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Inter-regional variability in Egyptian Predynastic lithic assemblages

Introduction

The last overview of lithic artifacts from Predynastic Egypt was written by Elise Baumgartel and published in 1960. Her work was based on material from excavations carried out in the period from the end of the 19th century until the outbreak of the Second World War. The excavators included scholars such as Petrie, Brunton, Quibell and Caton-Thompson. Little in the way of field research pertinent to Predynastic studies was undertaken again until the late 1960s, and since then there have been a number of teams excavating Predynastic sites.

The aim of my research has been to evaluate material from some of this more recent fieldwork and to weld it on to information I have obtained from some of the earlier excavations. In the process, I have been developing an appropriate classification scheme. My focus has been on the ordinary stone tools from settlement sites rather than the more elaborate forms found in cemeteries, although I have found I cannot ignore cemetery material entirely.

It has been clear for a long time that places in the north of Egypt, such as the Fayum and Merimde have produced collections of lithic artifacts which are quite different from those from Predynastic sites in Upper Egypt. The earlier scholars gave one the impression that the Predynastic of Upper Egypt was one homogeneous entity. My current research is showing that this is not strictly true, that there are certainly some differences between various lithic assemblages. I shall illustrate this inter-regional variability by describing and comparing three collections representing Badari, Nagada and Hierakonpolis (Fig. 1).

Three Predynastic sites in Upper Egypt

Badari: Area 3000/6

Brunton excavated a number of settlement sites in the Badari district in the 1920s (Brunton and Caton-Thompson 1928), and I have examined material from these sites in the Petrie Museum in London. In this paper, I shall refer to one settlement

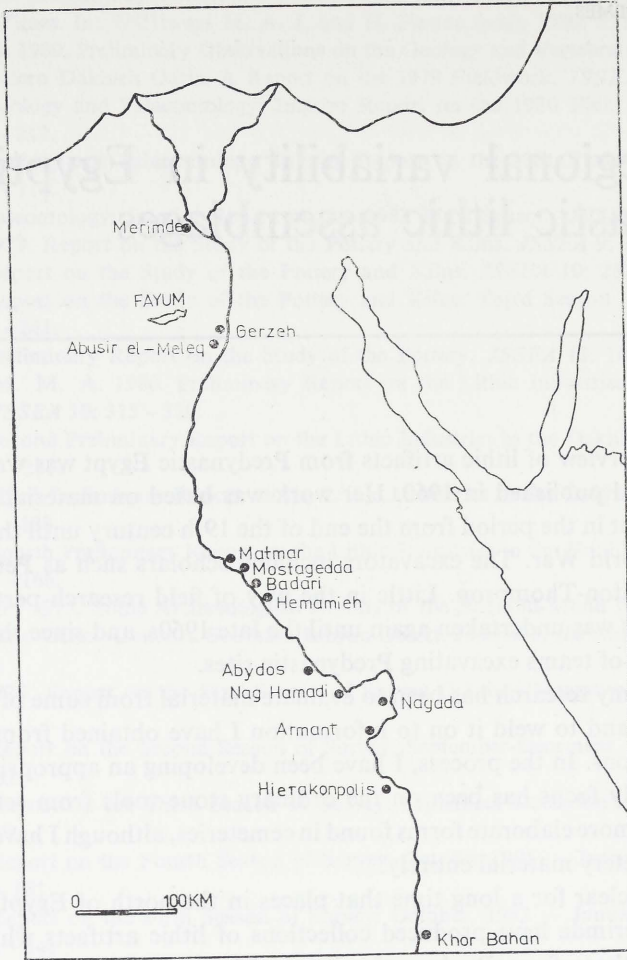


FIG. 1. Location of sites mentioned in the text

area, Spur 6 or Area 3000/6. My analysis of all the data I have collected for the Badari village areas is not yet complete, but Area 3000/6 seems representative of the collections.

Apart from obvious pieces such as bifacial knives, Brunton describes the stone tools as "flint flakes", but in fact the most striking aspect of his collections is that they consist mainly of tools made on good, regular blades; there are hardly any flake tools.

It may be thought that material from such old excavations is so biased as to be worthless. Bias certainly exists, but nevertheless, I have still found this material to be useful, and the presence of small, unretouched bladelets, and occasional refitting blad-

es gives one some confidence in the material. The mere presence of certain categories of artifact is often significant, as will be seen later.

Nagada: Site KH3, Area X/XI

Several seasons of excavations in the Nagada area have been carried out under the direction of Fekri Hassan since 1978, with a preliminary survey season in 1975 - 6 by Hassan and T. R. Hays (Hays 1976). There are several settlement sites in the region, site KH3 being one of the most thoroughly investigated. For making comparisons, I shall consider the lithic data for site KH3 Area X/XI, which is fairly representative of the Nagada sites.

Hierakonpolis: Locality 29, Square -10L10 (Level 1)

The third assemblage I shall consider comes from level 1, square -10L10, Locality 29 at Hierakonpolis. Excavations were carried out at Locality 29 in 1978 and 1979 by Michael Hoffman (1982). McHugh (1982) studied the lithic artifacts from Structure II, Locality 29, which is in the 10×10 m square (-17L13) adjacent to square -10L10. I have examined the material from square -10L10, and found that there do not appear to be any significant differences between the lithic artifact from this square and those from the square containing Structure II. In both, the predominant tool classes are scrapers, burins, and notches and denticulates.

Dating

Although the sites considered here are not strictly contemporary, I do not believe the variation in the lithic artifacts seen between the three sites to be chronologically significant. Site KH3 is dated to *ca* 3,750 B.C., and Locality 29 to *ca* 3,500±60 B.C. (Hassan 1984: 13). The assemblage from site KH3 at *ca* 3,750 B.C. is mostly similar to that from South Town (also in the Nagada area) dated to *ca* 3,450 B.C. What differences there are will be touched on later.

It is difficult to assign precise dates to the Badari village areas. A clue to their age is provided by the stratified site of Hemamieh in the same area (Brunton and Caton-Thompson 1928; and my own observations of the Hemamieh collection in the Petrie Museum). In the lower levels, flakes and flake tools are common. Blades soon appear, but it is in the upper (Gerzean) levels where they predominate suggesting that the material from the Badari settlement areas is relatively late. However, whatever their absolute age, the lithic collections form a consistent industry.

A comparative assessment

The major lithic categories

Since the collection from the Badari Area 3000/6 represents a somewhat biased sample only limited statements can be made concerning the major lithic categories (Table 1). The mere presence of good blades, crested blades, and blade and bladelet

Table 1

Frequencies and percentages of the main lithic categories at three Predynastic sites in Upper Egypt

Lithic categories	Sites	Nagada, Site KH3		Hierakonpolis	
	Badari, Area 3000/6	Area X/XI	%	Loc. 29 (-10L10)	%
	n	n		n	
Primary flakes	0	628	11.7	220	6.8
Primary blades	2	109	2.0	22	0.7
Secondary flakes	3	3078	57.1	1802	55.9
Secondary blades	132	826	15.3	459	14.2
Debris	0	(only weight recorded: 63494g)		332	—
Cores	6	176	3.3	38	1.2
Core rejuvenation pieces	2	42	0.8	11	0.3
Crested blades	1	0	0.0	0	0.0
Burin spalls	0	92	1.7	99	3.1
Axe preparation flakes	1	30	0.6	0	0.0
Quartz debitage	0	0	0.0	15	0.5
Other debitage	0	0	0.0	91	2.8
Tools	330	407	7.6	468	14.5
Total	477	5388	100.1	3557	100.0

Percentages calculated excluding debris.

cores indicates a developed blade technology. This contrasts with the Nagada site where none of the blades are very regular, although they account for 15.3 per cent of the assemblage. The blades (or a better term would be "flake-blades") are really long flakes produced in the same manner as the ordinary flakes, that is by direct percussion with a hard hammer. There was no separate, special technology involved in their production. The cores are flake cores and there are no crested blades.

The percentage of blades at the Hierakonpolis site, Locality 29, appears similar to that at KH3 Area X/XI (14.2% compared with 15.3%). Actually this is a relatively high percentage for the Nagada area. The blade percentage for KH3 Area B for example, is 5.2. However, the Hierakonpolis blades are true blades, although they are unlike those from Badari. The Hierakonpolis blades are generally smaller. They have a mean length of 35.3 mm compared with a mean of 71.5 mm for Badari. The same trend is seen in the mean widths and thicknesses. There also appear to be some differences in the platform characteristics of the blades. The Hierakonpolis blade platforms tend to be more irregular in shape than those of the Badari blades.

One interesting similarity is the presence of small blades or bladelets at both Hierakonpolis and Badari which have a very glossy appearance and are often of slightly unusual shades of colour. I suspect this represents heat treatment. No such glossy bladelets occur at Nagada.

Flakes form the predominant category at both Nagada and Hierakonpolis. Although I do not have any data on the flakes from Locality 29, they appear similar to those from Nagada. They are small (a sample from Nagada has given a mean length of 34.4 mm), broad, and appear to have been produced by a hard hammer

percussion technique. As noted above, the cores from the Nagada are all flake cores, and most of the cores from Locality 29 are flake cores. Only three pieces from Badari, Area 3000/6 can be classified as flakes, but they are relatively elongate and are clearly by-products of the blade technology. Some tools are made on large flakes, but to what extent flakes and flake technology occurred in the Badari district I am unable to discern from the museum collections.

Of the three sites, only Locality 29 has produced any quartz debitage, where it accounts for 0.5 per cent of the assemblage. Apart from this exception, the raw material in all regions is flint.

The tool classes

The main tool classes (Table 2) in the Badari, Area 3000/6 collection are scrapers, truncations, backed pieces and sickle blades. The predominant classes at KH3 Area X/XI are scrapers, burins, notches and axes, and at Locality 29 the assemblage contains a relatively large number of burins, with scrapers and notches forming the next largest categories.

To what extent the tool frequencies for the Badari collection are representative of the original tool assemblage is conjectural. It seems likely that a number of tools such as notches, denticulates and some burins would have been made on small, unremarkable flakes which were not collected. Nevertheless, the importance of the collection, biased though it may be, is that it shows that tools on true blades formed a conspicuous part of the original assemblage, and the presence of certain classes and the absence of certain others are important in making comparisons with assemblages from other areas.

I am undertaking a detailed comparison of the tool assemblages from several Predynastic settlement sites in Egypt. Unfortunately, space does not permit me to give many details for the three sites under consideration. I shall, however, discuss the scrapers and burins in a little depth to show that while various assemblages may all contain significant numbers of a certain tool class, there the similarity may end. The specimens of the class from one locality may have little in common with those from another site. The "scraper" class is a case in point for the current inter-site comparison.

Scrapers form an important group at all three sites, but they are not alike at all three locations. Essentially, all the KH3 scrapers are made on flakes, a few being made on flake-blades. At Locality 29 only slightly more scrapers are made on flakes than on blades. At Badari, however, although slightly more scrapers are made on blades than on flakes, there seems to be a clear separation of scraper forms. Those made on flakes and blades from Nagada and Hierakonpolis seem to represent a continuum of forms. At Badari there are endscrapers on blades and scrapers that are circular or oval in plan, and made on large, broad flakes or, in some cases, core tablets.

Numerically, burins form the most important tool class at both KH3 Area X/XI and Locality 29, while at Area 3000/6 they constitute only a few per cent, although this lower frequency may reflect a bias of the collection. Most of the KH3 burins are made on flakes (60.0%; 27.7% on flake-blades). At Locality 29, most burins are made on blades (56.3%), while 29.2% are on flakes. Single burins on breaks are important at both Locality 29 and KH3, although they are more abundant at Hierakonpolis (37.5% vs. 20.0%). The KH3 burins are notable for their frequency of dihedral forms (29.2% compared with 4.2% at Locality 29), and lack of multiple burins. At Locality 29, multiple burins account for 6.3 per cent of the burins.

Table 2

Frequencies and percentages of the main tool classes at three Predynastic sites in Upper Egypt

Tool classes	Badari, Area 3000/6		Nagada, Site KH3 Area X/XI		Hierakonpolis Loc. 29 (-10L10)	
	n	%	n	%	n	%
Scrapers	44	13.5	63	15.5	23	5.6
Burins	16	4.9	112	27.5	145	35.1
Notches & denticulates	6	1.8	58	14.3	33	8.0
Perforators	13	4.0	11	2.7	10	2.4
Grand percors	0	0.0	3	0.7	0	0.0
Microdrills	0	0.0	0	0.0	8	1.9
Truncations	55	16.9	16	3.9	19	4.6
Backed pieces	26	8.0	0	0.0	6	1.5
Sidescrapers	1	0.3	2	0.5	5	1.2
Sickle blades	44	13.5	0	0.0	0	0.0
Knives on blades	16	4.9	0	0.0	0	0.0
Glossy bladelet tools	19	5.8	0	0.0	0	0.0
Planes	1	0.3	6	1.5	0	0.0
Transverse arrowheads	0	0.0	0	0.0	4	1.0
Concave-based points	3	0.9	0	0.0	0	0.0
Winged drills (incl. fragments)	0	0.0	0	0.0	14	3.4
Axes	0	0.0	24	5.9	0	0.0
Other bifacial tools	17	5.2	2	0.5	21	5.1
Miscellaneous/other	7	2.2	26	6.4	7	1.7
Unidentifiable tool fragments	5	—	0	—	55	—
Retouched pieces	57	17.5	84	20.6	118	28.6
Total	330	99.7	407	100.0	468	100.1

Percentages are calculated excluding retouched pieces.

Notches and denticulates are fairly abundant at KH3 and Locality 29. Since many are made on unremarkable flakes in both assemblages, it seems likely that many occurred at Badari but were not collected and hence the low percentage for Area 3000/6.

At Area 3000/6, sickle blades, truncations and backed blades form important classes (13.5%, 16.9%, and 8.0% of the collection respectively), and are made on good blades, while they are minor or non-existent categories at Locality 29 and site KH3. Sickle blades, however, do seem to have some chronological significance. Although there are no sickle blades at KH3 or Locality 29, they form 3.4 per cent of the tool

assemblage at South Town, and have been found in very late Predynastic (Nagada III) levels in the Hierakonpolis region (Hoffman, pers. comm.).

Also present at the Badari site are "knives on blades" and "glossy bladelet tools". Both these categories are absent from Locality 29 and site KH3, although knives on blades are known from graves and South Town in the Nagada area (Petrie and Quibell 1896: 57, Pl. LXXIII: 68, 71), and the prehistoric cemetery worked by Quibell and Green (1902: 48, Pl. LXI: 3 - 6) in the Hierakonpolis region.

"Glossy bladelet tools" is a provisional group consisting of small tools made on regular bladelets which have a glossy appearance. They are mostly truncated at one end and/or are neatly retouched along part of one edge. Unretouched glossy bladelets have already been considered, and although unretouched examples occur at Hierakonpolis, the tools seem limited to the Badari region.

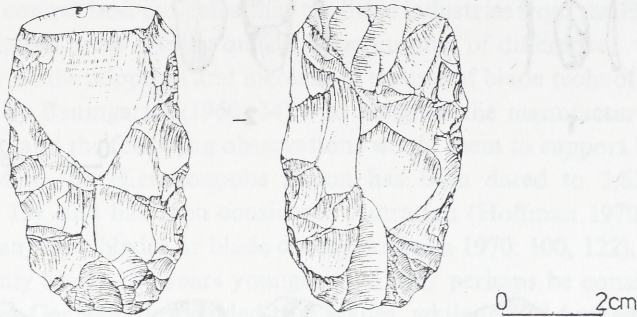


FIG. 2. Nagada. Axe with tranchet flake scar

Of the three localities considered here, only Area 3000/6 has produced any concave-based projectile points, but they are known in the Nagada (Petrie and Quibell, 1896: 56, Pl. LXXII: 58; and specimens recovered during the recent fieldwork in the Nagada area by Hassan) and Hierakonpolis regions (two are figured by Quibell 1900: 8, Pl. XXIV: 12, 12a, for the temple area at Hierakonpolis).

Equally, there are tools present at the Nagada site which are absent from Area 3000/6 and Locality 29. Grand percoirs occur at KH3 Area X/XI, and although several examples are known from the settlement site of Armant (Huzayyin 1937: 212 - 214, Pl. LVIII: 38 - 43, LXIV: 32 - 37) there are none recorded for the Badari or Hierakonpolis areas.

Axes form a distinctive class at site KH3, and in the Nagada region in general (Fig. 2). The typical Nagada axe is U-shaped with parallel or slightly divergent sides, and the axe bit is frequently prepared by the removal of a tranchet flake. No such axes were found at Locality 29 or in the Area 3000/6 collection. However, there is a photograph of a good tranchet axe from a jar burial in the Hierakonpolis report by Quibell and Green (1902: 48, Pl. LX: 13), and I have come across three axes in the

Henri de Morgan collection, catalogued as from the "Kom el-Ahmar middens", in the Brooklyn Museum. In the Area 3000/6 collection, there is one axe preparation flake, and there are further such flakes from other Badari settlement areas. Their presence suggests that the manufacture of axes with the bit prepared by the tranchet technique was known, but I have not encountered any axes in the Badari collections. However, there are two poor axe specimens from Hemamieh (Brunton and Caton-Thompson 1928: Pl. LXXXI: 96, LXXXIII: 162). There are also some axes from the Matmar and Mostagedda areas just to the north of the Badari district which Brunton also explored, and these are shown in the plates of his reports (Brunton 1937: Pl. XXVI - XXVIII; 1948: Pl. VII, XVII: 73). The main distribution of Nagada-type axes, as Huzayyin (1937: 210) pointed out in 1937, is between Nag Hamadi and Ar-mant. Beyond these limits, the axe does not seem to have been a common implement.

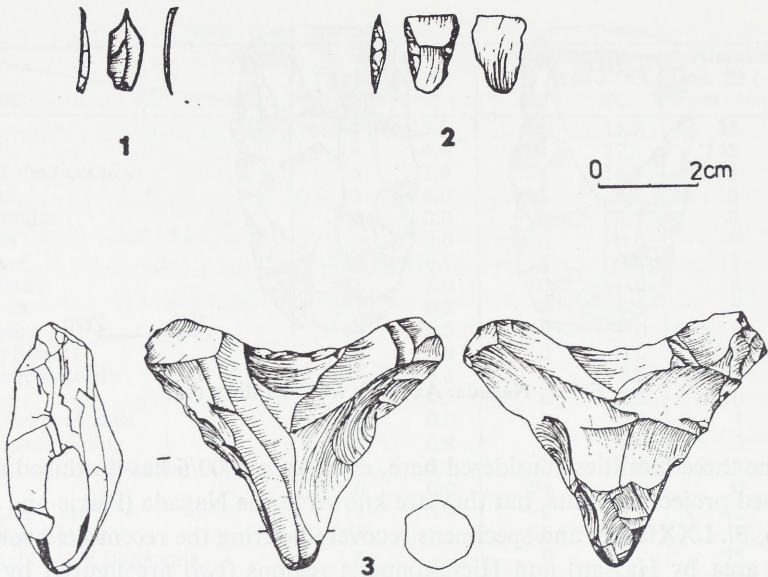


FIG. 3. Hierakonpolis, Locality 29, square -10L10

1: Microdrill; 2: Transverse arrowhead; 3: Winged drill

Microdrills and winged drills occur at Locality 29, but not in the Nagada or Badari areas. Microdrills (Fig. 3 : 1) are small perforators on bladelets, and are also known from elsewhere in the Hierakonpolis region (Quibell and Green 1902: 11 - 12; Butzer, 1959) and at a Predynastic settlement site in the Abydos area (Peet 1914: 3, Pl. IIIa).

Winged drills (Fig. 3 : 3) are bifacially worked, Y-shaped implements. Five complete specimens and several fragments came from square -10L10 at Locality 29. Two are recorded for the adjacent square. They are described as "tribranch flints" by

Quibell and Green, who figure four from the temple site (Quibell and Green 1902: 39, Pl. XXIV: 24 - 27). Although there are no winged drills in the Badari collections, in both "Matmar" and "Mostagedda" there are plates which appear to show these implements (Brunton 1937: 81, Pl. XXVIII: 67, 70 - 71; 1948: 21, Pl. VII: 51 - 53).

Locality 29 has also produced four transverse arrowheads (Fig. 3 : 2), and further examples are known from tombs in the Hierakonpolis area (Hoffman 1982: 51, 53). Only one specimen has been found in the Nagada area (from site KH3 Area B). The only other Predynastic examples I can find reference to are three specimens from grave 1066 at Abusir el-Meleq (Scharff 1926: 48, Pl. 30), and several from the cemetery at Khor Bahan, south of Aswan (Reisner 1910: Pl. 62).

Blade technology and elaborate tool forms

The above comparison indicates that the lithic industries from the Hierakonpolis, Nagada and Badari areas display quite a large number of differences. One common trend, however, is the adoption and increase in the use of blade technology. This was also observed by Baumgartel (1960: 34) who assigned the manufacturing of blades to the Gerzean, and the following observations would seem to support her view.

Locality 14 in the Hierakonpolis region has been dated to $3,625 \pm 150$ B.C. (Hassan 1984: 15), and has been considered Amratian (Hoffman 1970: 214). It has not produced any true blades or blade cores (Hoffman 1970: 100, 122). Yet Locality 29, which is only about 100 years younger (and may perhaps be considered transitional Amratian-Gerzean) has yielded true blades, while in the Archaic levels at the Kom el-Ahmar are frequent high quality, true blades and blade tools. Indeed, Hoffman (1970: 100) has noted that "There is some indication ... that true blades became common only after the Amratian period in the Hierakonpolis area. In fact, the peak of both frequency and quality of manufacture of true blades appears to occur in the Archaic period".

While there are no true blades from site KH3 (which may be considered Amratian), true blades and blade tools do occur at South Town (Gerzean).

The settlement site of Hemamieh has already been mentioned. The Badari village areas are considered relatively late Predynastic based on the evidence from this site where blades do not occur at all in the lower levels but eventually appear and increase in abundance until most common in the Gerzean levels.

Again, despite differences between the ordinary stone tool assemblages from these three areas, there are certain tools which not only occur in all three regions, but also appear identical and absolutely standardized. The Predynastic cemeteries in the Badari and Nagada areas have produced ripple-flaked knives and fishtails (Brunton and Caton-Thompson 1928: 50, 51, 61, Pl. XXIX : 3, XXXIV : 1, XLVIII : 6, LVII : 1; Petrie and Quibell 1896: 58, Pl. LXXIII : 61 - 63, 65 - 66, LXXIV : 86), and fishtails are known from mortuary contexts in the Hierakonpolis region (Quibell and Green 1902: 50, Pl. LXIV : 9; Hoffman 1982: 42). These elaborate tools are also known from

other cemeteries along the Nile Valley from areas in the north, such as Harageh (Engelbach 1923: Pl. VII : 2 - 4), Abusir el-Meleq (Scharff 1926: Pl. 29), and Gerzeh (Petrie *et al.* 1912: Pl. VII : 12), to Khor Bahan in Nubia (Reisner 1910a: 122 - 123; Reisner 1910b: Pl. 62b: 11, 14).

Summary

In this paper, I have indicated that assemblages of Predynastic settlement stone tools from three areas in Upper Egypt are in many respects quite different from each other. The Badari area, as represented by the collection from Area 3000/6, is characterized by an abundance of true blades and blade tools, notably scrapers, truncations, backed pieces and sickle blades. The Nagada region, here represented by the assemblage from site KH3 Area X/XI, has a flake industry with an abundance of scrapers, burins, notches and denticulates, and axes, and the Locality 29 assemblage from Hierakonpolis shares with Nagada an abundance of scrapers, burins, and notches and denticulates, but it lacks axes, and instead has implements like microdrills and winged drills. It is also characterized by having both flake and blade technologies. Yet the cemeteries in all these areas, and indeed along the Nile Valley from Gerzeh to Khor Bahan, have produced elaborate tools such as fishtails and ripple-flaked knives. The inter-regional variability observed in the settlement lithic assemblages may be viewed as local idiosyncratic variation. The ordinary stone tools for everyday use were probably manufactured locally, while elaborate stone tools, such as the ripple-flaked knives, may have been made by craft specialists (Holmes 1984) in workshops at one or a few locations in Egypt, and distributed through trade, or some other mechanism of exchange, along the Nile Valley.

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