Barbara Adams

# Imports and imitations in Predynastic funerary contexts at Hierakonpolis

### Abstract

This paper presents the archaeological evidence for a limited number of imported objects and possible local imitations of foreign material into the Hierakonpolis region of Upper Egypt in the late 4th millennium B.C. The evidence is derived both from a re-examination of the cemetery investigations of previous excavators (Green, Garstang, de Morgan and Lansing), as well as from the excavations undertaken by the American expedition under the directorship of the late Michael Hoffman in the wadi cemetery (Locality 6). The significance of extraregional contact, the evidence for which has been supplemented by excavations at the Locality 29A desert edge settlement site, is also discussed.

## Cemeteries

Relatively few of the imported objects depicted in the early publications and manuscripts concerning Hierakonpolis (Quibell & Green 1902; Garstang 1907; de Morgan 1912; Lansing 1935; Adams 1974 a, b; Adams 1987) have been re-located. These objects, particularly the pottery, have figured in discussions of foreign influences (Kroeper 1989), but the fact that they no longer seem to exist means that much of their value has been lost to modern scrutiny and analysis. No doubt the early excavators, who were not noted for their assiduous publication of these cemeteries, also overlooked other imports, which is perhaps still a potential risk today even with our scrupulous attention to detail.

One or two basalt vases with pedestals, which have not been found in a museum collection, were recorded by Green from the Naqada II (Gerzean) "painted tomb" cemetery (situated at the east edge of the present concession near the dune wadi and now obliterated by land reclamation), without context or associated objects (Quibell & Green 1902: pl. LXIV), so their relative date can not be ascertained. The footed basalt jars seems to have had a Lower Egyptian origin in Naqada I-II (Rizkana & Seeher 1988: type 1), without the Mesopotamian influence suggested earlier by Baumgartel (1955: 107). The evolved lug-

handled, barrel shaped basalt vase with basering appears in Lower and Upper Egypt in late Naqada I (Rizkana & Seeher 1984: 237-252); fragments of this type have been found in association with Naqada I-II graves at Locality 6 during the recent excavations. Kaiser thinks that the basalt used in Upper Egypt came from Lower Egypt, where there is a quarry NW of the Fayum (Kaiser 1956: 100, note 1), but Needler assumed that it came from Aswan (1984: 241, cat. no. 117).

Various black "fancy" types of pottery are also noted in the early reports and these may originally have been influenced by Lower Egyptian types (Quibell & Green 1902: pl. LXIV); fragments of a globular black jar similar to type 5b from Maadi (Rizkana & Seeher 1987: pl. XVIII, ware 1a) were found in association with the Naqada I-II graves at Locality 6. The well-known wavyledge handled jars from Palestine, which initiated the development of wavyhandled jars in Egypt, are only represented by one unlocated example from a funerary context (Quibell & Green 1902: pl. LXIX, 3). A high-looped handle cup is also depicted (Quibell & Green 1902: pl. LXIX, 2) which is a Palestinian type (Dothan 1953: 132-7) known to have been copied in Egypt (Brunton & Caton-Thompson 1928: pl. XLVI, 12, XLVII, 2, UC. 9613; Brunton 1937: pl. XXXIV, 19; both from settlement areas). If they had been located both of these would have provided interesting samples for fabric analysis. The spouted vases, which were influenced by Palestinian types, but certainly produced in Egypt, were represented in three graves in the "painted tomb" cemetery (nos. 141, 602, 98), which Green's manuscript record shows also had some graves with Nagada III types (Adams 1974b). The vase from tomb 98 made in a local ware with a polished orange coating is in the Petrie Museum of Egyptian Archaeology (Adams 1974a: cat. no. 283, UC. 15098).

John Garstang undertook excavations in 1905 on behalf of the University of Liverpool in the Predynastic desert edge cemetery which stretches from the mouth of the great wadi northwest under and beyond the so-called mud brick Fort (Garstang 1907). An analysis of his work (Adams 1987), which was concentrated in the area enclosed by the Fort, revealed that the cemetery dates to Naqada II-III and its use shifted in time from the wadi (southeast) side to the north-west. No imported pottery was noted in Garstang's manuscript record, but there were various graves with classic W-class pottery and one grave (141) contained a spouted jar (L71G) with other pottery types of Naqada IIIa2-IIIb, such as net-painted and plain cylinders jars in a rectangular grave.

Subsequent excavation by Henri de Morgan at Hierakonpolis on behalf of the Brooklyn Museum took place in 1906-7 in the same cemetery. He dug a few graves between the Fort and the Kom el-Ahmar, a red mound of burnt brick and pottery from which the site took its Arabic name, now identified as an industrial complex (Geller 1989; 1992). This investigation seems to have produced only one example of a foreign import, an N-class painted pottery bowl of Nubian origin dating to the terminal A-Group from a grave north-east of the Fort (Needler

1984: 230, cat. no. 97); the tomb also contained three wavy-handled vases and a net-painted vase which date to Naqada III.

Further excavation was undertaken by Ambrose Lansing on behalf of the Metropolitan Museum in the same cemetery in 1934 outside the Fort on the wadi side in the "bench between the Fort and the valley bed". Most of "about a hundred" excavated graves seem to date to late Naqada II judging by the illustrations in the preliminary report (Lansing 1935), as the excavation remains unpublished (Diana Craig-Patch, in press), but there are some Naqada III pottery types in the museum's collection. Due to the generosity of the Curator of the Egyptian Department, Dorothea Arnold, I am able to present the record of one grave here. Grave 106 contained the body of a child buried in a crouched position in an oval grave with the head north and face east. The contents of the grave were not lavish and consisted of two rough (straw-tempered) bowls (R3c and R33b, Fig. 1a: MMA 36.1.71, transferred to Chicago); a bulbous decorated jar (D63a, Fig. 1b: MMA 36.1.143); a deep black-topped red bowl (B6E, Fig. 1c: MMA 36.1.8, transferred to Chicago); a necklace of ring and cylinder beads in black and white stone, carnelian, "slate", crystal and possibly gold; and a shell bracelet (MMA 35.7.37). If the black-topped red vase is accepted as an "heirloom" of Naqada IIa or earlier (cf. Petrie Museum of Egyptian Archaeology UC. 4245 from Nagada Grave 1426 dated to S.D. 37), the grave contents can be dated to Nagada IId1-IId2 (S.D. 42-63).

A possibly imported vase (Fig. 1d: MMA 36.1.78, H: 9.5, D: 5.5 cm) was found in front of the child's face and seems to be one of the small, two-handled jars (amphoriskoi) of Kenyon's Proto-Urban A and B (Kenyon & Holland 1982: pl. 12.1) of the type found in graves at Jericho (Kenyon 1960: fig. 15.1 from tomb A9460) and elsewhere in Palestine (Ai, Azor) during Early Bronze Age I. Ben-Tor (1992) says that these small pottery vessels were manufactured for use as burial gifts and, apart from isolated occurrences in Egypt, where they were imported by merchants and buried with them, and possibly Asia Minor, they were restricted to Palestine. It is tempting to think that here we have the grave of a merchant's child with one or two nice pots provided by his Egyptian hosts, even if one of them was a little used! I have not examined the amphoriskos in question and no analysis has yet been undertaken, but to judge from the colour slides provided, the fabric does not seem to be Egyptian. In Petrie's corpus (Petrie 1921) the shape equates to F85b, which he found at Nagada (Petrie & Quibell 1895: pl. XXVII). There is only one grave from Naqada (472) in Baumgartel's (1970) register of the graves which contained a pot of this shape and this is now in the Ashmolean Museum, Oxford (Ashmolean 95.677). Joan Crowfoot-Payne (1993) cat. no. 430) identifies this juglet as a red polished Nile silt ware (P79), so it is not an imported piece; the shape was obviously copied in Egypt.

The recent and continuing controlled excavation and research at Hierakonpolis directed by the late Michael Allen Hoffman has produced further examples of extra-regional imports and foreign influences both from the settlement and

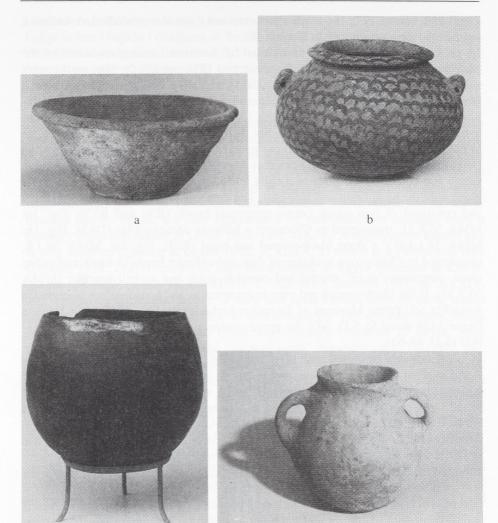


Fig. 1. Hierakonpolis pottery from Grave 106 excavated by Lansing in 1934.

d

a. R33b, MMA 36.1.71

С

- b. D63a, MMA 36.143 (now in Chicago)
- c. B6E, MMA 36.1.8.(now in Chicago)
- d. "F85b", MMA 36.1.78; Rogers Fund 1936, Courtesy of the Metropolitan Museum of Art, New York.

cemetery areas. Between 1979-85, the Hierakonpolis expedition undertook excavations in the large cemetery (L: 400 m), Locality 6, in the Wadi Abul Suffian (great wadi), over 2 km from the desert edge (Hoffman 1982). The cemetery had been found and summarily investigated by Green and then Garstang, robbed either before or after him, and then gone over by Lansing (Quibell & Green 1902; Garstang 1907; Lansing 1935). At the up wadi, south-west end a large rectangular tomb, no. 2 (L: 6.5, W: 2.1, D: 3.50 m), cut into the sandstone bedrock, was located by previous investigators and re-cleared by the expedition in 1979-80; pottery sherd gleanings suggest a Naqada III date, but there was much admixture from the earlier surrounding graves. Adjacent to Tomb 2 on the north-west side a number of these smaller rectangular graves were excavated in 1980. Tombs 3-9, although disturbed, contained a quantity of reconstructible pottery which enable them to be dated to Nagada Ic-IIa, the Amratian-Gerzean transitional phase. One of the vessels from Tomb 3 is a straw tempered, brown coated, vertically burnished jar with shape parallels among Nubian types (Reisner 1910: pl. 60a, 19); part of a similarly burnished black jar came from Tomb 6.

At the north-east end of the cemetery three large, mud brick lined, rectangular tombs have been excavated. The largest, Tomb 1 (L: 6.5, W: 3.5 m), also robbed in ancient and modern times, was cleared in 1979. Once again, the pottery recovered from this tomb did not represent the whole original repertoire, but there were enough types to indicate a Naqada III (Protodynastic) - transitional Dynasty I date. There was one stand with circular perforations cut out of its base, and these and other fancy stands and incense burners with cut-out and impressed designs were perhaps ultimately derived from prototypes which are known from the Ghassulian culture of Palestine, or even from as far as Uruk (Amiran 1969: 23-25, 47-8).

In 1982 and 1985 two more tombs were excavated in the north-east of the cemetery. Tomb 10 (L: 4.70, W: 1.90 m), which is adjacent to Tomb 1, was thoroughly robbed and, as in Tombs 1 and 2, only fragmentary pottery vessels were recovered, mixed with some earlier Predynastic sherds; these included cut-out and impressed stands in straw tempered ware. This limited sample again suggests a Naqada III (Protodynastic) date.

Excavation of the third tomb, no. 11 (L: 5.0, W: 2.40 m), produced the greatest number of artifacts from both in and around the looted crater, although in a fragmentary condition, and a considerable amount of pottery reconstruction has now taken place (Fig. 2). One or two of the types from these tombs, especially Tomb 1, such as the streak-burnished, orange-slipped bowls and dishes, the black-topped orange "hes" jars, the "granary" jars and the large cylinders or stands are known in Dynasty I. The original absence of certain other types which have been taken as chronological markers associated with Narmer, such as the degenerated wavy-line, cord-patterned cylinder type (W71), can not be assumed from such a pillaged context. The same observation can be made for large storage vessels of the type that sometimes have *serekhs* or potmarks on them (Kaiser &

Dreyer 1982: Abb. 14; Kroeper 1986/7; van den Brink 1988: figs. 12-15; van den Brink 1992); a sherd with the edge of a *serekh* was found in association with Tomb 11. In addition a mud sealing was found in Tomb 10 with the same sign group which appears on "Weinkruge" vessels from the Delta, Abu Roash, Saqqara and Abydos, dated to the time of Den (van den Brink 1992: 1). It is most likely that these tombs pre-date Hor-Aha and perhaps even Narmer, and that Tomb 11 (S.D. 74-81) and Tomb 10 (S.D. 73-81) pre-date Tomb 1 (S.D. 77-81).

There are some particularly interesting examples among the reconstructed pots from Tomb 11, which may have a bearing on international links. These include the thin walled, tall, late forms of wavy-handled jars (Petrie 1953: pl. VIII, 44f), which have a sandy pink fabric coated with a vertically streak-burnished cream slip. Eliezer Oren reported finding similar jars in his north Sinai survey, with and without wavy handles, and in his opinion they were locally made there, but of hybrid Egyptian/Canaanite manufacture (Oren 1989). Unfortunately, a small jug which has a thickening adjacent to the hole in the body wall indicating that a handle was once attached there, could not be completely restored. From the suggested reconstruction, the nearest parallels that can be located in the Palestinian repertoire seem to be the two juglets from the Proto-Urban (=Early Bronze Age I) burial caves at Azor (Ben-Tor 1975: pls. 9-10, fig. 6, 20-21). The fabric of the Hierakonpolis example is the compact pink of Hk ware type 5A (i.e. crushed calcium carbonate tempered Nile silt), but the surface is covered with an unusual red wash and there are external manufacturing marks above the base. Although not a Palestinian pot, it is almost certainly a copy of one.

Before leaving the discussion of pottery from Tomb 11, it is worth noting two anthropomorphic artifacts. The first is a pottery sculpture on a straw tempered Nile silt vessel of hand-supported, bulbous breasts beneath a crude ledge handle copying a Palestinian type. Although "breast-pots" are not unknown in later assemblages, nothing similar is known from the Predynastic. The only other anthropomorphic representation which came from the fill of Tomb 11 is a pottery figurine, broken below the hips. The figure wears a penis sheath curled back to the waist, reminiscent of figures from the Main Deposit (Quibell 1900: pl. XII, 5 & 6), with a bird-like head and a double bagged head-dress with its hands tied behind its back in the classic prisoner mode. These figures could perhaps be construed as satirical comments on the politics of the time.

The other artifacts recovered from the excavation and sieving of Tomb 11 are also rich. The extra-regional raw materials represented were gold, garnet and turquoise, mostly in the form of beads. Both gold and garnet occur in the Eastern Desert and it is possible that gold was imported from the A-Group; a gold mining region leads off the Wadi Alaqi in Lower Nubia. The chief source of turquoise was the Sinai peninsula, where garnet can also be mined. Lapis lazuli beads, a fine lapis shell and two lapis fly amulets were sieved from the tomb. Lapis lazuli is assumed to have come from Badakshan in the north-east corner of Afghanistan (Lucas & Harris 1962), and it does not occur in Western Asia; therefore any

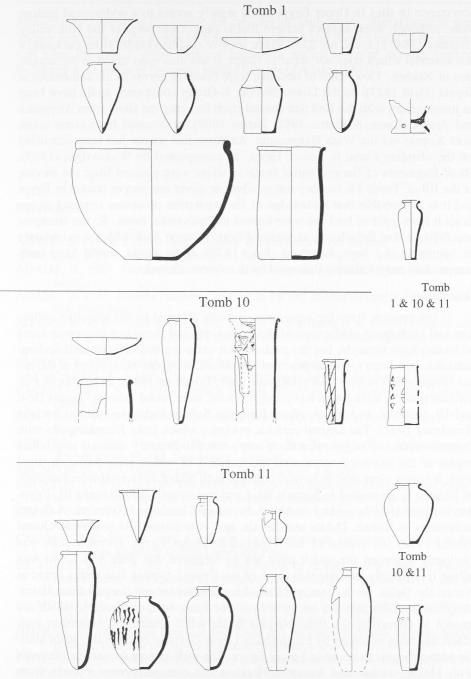


Fig. 2. Hierakonpolis. Sketch of pottery types from Locality 6, Tombs 1, 10 and 11.

occurrence in sites in Upper Egypt could signify access to a widespread trading route, although some authors believe that it came from west of the Nile valley (Needler 1984: 311, cat. no. 234). There are five obsidian blades from the tomb, a raw material which does not occur in Egypt; it has also been found in the temple area of Nekhen. Two flakes of obsidian were found in graves in the cemeteries at Seyala (Firth 1927), so the Lower Nubian A-Group could once again have been an intermediary with the Red Sea coastal trade bringing the stone from Abyssinia and Arabia (Lucas & Harris 1962; Zarins 1989), or it could have come south from Koptos via the Wadi Hammamat. An Anatolian source has been identified for the obsidian found in Lower Egypt, as championed by Wainwright (1927). Small fragments of flanged barrel beads in silver were gleaned from the sieving of the fill of Tomb 11. Neither native silver or silver ore proper occurs in Egypt and it is improbable that knowledge of the separation processes required to exstract it from gold or lead ore were known in Predynastic times. So the strongest possibility is that the silver was obtained from Western Asia, which was certainly its source in the New Kingdom (Prag 1978). It no doubt would have been esteemed as more valuable than gold by the tomb's occupant.

#### Discussion

Information from the cemeteries is badly affected by the selective collection and inadequate publication of the early work and the effect that generations of looters have wrought, but the evidence for extra-regional contact at Hierakonpolis has now been supplemented and confirmed by recent excavations at the ritual complex of Locality 29A (Hoffman 1987; Friedman 1990). Examples of Palestinian pottery, including a wavy-ledge handle, were found there in Naqada IIc-d and III contexts, as well as others from the Saharo-Sudanese cultural horizon (Friedman 1992). The limited ceramic evidence which links Hierakonpolis with Palestine seems to suggest that there was a trend in funerary contexts to produce copies of the imported containers, the originals of which were found in ritual sites. It seems clear that reciprocal contacts with Nubia were established as early as Nagada Ic, expanded in Nagada IIb-c and maintained until Nagada III. Egyptian Nagada IId-IIIa pottery has been found in Classic and Terminal A-Group cemeteries at Kuban, Dakka and Seyala, and Palestinian EBI pottery at Qustul (Smith 1992). As capital of late Predynastic Upper Egypt, Hierakonpolis was obviously a pivotal site and it must not be forgotten that trade was a two way affair. It is entirely possible that some of the Upper Egyptian fine wares found in Nubia, the Delta, north Sinai and Palestine could have been derived from Hierakonpolis from Naqada IIa on. A ubiquity of straw tempered wares, which are known at Hierakonpolis from Naqada Ic-IIa when settlement expansion took place, has been observed by Friedman in Upper Egypt in Naqada IIc, when similar pottery begins to occur in Lower Egypt. The well-known decorative elements with Mesopotamian and Susan devices on the commemorative objects from Nekhen, often carved onto Nubian ivory, which had an influence on kingship iconography, illustrate the continued process of unification. Hierakonpolis was known anciently as the cradle of Egyptian kingship and it continued to be important after Dynasty I, when Nekhen became a walled town of densely packed buildings with an Early Dynastic palace complex (Adams 1995).

# References

ADAMS, B. 1974 a. Ancient Hierakonpolis. Warminster: Aris & Phillips

ADAMS, B. 1974 b. Ancient Hierakonpolis Supplement. Warminster: Aris & Phillips.

ADAMS, B. 1987. The Fort Cemetery at Hierakonpolis. London: Kegan Paul International.

ADAMS, B. 1995. Ancient Nekhen: Garstang in the city of Hierakonpolis. New Malden: SIA Publishing.

ADAMS, B. & R. FRIEDMAN. 1992. Imports and Influences in the Predynastic and Protodynastic Settlement and Funerary Assemblages at Hierakonpolis. In: van den Brink (ed.): 317-338.

AMIRAN, R. 1969. Ancient Pottery of the Holy Land. Jerusalem.

BAUMGARTEL, E. J. 1955. The Cultures of Prehistoric Egypt. I. 2nd rev. ed. London.

BAUMGARTEL, E. J. 1970. Petrie's Naqada Excavation: A Supplement. London: Quaritch.

BEN-TOR, A. 1975. Two Burial Caves of the Proto-Urban Period at Azor. Qedem I: 1-54. Jerusalem.

BEN-TOR, A. 1992. The Early Bronze Age. In: Ben-Tor (ed.), The Archaeology of Ancient Israel: 81-125. New Haven - London.

BRUNTON, G. 1937. Mostagedda and the Tasian Culture. London.

BRUNTON, G. & G. CATON-THOMPSON, 1928. The Badarian Civilization and Predynastic Remains near Badari. British School of Archaeology in Egypt 46, London.

CRAIG-PATCH, D. In press. Lansings Excavation of the Predynastic Cemetery at Hierakonpolis.

CROWFOOT-PAYNE, J. 1993. Catalogue of the Predynastic Egyptian Collection in the Ashmolean Museum. Oxford University Press.

DE MIROSCHEDJI, P. (ed.). 1989. L' urbanisation de la Palestine à l' âge du Bronze ancien, Actes du Colloque d' Emmaus, 20-25 octobre 1986, Jerusalem. British Archaeological Reports International Series 527 (i).

DE MORGAN, H. 1912. Report on Excavations made in Upper Egypt during the Winter 1907-8. Annales du Service des Aniquités de l'Egypte 12: 25-38.

DOTHAN, M. 1953. High Loop-handled Cups and the Early Relations between Mesopotamia, Palestine and Egypt. Palestine Exploration Quaterly: 132-7.

FIRTH, C. M. 1927. Archaeological Survey of Nubia: Report for 1910-1911. Cairo.

FRIEDMAN, R. 1990. Hierakonpolis, Locality 29A. Bulletin de Liason 14: 18-25.

FRIEDMAN, R. 1992. Pebbles, Pots and Petroglyphs: Excavations at Hk64. In: Friedman & Adams (eds): 99-106.

- FRIEDMAN, R. & B. ADAMS (eds). 1992. The Followers of Horus: Studies Dedicated to Michael Allen Hoffman 1944-1990. Oxford: Egyptian Studies Association Publication No. 2, Oxbow Press.
- GARSTANG, J. 1907. Excavations at Hierakonpolis, at Esna and in Nubia. Annales du Service des Antiquités de l'Egypte 8: 132-148.
- GELLER, J. R. 1989. Recent Excavations at Hierakonpolis and their Relevance to Predynastic Pyrotechnology and Settlement. Cahier de recherches de l'Institut de Papyrologie et d' Egyptologie de Lille 11: 41-52.
- GELLER, J. R. 1992. From Prehistory to History: Beer in Egypt. In: Friedman & Adams (eds): 19-26.
- HOFFMAN, M. A. (ed.). 1982. The Predynastic of Hierakonpolis An Interim Monograph.: Egyptian Studies Association Publication No. 1. Giza Macomb, Illinois.
- HOFFMAN, M. A. 1987. A Final Report to the National Endowment to the Humanities on Predynastic Research at Hierakonpolis, 1985-6. Earth Sciences and Resources Institute, University of South Carolina.
- KAISER, W. 1956. Stand und Probleme der ägyptischen Vorgeschichtsforschung. Zeitschrift für Ägyptische Spräche und Altertumskunde 81: 87-109.
- KAISER, W. & G. DREYER. 1982. Umm el Qa'ab: Nachuntersuchungen im frühzeitlichen Königsfriedhof, 2. Vorbericht. Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo 38: 211-269.
- KENYON, K. M. 1960. Excavations at Jericho, I: The Tombs Excavated in 1952-4. British School of Archaeology.
- KENYON, K. M. & T. A. HOLLAND. 1982. Excavations at Jericho IV: The pottery types series and other finds. British School of Archaeology.
- KROEPER, K. 1989. Palestinian Ceramic Imports in Pre- and Protohistoric Egypt. In: de Miroschedji (ed.): 407-422.
- KROEPER, K. 1986/87. The ceramic of the Pre/Early Dynastic cemetery of Minshat Abu Omar. Symposium on ancient Egyptian pottery, 4-6 September 1986, N.Y.C. Bulletin of the Egyptological Seminar 8: 73-94
- LANSING, A. 1935. The Museum's Excavations at Hierakonpolis. Bulletin of the Metropolitan Museum of Fine Art Supplement: 37-45.
- LUCAS, A. & J. R. HARRIS.1962. Ancient Egyptian Materials and Industries. 4th edition, London.
- NEEDLER, W. 1984. Predynastic and Archaic Egypt in the Brooklyn Museum. Brooklyn.
- OREN, E. 1989. Early Bronze Age Settlement in Northern Sinai: A Model for Egypto-Canaanite Interconnections. In: de Miroschedji (ed. ): 389-405.
- PETRIE, W. M. F. 1921. Corpus of Prehistoric Pottery and Palettes. British School of Archaeology in Egypt 32. London.
- PETRIE, W. M. F. 1953. Corpus of Protodynastic Pottery. British School of Archaeology in Egypt 66B. London.
- PETRIE, W. M. F. & J. E. Quibell, 1895. Naqada and Ballas 1895. British School of Archaeology in Egypt 1. London.
- PRAG, K. 1978. Silver in the Levant in the Fourth Millennium B.C. In: P. R. S. Moorey & P. J. Parr (eds), Archaeology in the Levant, Essays for Kathleen Kenyon. Warminster: Aris & Phillips.
- QUIBELL, J. E. 1900. Hierakonpolis I. Egyptian Research Account 4.
- QUIBELL, J. E. & F. W. GREEN. 1902. Hierakonpolis II. Egyptian Research Account 5. London.
- REISNER, G. 1910. Archaeological Survey of Nubia: Report for 1907-8. Cairo.
- RIZKANA, I. & J. SEEHER. 1984. New Light on the Relation of Maadi to the Upper Egyptian Cultural Sequence. Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo 40: 237-252.

- RIZKANA, I. & J. SEEHER. 1987. Maadi I: The Pottery of the Predynastic Settlement. Archäologische Veröffentlichungen 64. Philipp von Zabern, Mainz am Rhein.
- RIZKANA, I. & J. SEEHER. 1988. Maadi II: The Lithic Industries of the Predynastic Settlement. Archäologische Veröffentlichungen 65. Philipp von Zabern, Mainz.
- SMITH, H. S. 1992. The Development of the 'A-Group' Culture in Northern Lower Nubia. In: W. V. Davies (ed.), Egypt and Africa: Nubia from Prehistory to Islam: 92-111. London.
- VAN DEN BRINK, E. C. M. 1988. Amsterdam University Survey Expedition to the Northeastern Nile Delta: Tell Ibrahim Awad. In: van den Brink (ed.): 76-110.
- VAN DEN BRINK, E. C. M. 1992. Corpus and Numerical Evaluation of the "Thinite" Potmarks. In: Friedman & Adams (eds): 267-298.
- VAN DEN BRINK, E. C. M. (ed. ). 1988. The Archaeology of the Nile Delta, Problems and Priorities. Cairo: Netherlands Archaeological Institute.
- WAINWRIGHT, G. 1927. Obsidian. Ancient Egypt: 77-93.
- ZARINS, J. 1989. Ancient Egypt and the Red Sea Trade: the Case for Obsidian in the Predynastic and Archaic Periods. In: A. Leonard, Jr. & B. B. Williams (eds), Essays in Ancient Oriental Civilization. No. 47: 340-368.