyptian tradition. It was also in Upper Egypt that funerary knives started to be distinguished from domestic varieties, although still in limited shapes that probably imitated or were inspired by other tool classes like points and sickles. Another notable trend is the consistent placement of funerary knives at the pelvic area, knees, and back of the deceased, as illustrated in the examples discussed. This practice appears to have been a preferred method for positioning funerary knives, a trend that continued into the successive Naqada phases.

However, it is reasonable to suggest that the inclusion of these ancestral forms of funerary knives in burials laid the groundwork for the emergence of new traditions in the Predynastic period. The appearance of luxuries and finely-crafted funerary knives, such as fishtail, ripple-flaked, and rhomboidal knives, during Naqada I should

not be viewed as an abrupt shift in funerary beliefs. Instead, it reflects a gradual evolution in the socioeconomic landscape, with roots firmly planted in the sedentary lifestyles of Neolithic inhabitants. The roles played by those early knives and their earlier ancestral forms as means of food acquisition, protection, and survival, which extends back to the Paleolithic period, were altogether probably behind imparting symbolic values on such objects. The same probably occurred with ceramics before and during the Neolithic with roles linked to the daily activities of pastoralists and food producing societies. All of such factors together with the possible people-stone and people-clay entanglement assumed during this period, paved the way to the production of new types produced solely for funerary purposes during the successive Naqada phases. Additionally, the emergence of elites and the transformation of large settlements into power centers facilitated the evolution of various traditions and practices, which took on more sophisticated forms while building upon earlier customs and beliefs. This evolution is evident in the selection and production of more refined flint knives for inclusion in burials, marking the early signs of a divergence in the industry into two categories: domestic and non-domestic.

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## Conflicts of interest

The author declares that there are no conflicts of interest.

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