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Lithic assemblages from Hierakonpolis and interregional relations in Predynastic Egypt

Introduction

In 1984 when I presented my paper on "Inter-regional variability in Egyptian Predynastic lithic assemblages" at the second Dymaczewo symposium (Holmes 1989a), the notion of regional variability in Upper Egyptian Predynastic material culture still seemed rather novel. Now it appears to be an established aspect of the Predynastic of Upper Egypt. Nevertheless, there remains an enormous amount of work to do in order to see the details of what aspects of material culture vary over time and space.

During the later Predynastic, for example, it is evident that the regional distinctions appear to diminish. Ceramic data in particular indicate a much greater degree of homogeneity during the later Predynastic to the extent that pottery assemblages from both Upper and Lower Egypt appear essentially similar. By the start of Dynastic history, all regional variations seem to have been ironed out; the material culture had become unified (cf. Adams & Friedman 1992; Köhler this volume).

Aside from establishing what variability exists during the Predynastic, there is the question of how to interpret it. For example, in 1987 I suggested the variability that I found among lithic assemblages might reflect different Predynastic kingdoms or other socio-political units (Holmes 1987a: 416). Two years later, Kemp (1989: 34) published a map which looks almost as if it was based on the regional variation found by Finkenstaedt, Friedman and myself from our analyses of artifactual remains (Finkenstaedt 1980; Adams & Friedman 1992; Friedman 1990; in preparation; Holmes 1987a; 1989a; 1989b). However, Kemp did not use any of our data. Rather, he placed the Predynastic chiefdoms or protostates around the presumed regional capitals of Hierakonpolis, Nagada and This.

Hierakonpolis is situated on the west bank of the Nile, about 17 km north of modern Edfu. Modern excavations of Predynastic sites in the area were directed by Michael Hoffman until his untimely death in 1990. The Hierakonpolis

Expedition is now continuing under the joint directorship of James Mills and Walter Fairservis.

In this contribution, I briefly review the Predynastic lithic industry of Hierakonpolis and assess the significance of certain aspects of this tradition in relation to the Predynastic lithic industries of other areas in Egypt.

Predynastic sites at Hierakonpolis and samples studied

I have examined the lithic artifacts from five Amratian localities and from one Gerzean site as well as from Protodynastic contexts though I shall not discuss these latter here.

The lithic data I am presenting come from localities HK-11C, HK-14, HK-24A, HK-25D, HK-29, and HK-29A. In the case of localities HK-11C, HK-14, and HK-29, my analyses represent re-examinations of part or all of assemblages that were originally studied by Harlan, Hoffman, and McHugh. This was so all of the Hierakonpolis lithic data could be more easily compared.

HK-11C and HK-14 are habitation sites in the Wadi Abul Suffian. HK-14 is the older of the two dating to ca. 3625 BC (calibrated); HK-11C is Late Amratian and dates to ca. 3550 BC (calibrated dates provided by Hassan 1984). I have re-examined the small assemblage from HK-14 that Michael Hoffman (1970: 121-127, 140-141; 1972) reported, while for HK-11C I have looked at the sample from unit ON-6E (cf. Harlan 1980: 58-71; 1982).

HK-29 is situated in the low desert about 400 metres from the edge of the modern cultivation. It is similar in age to HK-11C and consists of a house with associated outbuildings and fenced enclosures as well as a pottery kiln (Hoffman 1980; 1982: 7-14). McHugh (1982) originally looked at the lithic artifacts from the 10x10 m square (-17L13) containing the house, and Hoffman examined the material from the adjacent square (-10L10) which included the kiln, though he did not publish his results. I have since re-studied both samples.

Probably very Late Amratian in date are the two localities, HK-24A and HK-25D, situated close to the edge of the cultivation at the mouth of the Wadi Abul Suffian (Geller 1989). Excavations at HK-24A revealed four large vessels encrusted on their inner surfaces with a vitreous black residue which has been identified as being the result of beer making. Grains and fragments of emmer wheat were also recovered suggesting that it was a wheat-based beer that was being brewed. At HK-25D, roughly 100 metres away, a raised platform-like surface with circular basins was uncovered which is likely to have served as an oven for baking the loaves used in brewing the beer at HK-24A. The lithic samples I have analyzed come from square 360 L420 unit 2 at HK-24A, a 5x5 m square which included most of the area with the beer making vessels, and from squares 502.5 L387.5, 502.5 L390, 505 L387.5 and 505 L390 (each 2.5x2.5 m) at HK-25D which covered the platform structure.

HK-29A is a large and very rich site in the low desert (Hoffman 1987). Approximately 600 m^2 of the site were excavated in 1985-86, uncovering a large,

parabolic-shaped, mud-plastered floor over 32 metres long and various associated walls and rectangular buildings. This unusual architectural agglomeration together with its rich and varied artifact assemblage is interpreted as a temple-workshop complex whose main period of use was during the Gerzean (Nagada IIb-d; Friedman pers. comm.). I have sorted and analyzed about half of the lithic assemblage recovered from this site (Holmes 1987b; 1992a).

The Hierakonpolis industry

The data for the Amratian sites provide a basic characterization of the Hierakonpolis industry (see Tables 1 and 2). The HK- 29 data in Table 1 represent my data for square -17L13 only, the overall composition data for HK-29 square -10L10 is not included since the lithic categories were not recorded with quite the same degree of refinement as for the other Hierakonpolis localities. The square 10L10 data can be found in Holmes (1989a; 1989b: 291). The dominant blank technology consisted of the production of simple hard hammer struck flakes. Blades and bladelets were also manufactured; both apparently produced as part of the same reduction process. Other technologies represented in the Hierakonpolis industry are the manufacture of bifacial tools and bladelets of heat-treated flint.

Flakes struck from cores constitute the main type of debitage blank in all the Amratian assemblages. These flakes account for between 74.5 and 85.9% of all blanks (i.e. flakes, biface thinning flakes, blades, and bladelets). Non-heat-treated blades and bladelets form between 11.1 and 15.8% of the blanks. The balance is made up of small quantities of biface thinning debitage which varies from 5.2 to 7.5%, though there are none in the small HK-14 assemblage, while heat-treated blades and bladelets account for between 0.3 and 4.2% of the blanks.

The unheat-treated blade-bladelet blanks of the Amratian at Hierakonpolis are of moderate regularity and the blades in the continuum tend to be small. This particular blade-bladelet technology is quite different from the regular blade technology that was to appear with the Gerzean.

Tools form between 4.9 and 11.0% of the Amratian assemblages overall. The main two classes are burins and retouched pieces. In the assemblages with 35 or more tools where percentages have been calculated, burins form 35 to 39% of the tools while retouched pieces account for between 21 and 30% of the tools. The next most important tool classes are endscrapers and notches. Other categories of tools that are generally present in small numbers are perforators, backed pieces, glossy bladelet tools, and bifacial tools. The latter consist mainly of relatively thick and irregular miscellaneous pieces as well as a few fragments of thinner, more skilfully retouched tools. The broken bifacial tool from HK-25D is a fragment of a bifacial knife, possibly of a comma-shaped specimen.

There are a number of truncations from HK-11C and HK-29 but they do not occur at the other Amratian sites. There are several microdrills from HK-29 and a single example from HK-24A. HK-29, in fact, has the highest proportion

lithic categories	localities										
	HK-14		HK-11C		HK-29		HK-24A		HK-25D		HK-29A*
	n	%	n	%	n	%	n	%	n	%	%
flakes											
primary	15	7.0	103	8.7	189	6.9	42	5.9	12	6.6	0.9
secondary & tertiary	107	50.0	445	37.4	967	35.1	250	35.2	51	27.9	5.7
total flakes	122	57.0	548	46.1	1156	41.9	292	41.1	63	34.4	6.6
blades											
primary	2	0.9	9	0.8	18	0.7	5	0.7	1	0.5	0.2
secondary & tertiary	14	6.5	102	8.6	100	3.6	21	3.0	4	2.2	4.6
total blades	16	7.5	111	9.3	118	4.3	26	3.7	5	2.7	4.8**
bladelets											
primary	0	0.0	0	0.0	8	&	1	0.1	0	0.0	-
secondary & tertiary	4	1.9	22	1.8	128	4.6	13	1.8	5	2.7	-
total bladelets	4	1.9	22	1.8	136	4.9	14	2.0	5	2.7	-
biface thinning debitage											
primary flakes	0	0.0	3	0.3	3	0.1	0	0.0	0	0.0	1.8
secondary & tertiary flakes	0	0.0	52	4.4	76	2.9	20	2.8	4	2.2	13.6
total biface thinning	0	0.0	55	4.6	79	2.9	20	2.8	4	2.2	15.4
chips	39	18.2	249	20.9	777	28.2	256	36.0	84	45.9	67.4
chunks	8	3.7	50	4.2	144	5.2	58	8.2	9	4.9	1.2
total debris	47	22.0	299	25.1	921	33.4	314	44.2	93	50.8	68.6
cores	4	1.9	8	0.7	30	1.1	3	0.4	2	1.1	0.2
core remnants	4	1.9	4	0.3	14	0.5	0	0.0	0	0.0	0.1
core rejuvenation pieces	1	0.5	0	0.0	20	0.7	1	0.1	0	0.0	0.1
worked pebbles	0	0.0	0	0.0	6	0.2	0	0.0	0	0.0	0.0
burin spalls	0	0.0	12	1.0	38	1.4	6	0.8	2	1.1	0.5
tools	16	7.5	131	11.0	240	8.7	35	4.9	9	4.9	3.6
totals	**214**	**100.0**	**1190**	**100.1**	**2758**	**100.2**	**711**	**99.9**	**183**	**100.00**	**99.9**

Table 1. Overall lithic composition data for Predynastic sites in the Hierakonpolis region.

* Percentages only are given for HK-29A as the analysis is not yet complete. However, these percentages are based on a over 54000 lithic items and so are not expected to alter significantly upon completion of the analysis.

** At the moment the blade and bladelet data for HK-29A are combined.

tool category	localities										
	HK-14	HK-11C		HK-29-10L10		HK-29-17L13		HK-24A		HK-25D	HK-29A*
	n	n	%	n	%	n	%	n	%	n	%
endscrapers	1	6	5.0	23	5.6	24	11.0	1	2.9	0	4.6
circular scrapers	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.4
burins	3	47	39.2	145	35.1	77	35.3	12	35.3	0	24.5
notches	3	13	10.8	20	4.8	8	3.7	6	17.6	1	3.7
denticulates	0	3	2.5	13	3.1	7	3.2	0	0.0	0	1.1
perforators	1	0	0.0	10	2.4	8	3.7	2	5.9	0	1.0
microdrills	0	0	0.0	8	1.9	3	1.4	1	2.9	0	34.3
awls	0	0	0.0	0	0.0	3	1.4	0	0.0	0	0.0
truncations	0	6	5.0	19	4.6	9	4.1	0	0.0	0	5.3
backed pieces	0	2	1.7	6	1.5	4	1.8	0	0.0	1	1.9
sickle blades	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.2
glossy bladelet tools	0	1	0.8	0	0.0	14	6.4	0	0.0	1	4.5
sidescrapers	0	0	0.0	5	1.2	6	2.8	0	0.0	0	1.5
scaled pieces	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.1
transverse arrowheads	0	0	0.0	4	1.0	0	0.0	0	0.0	0	0.6
retouchted pieces	8	36	30.0	118	28.6	46	21.1	9	26.5	4	12.8
non-bifacial miscellaneous	0	3	2.5	7	1.7	2	0.9	2	5.9	0	1.1
worked tabular slabs	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.3
projectile point roughouts	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.2
stemmed & barbed points	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.2
projectile point fragments	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.1
other fine bifacial tool fragments	0	2	1.7	3	0.7	0	0.0	0	0.0	1	1.1
winged drills	0	0	0.0	14	3.4	1	0.5	0	0.0	0	0.0
crescent drills	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.1
bifacial drill/awl bit fragments	0	0	0.0	0	0.0	3	1.4	0	0.0	0	0.0
miscellaneous bifacial	0	1	0.8	18	4.4	3	1.4	1	2.9	0	0.3
total bifacial tools	0	3	2.5	35	8.5	7	3.2	1	2.9	1	1.9
unidentifieable broken tools	0	11	-	55	-	22	-	1	.	1	-
total	**16**	**131**	**100.0**	**468**	**100.0**	**240**	**100.1**	**35**	**99.9**	**9**	**99.9**

Table 2. Tool class frequency data for Predynastic sites in the Hierakonpolis region.

Note: the tool percentages are calculated excluding unidentifiable broken tools;
* Percentages only are given for HK-29A as the analysis is not yet complete. Nevertheless, these percentages are based on a total of 1921 tools.

and variety of perforating and drilling-type implements. In addition to perforators and microdrills, it has produced several winged drills (from square -10L10), and a few large awl-like tools which are not standardized enough to term *grand perçoirs* such as occur in the Nagada region (cf. Holmes 1989b: 220, 222, 229); nor are all of these HK-29 awls flaked entirely on both sides. In addition, there are three large drill tip fragments with bifacial retouch which probably come from such large irregular awls.

Another distinctive class of tool yielded by square -10L10 at HK-29 is the transverse arrowhead. Two other classes of tool are known from occasional surface finds at Late Amratian sites. These are fishtails and crescent drills.

While the Amratian lithic assemblages from Hierakonpolis have a very similar composition to each other, the assemblage from the Gerzean locality of HK-29A contrasts markedly in its proportions of the major technological categories reflecting its very specialized workshop character. The assemblage consists predominantly of the flakes and chips resulting from bifacial tool manufacture. Other distinctive technologies represented in the assemblage are the production of regular blades and bladelets of ordinary, unheat-treated flint, production of bladelets of a slightly coarse grey variety of flint which were converted into microdrills, and the manufacture of bladelets of heat-treated flint, many of which were retouched into micro-endscrapers and other heat-treated bladelet tools. Nevertheless, these technologies all exist in the Hierakonpolis area by the Late Amratian even though they were not practised on the same scale as at HK-29A; indeed the coarse grey bladelet technology is only just barely represented at HK-29.

However, it is the tools that indicate that the HK-29A assemblage, despite being very specialized, represents a continuation of the Hierakonpolis lithic industry. Aside from microdrills, the most important tool categories are burins and retouched pieces just as at the Amratian sites, and endscrapers, notches, truncations and glossy bladelet tools are the next most abundant classes. The only new elements in the assemblage seem to be circular scrapers, and stemmed and barbed projectile points. All the other classes are known from earlier contexts (a crescent was found on the surface at HK-29 and several sickle blades were found in unit ON-OE at HK-11C).

Interregional relations

Since the HK-29 assemblage is fairly representative of the Hierakonpolis industry, the comparison I made with the Nagada and Mostagedda industries several years ago still stands. The Hierakonpolis industry is distinct and shows marked differences compared with any other Predynastic lithic industry. Nevertheless, there are some points of similarity and it is these which I wish to discuss now, for while the differences imply interregional variability, the similarities suggest interregional contacts.

The most prevalent feature shared by lithic assemblages throughout the Egyptian Nile Valley from the Gerzean onwards is a regular blade technology

along with a standard set of tool classes made on its products. Once this technology had been adopted, some groups chose to make many of their ordinary tools on the regular blades, but certainly in Upper Egypt at least, there is also a set of "new" tool classes produced on the blades. These comprise sickle blades, various blade knives, regular truncations, and alternately backed pieces. My general category of blade knives corresponds to K. Schmidt's Hamamija knives type A, while his Hamamija type B knives correspond to my endscraper knives. His Badari knives correspond to my truncation knives and we both recognize the category of "el-Omari knife" (Schmidt this volume).

These tool categories, as well as other tools made on blades, seem particularly common in the Mostagedda industry of the Badari region (Holmes 1988; 1989b; 1992b). The Mostagedda industry is the northernmost Predynastic lithic tradition so far recognized in Upper Egypt. New data corroborate my suspicion that the industry is primarily, or entirely Gerzean in date (Holmes & Friedman 1989; n.d.; Holmes 1992b). As Schmidt (1993) has also observed, the Mostagedda industry seems to show some relationship with the industry of the earlier Maadi Culture of Lower Egypt (cf. Rizkana & Seeher 1988). Both are characterized by the presence of well developed blade and bladelet technologies, and it seems likely that these technologies were adopted by the Mostagedda flintknappers from their northern counterparts. However, the twisting characteristic of the blades and bladelets of the Maadi industry is not prevalent in Mostagedda industry. In addition, they may have obtained the notion of making certain tool classes from the Maadi Culture, most notably circular scrapers and micro-endscrapers, and possibly sickle blades and alternately backed pieces as well.

A very distinctive aspect of the Mostagedda industry is the presence of a heat-treated bladelet technology and a class of tool made on the resultant bladelets, which I have called, for want of a better term, "glossy bladelet tools". My initial recognition of this category was based on my study of the Badari region flint collections in the Petrie Museum of Egyptian Archaeology at University College London. These glossy bladelet tools have very small, neat retouch which was applied variously to the distal end and/or part or all of the lateral margins. Many of them are, in fact, micro-endscrapers and are similar to the micro-endscrapers from Maadi (Rizkana & Seeher 1988: 27-28, pl. 33) as well as from the southern Levant (Gilead 1984).

Although heat treatment had not been previously noted at Maadi, given the presence of small regular bladelet cores, bladelets and micro-endscrapers all resembling equivalent Upper Egyptian forms that do show definite indications of thermal alteration, I suspected that the Maadi pieces had been similarly treated. I was thus very grateful to have the opportunity at the end of "The Nile Delta in Transition" seminar in Cairo in 1990 to go to the Maadi Museum and stores and look at some of the Maadi material for myself. While I did not have time to examine every micro-endscraper, I did see a good many of the bladelets and bladelet cores. My verdict was that they had been heat-treated, and I collected some

flint nodules from the area to heat experimentally. The results were consistent with the notion that Maadi bladelet cores were indeed heat-treated (Holmes 1992b).

The Maadi Culture may well have provided Upper Egypt as a whole with the knowledge of regular blade and heat-treated bladelet manufacture, either through direct contact, or via an intermediary as represented by the Mostagedda industry. Moreover, this blade technology may ultimately derive from the Levant.

Although certain technologies and some tool classes may have been shared throughout the Egyptian Nile Valley, regional differences still emerge at a detailed attribute level. Mostagedda sickle blades, for example, are not the same as those from elsewhere in Upper Egypt (personal observations), or from Maadi (cf. Holmes 1992b). Locally made products still retain a local character.

Nevertheless, some elaborate tools must have been transported from production centres. A ripple-flaked knife from, say, Armant will be similar to a speciment from El-Gerzeh. Rhomboidal knives and fishtails are other specialized forms that would have been made in just a few places and then distributed along the Nile Valley.

I have referred to the regular blade technology and various other lithic features that occur throughout Upper Egypt, and to a certain extent in Lower Egypt, as Gerzean developments. However, the rhomboidal knives and some of the fishtails are Amratian, and sickle blades made on regular blades are known from a Late Amratian site at Hierakonpolis (HK-11C). The bifacial tools are craft items that were in demand as prestige items to be placed in graves, and are indicative of interregional exchange which was undoubtedly taking place by the end of the Amratian. The Hierakonpolis sickle blades, on the other hand, may represent the beginning of the interregional contact resulting in the adoption of the regular blade technology and standard set of blade tools as well as other items constituting a homogenizing trend.

Summary

The Hierakonpolis industry is a distinct regional tradition. During the Amratian it shows only limited indications of interregional exchange in the form of elaborate tools such as fishtails. By the Gerzean, the Hierakonpolis industry, as well as other regional industries, shows more marked evidence of interregional contact as well as exchange. Regular blade heat-treated bladelet technologies were adopted, which possibly derive from the Lower Egyptian Maadi industry. Certain tools made on the products of these technologies occur throughout Upper Egypt. Specifically, these tools comprise sickle blades, blade knives, regular truncations, alternately backed pieces, and micro-endscrapers, the latter being produced on the heat-treated bladelets.

Nevertheless, despite this homogenizing trend, these tool classes do not appear to be identical from area to area. regional differences are still apparent at an attribute level. These probably reflect the fact that local flint-workers were

responsible for the manufacture of all day-to-day flint artifacts. The similarities, on the other hand, are indicative of the substantive socio-economic and presumably political developments that were to lead to the emergence of the single cultural and political entity that we know as ancient Egyptian civilization.

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