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La chronologie relative de la Basse Vallée du Nil jusqu'au 3<sup>e</sup> millénaire BC  
(coord. E.C. Köhler)

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#### LISTE DES AUTEURS

**Nathalie BUCHEZ**  
Institut national de recherches  
archéologiques  
518 rue Saint Fuscien  
80090 Amiens (France)  
nathalie.buchez@inrap.fr

**Maria Carmela GATTO**  
Department of Near Eastern  
Languages and Civilizations  
Yale University  
PoBox 208236  
New Haven CT 06520-8236  
(États-Unis)  
maria.gatto@yale.edu

**Rita HARTMANN**  
German Institute of  
Archaeology, Cairo  
31, Sh. Abu el-Feda  
11211 Zamalek, Le Caire (Égypte)  
ri.hartmann@gmx.de

**Amber HOOD**  
Merton College  
Merton Street  
Oxford, OX1 4JD  
(Royaume Uni)  
amber.hood@merton.ox.ac.uk

**Stan HENDRICKX**  
Sint-Jansstraat 44  
B-3118 Werchter (Belgique)  
s.hendrickx@pandora.be

**Mariusz JUCHA**  
Institute of Archaeology  
Jagiellonian University  
Ul. Gołębia 11  
31-007 Cracovie (Pologne)  
jucha\_m@hotmail.com

**E. Christiana KÖHLER**  
Institut für Ägyptologie  
Universität Wien, Frankgasse 1  
A-1090 Vienne (Autriche)  
e.christiana.koehler@univie.ac.at

**Agnieszka MACZYŃSKA**  
Poznań Archaeological Museum  
ul. Wodna 27  
61-781 Poznań (Pologne)  
agnieszka.maczynska@  
muzarp.poznan.pl

**Béatrix MIDANT-REYNES**  
Institut Français d'Archéologie  
Orientale  
37 El Cheikh Aly Yussef Street  
Munira, Qasr el Ainy  
BP 11562 Le Caire (Égypte)  
bmidantreynes@ifao.egnet.net

**Noriyuki SHIRAI**  
Faculty of Archaeology  
Leiden University  
PO. Box 9515, 2300 RA Leyde  
(Pays-Bas)  
n.shirai@arch.leidenuniv.nl

**Jane SMYTHE**  
The American Research Center  
2 Midan Simón Bolívar  
Garden City  
Le Caire 11461 (Égypte)  
jsmythe@arce.org

**Yann TRISTANT**  
Macquarie University  
Department of Ancient History  
NSW2109 (Australie)  
yann.tristant@mq.edu.au

**Wouter CLAES**  
Musées Royaux d'Art et d'Histoire  
Parc du Cinquantenaire, 10  
1000 Bruxelles (Belgique)  
w.claes@kmg-mrah.be

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# Settlement Sites in the Nile Delta

Mariusz Jucha, *Institute of Archaeology, Jagiellonian University, Cracow*  
Agnieszka Mączyńska, *Poznań Archaeological Museum, Poznań*

*The 4<sup>th</sup> millennium and the beginning of the 3<sup>rd</sup> millennium B.C. is a time of significant transformations in the Nile Delta. In the beginning of that period, possibly for the first time, the whole Nile Delta was settled by groups of people of the Lower Egyptian Culture. Another change is connected with the appearance of Naqadians in the north, which influenced local societies of the Lower Egyptian culture. As a result, a new unit that integrated elements of both cultural complexes arose. The process of state formation, leading to the foundation of a unified Egyptian state under the reign of king Narmer is the last important political, social and economic change of the Nile Delta in this period. These three changes have been recognised on almost all Delta settlement sites known today and are well represented among pottery, flint assemblages and in the architecture of the sites. In this paper we have tried to compare published materials from several Nile Delta site dated to the 4<sup>th</sup> millennium and the beginning of the 3<sup>rd</sup> millennium B.C. to show how these three transformations are visible in archaeological records.*

*Le 4<sup>e</sup> millénaire et le début du 3<sup>e</sup> millénaire correspondent à une période de transformations importantes dans le delta du Nil. C'est durant cette époque que la région est entièrement habitée, sans doute pour la première fois, par des groupes rattachés aux cultures de Basse Égypte. Une autre transformation est liée à l'apparition de traditions nagadiennes dans le nord du pays, qui ont définitivement influencé les sociétés autochtones, aboutissant au développement d'un nouveau complexe culturel intégrant les composantes des deux entités. Le processus de formation étatique, qui conduit à la fondation d'un État unifié sous le règne du roi Narmer, est la dernière mais la plus importante des mutations politiques, sociales et économiques qui marquent le Delta durant cette période. Ces transformations sont connues sur la plupart des sites d'habitat de la région découverts jusqu'à présent et sont bien attestées dans le matériel céramique et lithique mais aussi dans l'architecture des localités étudiées. Dans cet article nous comparons les données publiées pour la plupart des sites du 4<sup>e</sup> et du début du 3<sup>e</sup> millénaire afin de mettre en évidence ces trois phases de changements bien visibles dans les données archéologiques.*

## Introduction

The 4<sup>th</sup> millennium and the beginning of the 3<sup>rd</sup> millennium B.C. is a time of significant transformations in the Nile Delta. Following a long period of scarce occupation by early farming societies in the Fayum Oasis, Mermide Beni Salame and Wadi Hof in the Neolithic Period, the whole Nile Delta was, possibly for the first time, settled by groups of people described by some archaeologists as the Lower Egyptian Culture. It was a moment when important cultural, social and political processes began. The Lower Egyptian-Naqada transition is often considered the first important change. As a result, a new unit that integrated elements of both cultural complexes arose. Another factor of transformation is the process of state formation, leading to the foundation of a unified Egyptian state under the reign of king, Narmer. These changes have been recognised on almost all Delta settlement sites known today and are well represented among pottery, flint assemblages and in the architecture of the sites.

## Settlements of the Lower Egyptian Culture

The Lower Egyptian culture occupied northern Egypt between 3,900 and 3,300/3,200 B.C. (Ciałowicz 2001: 38, tab. 3). This cultural complex possibly covered nearly all of Lower Egypt. Today, a total of 21 sites of Lower Egyptian Culture have been identified (Mączyńska 2011, tab.1). However, most of these settlements are located in the central and eastern part of Lower Egypt. The western part of Lower Egypt still remains a mystery for researchers, thus requiring further archaeological survey.

The chronological division of the Lower Egyptian Culture involves three phases: early, middle and late with the Lower Egyptian-Naqada transition taking place during the last of these phases (Mączyńska 2011, tab.2).

The sites that are currently known do not allow us to say more about the precise settlement pattern of the Lower Egyptian Culture. We are unable to distinguish a centralised region as it seems probable that the sites operated independently. There were probably several independent centres, such as Maadi, Buto or Tell el-Farkha, all developing under specific local conditions. A settlement unit of the Lower Egyptian Culture most likely consisted of a settlement and its nearby cemetery.

The oldest known settlement site of this culture was discovered at Maadi (Rizkana & Seeher 1987; Hartung 2004: 337-356), with the cemeteries of Maadi and Wadi Digla recorded nearby (Rizkana & Seeher 1990). During the same period, the settlement in Buto was founded in the Northern Delta (von der Way 1997); however, the location of its cemetery is still unknown. For the cemetery in Heliopolis the situation is reverse as we do not know the location of its settlement (Debono & Mortensen 1988).

Corresponding to Naqada IIC in the south, the settlement in Maadi was abandoned (Faltings 1998: 372-373), yet new settlements appeared in other parts of the Delta at Mendes, Tell el-Farkha, Tell el-Iswid (South), Tell Ibrahim Awad and Sa el-Hagar/Sais (Chłodnicki & Ciałowicz: 2002a 63-118; 2004: 47-73; 2006: 71-128; van den Brink 1989: 55-108; 1992: 43-68; Friedman 1992: 199-206; Mączyńska 2003: 213-225; 2011: 884-886; Midant-Reynes 2007: 272-275; Tristant *et al.* 2008: 171-173; Wilson 2006: 75-126). The author is aware of only two cemeteries that were used by Lower Egyptians in this period at Minshat Abu Omar and Kom el-Khilgan<sup>1</sup> (Buchež & Midant-Reynes 2007: 43-70; 2011: 887; Kroeper & Wildung 1994; 2000; Midant-Reynes *et al.* 2003a:

1. According to N. Buchež and B. Midant-Reynes (*in press*) there is a time-lag between the earliest burials of Minshat Abu Omar and the burials of Kom el-Khilgan, which either reflects the chronological difference between these two sites or the difference in a site hierarchy.

55-64; 2004: 465-486). Although a settlement in Minshat Abu Omar was identified (Krzyżaniak 1989: 267-285; 1992: 151-156; 1993: 321-325), only the cemetery was excavated. Whereas the cemetery in Minshat Abu Omar was used continuously to bury the dead until the Early Dynastic Period, there appears to be a hiatus in the cemetery at Kom el-Khilgan during the Naqada IID2 Period with burials appeared again in Naqada IIIA.

Lower Egyptian society was not an isolated entity in that it maintained contacts with the Naqada Culture in the south and the late Chalcolithic/Early Bronze I society in the Southern Levant. Upper Egyptian and Southern Levantine imports have been recorded at the Lower Egyptian sites of Maadi, Wadi Digla, Heliopolis, Tell el-Farkha, Buto, Minshat Abu Omar, confirming the exchange of goods in the form of reciprocal trade (Maćczyńska 2004a: 435-437; 2006; 2008: 763-779).

**Tab. 1**  
Chronology of the  
Delta settlement sites.

PERIODS		KAISER	HENDRICKX	MAADI	WADI DIGLA	HELIOPOLIS	SAIS	BUTO	TELL EL-FARKHA	TELL IBRAHIM AWAD	TELL EL-ISWID	MENDES	TELL EL-FARKHA CEMETERY	KOM EL-KHILGAN	MINSHAT ABU OMAR	
EARLY DYNASTIC	DYNASTY 2		III D					V	6c	4						
	DYNASTY 1		III c3 III C2					IV-V	6b	5a	STR VIII-IX	1	GR 2		IV	
PROTODYNASTIC	NAQAADA III		III c2 III C1					IV	6a	5b (III)			GR 1		IV -?-	
			III b2 III B					III f	5		B				3c III 3b	
			III b1 III A2					III d-e	4	6 (II)	STR VII	2			3a III	
			III a2 III A1											3		II 2
			III a1 II D2					III b-c III a	3 2	?	?	3				1b II
			II d1 II D1													
PREDYNASTIC	LOWER EGYPTIAN CULTURE	MIDDLE	NAQAADA II	II c II C				III	II b 1	7(I)	A STR I-III					
			NAQAADA I	II b II B II A		II			II a							
		EARLY	II a II C			I			I b							
			I a-c I B I A						I a						1	

\* Kroeper 1988 and compared with other sites.

\*\* Kroeper & Wildung 1994; 2000.



The Naqada IID2 Period is often related to the Lower Egyptian-Naqada transition and the presence of Upper Egyptian communities migrating to northern Egypt. It has been suggested that these new arrivals from the south brought with them innovations such as building techniques and pottery production. For many years mud-brick architecture and new jar forms (e.g. Petrie's R76, R81 & R84-R86) were treated as chronological markers of this transition (Jucha 2005: 64; Mączyńska 2004a: 438). However, the latest research at Tell el-Farkha shows that although these innovations may have originated in Upper Egypt, they had been known to Lower Egyptians since the Naqada IIC-IID1 Period (Chłodnicki & Ciałowicz 2006: 76-77; Zdziebłowski 2008: 115). An explanation for this claim rests with the special character of the settlement at Tell el-Farkha. That it was situated on what was most probably the trade route with the Levant, it would have had some part in the exchange with that region (Mączyńska 2006: 946-955). A large brewery centre and a large building dated to NIIC-D1, both unique to northern Egypt for this period, could furthermore indicate the special position of the site in the settlement pattern of the Lower Egyptian Culture (Chłodnicki & Ciałowicz 2002b 68-70; 2006: 72-77; Ciałowicz 2001: 96-98; 2006: 918-920). Taking into consideration the data presented above, we cannot exclude that contact existed between Naqadans and the inhabitants of Tell el-Farkha during the Naqada IIC-D1 Period, which is earlier than previously supposed. Lower Egyptian-Naqada transition was also recorded at other sites such as the settlement in Buto and the cemetery in Minshat Abu Omar. On the basis of the finds made, we are able to conclude that contact and interaction between these two complexes resulted in a new unit, combining elements of the Lower Egyptian and the Naqada cultures. There is no cultural discontinuity in Lower Egypt for this period. In the beginning of the Naqada III Period, occupation continued at most of the sites, which were already settled in the previous period. This cultural continuity is also well observed in the pottery, flint production and architecture.

## Predynastic Period – Lower Egyptian Culture

The differences among three phases of the Lower Egyptian Culture are visible mostly among pottery; with some very small differences noticeable in the flint assemblages. However, no significant changes can be seen in the cultural complex with regard to settlement patterns, economy and social system/burial customs (Mączyńska 2011: 884-888).

The technology of Lower Egyptian pottery did not change significantly during these three phases. Local Nile clay tempered with fine to medium sand and medium to coarse straw (R2-ware) is the most popular material used during pottery production. Additionally, the most characteristic for this complex is very fine and long organic temper with the presence of hair, which was registered mostly on vessels belonging to P-ware found at Tell el-Farkha 1-2, Buto I-IIIa and Mendes Area B Unit 2-3 (Friedman 1992: 203; Mączyńska 2003: 216-217; Köhler 1992: 16-17). Pottery made of marl clay represents only of a very small part of ceramic assemblages and was imported from the south (Mączyńska 2003: 216-217; 2011: 889; von der Way 1997: 104-105).

The most characteristic types for the oldest phase are jars on a raised base and ovoid jars with a pointed base such as those found at Maadi, Wadi Digla and Heliopolis (**tab. 2:1**) (Debono & Mortensen 1988: 27-28; Rizkana & Seeher 1987: 34-36; 1990: 79); elongated barrel-shaped jars found at Maadi, Wadi Digla, Heliopolis and Kom el Khilgan 1 (**tab. 2:2**) (Buechez & Midant-Reynes



NAQADA	23	24	25	26	27	28	29	30	31	32	33
	III D										
	III C2	—					—	—	—		—
	III C1	—	—	—	—	—					
III B		—	—	—							
NAQADA	12	13	14	15	16	17	18	19	20	21	22
	III D										—
	III C2										—
	III C1						—	—	—	—	—
III B		—	—	—	—	—	—	—	—	—	—
III A2	—	—	—	—	—	—	—	—	—	—	
III A1		—									
II D2		—									
NAQADA	1	2	3	4	5	6	7	8	9	10	11
	III C1							—		—	
	III B							—		—	
	III A2							—	—	—	
	III A1				—	—	—	—	—	—	—
	II D2			—	—	—	—	—	—	—	—
	II D1			—							—
	II C										
	II B	—	—			—	—	—			
II A											
I C											
I B	—	—	—	—							
I A											

**Tab. 2**  
The main pottery  
chronological  
markers for  
Lower Egyptian  
and Naqada  
cultures

2007: 45-47; Debono & Mortensen 1988: 25-26; Rizkana & Seeher 1987: 36; 1990: 81-84); ovoid and globular jars found at Maadi, Wadi Digla and Kom el Khilgan 1 (**tab. 2:3**) (Buechez & Midant-Reynes 2007: 45-47; Rizkana & Seeher 1987: 37; 1990: 85-87); bowls with a T-shaped profile found at Buto I (**tab. 2:4**) (von der Way 1997: 93) and large storage jars found at Maadi and Buto I (Rizkana & Seeher 1987: 37-38; von der Way 1997: 91). Black topped jars, both imported and locally made found at Maadi (Rizkana & Seeher 1987: 51-52), bowls with a pie-crust rim found at Buto Ia and Mendes<sup>2</sup> (Friedman 1992: 204; von der Way 1997: 102) and knob decoration found at Buto Ia (von der Way 1997: 102) were registered only in layers dated to this period. The last two decoration elements were most probably local adaptations from South Levantine vessels (Faltings 2002: 166).

The flint industry of this phase is characterized by a domination of blades, bladelettes and the production of so-called “twisted blades” found at Maadi and Buto I (Schmidt 1992a: 32-34). The microretouche of the “Ouchtata” type is also common (Schmidt 1993: 269-277). Large sickle blades should also be mentioned among tools from Maadi (Rizkana & Seeher 1985: 249, fig. 9:5).

Cultural markers of the middle phase of the Lower Egyptian Culture include lemon-shaped jars such as those from Tell el-Farkha 1, Kom el Khilgan 2, Minshat Abu Omar I, Buto II and Tell el-Iswid A (**tab. 2:5**) (Buechez & Midant-Reynes 2007: 48, fig. 6; van den Brink 1989: 67, fig. 9:1-4; Kroeper & Wildung 1994: 9, 22, 26; Mączyńska 2003: 219, fig. 5:12-13; 2011: 892, fig.2:3,7-10, 13-14; von der Way 1997: 89, Taf. 1), and round jars with a rim slightly inverted to the exterior from Tell el-Farkha 1 and Tell el-Iswid A (van den Brink 1989: 67, fig. 8a; Mączyńska 2003: 217-128). Among the open forms, most dominant are small bowls with a simple rim, a rounded rim or a rim formed into a small external lip found at Tell el-Farkha 1, Tell el-Iswid A and Buto II (van den Brink 1989: 68, fig. 9: 5-10; Mączyńska 2003: 219, fig. 5:8, 14; von der Way 1997: 92-93, Taf. 22-24, 28). Also recorded are two decoration patterns consisting of incised or dotted zigzagging on jars and impressed semi-circles on bowls found at Tell el-Farkha 1, Buto II, Tell el-Iswid A, Tell Ibrahim Awad 7 and Sais III (**tab. 2:6-7**) (van den Brink 1989: 70, fig. 10, 11, 12: 6-8, 18-19; 1992: 54, fig. 10:1-6; Mączyńska 2003: 217-218, fig. 5:1-6; von der Way 1997: 96-98, Taf. 4:2-6, 5:1-6; Wilson 2006: fig. 21:14, 23:26).

The flint assemblages include Hemamiya Knives from Buto II, Tell el-Farkha 1, Tell el-Iswid A and Tell Ibrahim Awad 7. They are typical for the Naqada IIC-D Periods and occurred at sites in both Upper and Lower Egypt (Kabaciński 2003: 201-202; Schmidt 1992a: 32-34; 1992b: 85). The microretouche of the “Ouchtata” type and large sickle knives still continue to occur at Buto II and Tell el-Farkha 1 (Kabaciński 2003: 202; Schmidt 1993: 270). “Twisted blades” was registered also at Buto II, Tell el-Iswid A and Tell Ibrahim Awad 7 (Schmidt 1992a: 32; 1992b: 85).

On most sites of the last phase of Lower Egyptian Culture the pottery possesses numerous common features, such as at Buto IIIa, the lower strata of Unit 3 of Area B at Mendes, Tell el-Farkha 2 and Minshat Abu Omar I. Lemon jars still occur as does pottery decorated with a zigzag and semi-circles at Tell el-Farkha 2 (Mączyńska 2011: 894-897). Additionally, small bag-shaped jars were found with a rounded or slightly pointed body (Petrie's R65) at Buto IIIa and Tell el-Farkha 2 (**tab. 2:8**) (Jucha 2005: 65; Köhler 1992: 18-19, fig. 6:7-9; 7; Mączyńska 2011:897-898). Additionally, the amount of Naqadan pottery increases during this stage

2. From the level beneath Unit 3 in Area B (Friedman 1992: 204).

(Köhler 1992: 16-17). Pottery made of marl clay; new forms of vessels (e.g. Petrie's R76, R81, R84-R86) and D-ware pottery were found more abundantly than in the previous phases (Jucha 2005: 64-66; Köhler 1992: 18-19; 1998: 44; Mączyńska 2004a: 435-436, fig. 10). Some fragments of jars with wavy handles belonging to W-ware were also registered at Buto II/IIIa and Minshat Abu Omar I (**tab. 2:9**) (von der Way 1997: 192-194, Taf. 45-47; Kroeper 1988: 13-14, fig. 27-28, 59-61). Within the flint assemblages, Hemamiya Knives and sickle blades knives and the microretouche of the "Ouchtata" type are also present at Tell el-Farkha 2 and Buto IIIa (Schmidt 1992a: 32-34). Additionally, locally made new tools imitating the Upper Egyptian items appeared including bifacial blade knives without a handle at Tell el-Farkha 2 (Kabaciński 2003: 99-101).

## Settlements of the Naqada Period

It seems that the Nile Delta was densely populated as early as the Predynastic Period and many of the sites, which became important later have existed since that time. This includes several previously known settlements that were still inhabited into the subsequent Naqadan phases such as Tell el-Farkha, Buto, Tell Ibrahim Awad and Tell el-Iswid (South). The research also proves the existence of a great number of other settlements as well as cemeteries such as Mendes, Tell Masha'la, Tell Gabbara, Tell el-Murra, Kom el-Khilgan, Minshat Abu Omar, Tell el-Daba'a (el-Qanan), Tell el-Samara, Beni Amir, Ezbet el-Tell/Kufur Nigm, Minshat Ezzat<sup>3</sup> and Kafr Hassan Dawood (Hassan *et al.* 2008). Moreover, several new sites emerged in the Memphite Region (Köhler 2004: 311; 2008: 534-536). The quantity of sites dating to the end of Protodynastic/Early 1<sup>st</sup> Dynasty is especially significant. Apart from the above-mentioned sites there are further sites dating to this period based on the surface material collected during surveys (van den Brink 1993: figs. 4-7; Chłodnicki *et al.* 1992: tab.1; Jucha 2009b; Krzyżaniak 1989; Wilson 2006). However, it is quite possible that some older occupation layers are also present at these sites. A great many of them were situated in the North-Eastern Delta, probably alongside the former Tanitic branch or/and its tributaries and the trading route leading to the southern Canaan (van den Brink 1993: 294). This situation must be related to increasing commercial relations between that region and Egypt, in which inhabitants of these sites undoubtedly participated and can be confirmed by the occurrence of imported objects, both from Canaan as well as Upper Egypt (Hendrickx & Bavay 2002; Jucha 2008a: figs. 1; 2:1-2; 3:5). Moreover, it is very likely that the settlement pattern of the Nile Delta during this formative period consisted of several centres of the same significance and size that developed independently (Ciałowicz 2006: 924; van den Brink 1993: 301-302). A number of finds, among them several dated to the period before the traditional date of unification and comparable in character to objects coming from the South of Egypt, confirms the significance of the Nile Delta sites. This is observable especially in both the type and size of architectural mud-brick constructions. The most important structures uncovered so far include: a residence of the Naqada Period (Naqada II/III); a monumental (sepulchral?) brick structure (Protodynastic) and an administrative-cultic centre (end of Protodynastic/beginning of the Early Dynastic Period) at Tell el-Farkha (Ciałowicz 2006; 2008); a shrine/temple (from the Protodynastic) at Tell Ibrahim Awad (Eigner 2000: 29-35; van Haarlem 1998); and an administra-

3. For references, see: Hendrickx & Brink 2002: 348-349, 370-371; tab. 23.1; 23.2; Jucha 2009b: 83-84; Tristant 2005: vol. II.

tive building at Buto (Early Dynastic) (Hartung 2008: 1209-1213). Other important finds comprise temple deposits (miniature anthropomorphic and zoomorphic figurines, miniature vessels, miniature models of ships, rattles and other objects) from Tell Ibrahim Awad (van Haarlem 1995) and Tell el-Farkha (Ciałowicz 2006: 924-932); two golden figurines from Tell el-Farkha (Chłodnicki & Ciałowicz 2007); and a decorated palette from Minshat Ezzat (el-Baghdadi 2003: fig. 7).

The existence and prosperity of these settlements may indicate the increasing importance of this region, which was finally incorporated by early Egyptian rulers. These sites became included within the royal commercial network and thus came under the control of royal administration. There is an increasing number of finds that reflect the development of a system of collection and redistribution of commodities controlled by the state during this time such as seals and seal impressions (Chłodnicki 2008: 493-497, figs. 1-5; Kaplony 1992). "Pot-marks" and royal names (Jucha 2008b; Köhler 2004: 306-310, fig. 8; Kroeper 2000; Tassie *et al.* 2008: 208-209) occur quite frequently at this stage and the occurrence of two complete and probably one fragmentarily preserved example of the name of Iry-Hor at Tell el-Farkha (Jucha 2008b: fig. 3:5) is of great importance, as previously known pottery inscriptions referring to him derive mostly from the South (van den Brink 2001: 46-51). Other *serekhs* of Protodynastic rulers, dated prior to Iry-Hor were also attested at several sites (van den Brink 2001: 86, 89-90), including those found at Tell el-Farkha.

Considering the above-mentioned settlements, the published evidence allows us to compare and correlate the phases distinguished at Buto and Tell el-Farkha as well as, although to a lesser extent, at Tell Ibrahim Awad, Tell el-Iswid (South) and Mendes.

### **The end of Naqada II and the beginning of Naqada III Period**

In this period occupation continued on most of the sites of Lower Egypt. The ceramic assemblages recorded at Tell el-Farkha (phase 3, the beginning of phase 4), Buto (Schicht IIIb-f), Mendes (the upper layers of Unit 3 and Unit 2 of Area B), Tell el-Masha'la, the cemeteries in Minshat Abu Omar (group II-III), Kom el-Khilgan (phase 3) and Kafr Hassan Dawood all show close affinity (Buechez & Midant-Reynes 2007: 45; Friedman 1992: 199-206; Hassan *et al.* 2008: 41-59; Jucha 2005: 66-69; Köhler 1998; Kroeper & Wildung 1994; 2000; Midant-Reynes *et al.* 2004: 465-486; Rampersad 2007: 789-816). The published reports from the sites at Tell el-Iswid (phase B) and Tell Ibrahim Awad (phase 6) seem to prove a dating later than E. van den Brink (1989: 55-108; 1992: 43-68) had assumed in his publications (Jucha 2005: 69).

There is no major break in the pottery production between Naqada IID2 and IIIA1 (Hendrickx *et al.* 2002: 279-280). Most forms of vessels known from the last phase of the Lower Egyptian Culture still occur in the assemblages dated to the beginning of Naqada III Period such as hole-mouth jars and small bowls of different types (Friedman 1992: 200-204; Jucha 2005: 66-69; Köhler 1998: 46-47). There are several noticeable changes in technology at this point; namely, that hairline temper is no longer added to the paste and a significant feature of the pottery from this period is the comparatively small amount of P-ware in comparison to the pottery of the Lower Egyptian Culture seen at Tell el-Farkha 3, Buto III b-c and Mendes 3 (Friedman 1992: 200-204; Jucha 2005: 66-69; Köhler 1998: 46-51; Mączyńska 2011: 889). The gradual development of pottery production in this period shows that Lower Egyptian-Naqada cultural transition should be treated as a gradual, continuous process.

An important change in the pottery tradition occurs between Naqada IIIA1 and Naqada IIIA2 where significant progress in technology can be easily noted. A stand-

ardisation of production, of cheaper and more efficient vessels, is apparent and can be connected to the appearance of pottery workshops in these centres (Köhler 1997: 81-89; 1998: 63-72). It is clear that a rotating device was in common use in the workshops and as a result many new vessel shapes emerged. Moreover, there is an increase in the amount of good quality pottery of P-ware and S-ware such as those recorded at Tell el-Farkha 4 and Buto III d-f (Jucha 2005: 33, Fig. 13). According to Ch. Köhler (1997: 81-89; 1998: 63-72), this change could be caused by increased demand, eventually linked to the growing complexity of society and/or changes in its socio-economic structure.

Cultural markers for Naqada IIIA Period include rolled rim jars with flat bases (Petrie's R84) (**tab. 2:11**) and bag-shaped jars (Petrie's R65) (**tab. 2:8**). Tall tapering jars also appear at Tell el-Farkha 3-4 and Buto III b-d (**tab. 2:13**) (Jucha 2005: 70; Köhler 1992: 11-22; 1998: 17-18). Vessels with wavy handles still occur; however, they become more slender and their handles lose their function and change into a continuous decoration band (Hendrickx 2006: 83-84). By the end of this period cylindrical or almost cylindrical jars make an appearance, decorated with a wavy design made by pushing the clay up or a motif impressed with a finger. Some of these jars are decorated with a painted net pattern, such as the ones recorded at Tell el-Farkha 3-beginning of 4, Kom el-Khilgan 3 and Buto III b-f (**tab. 2:12**) (Jucha 2005: 59-60, pl. 98; Köhler 1998: 33-34, Taf. 59; Midant-Reynes *et al.* 2003b: 31-32, fig. 13). The most common pattern on pottery belonging to D-ware is a painted wavy line or parallel wavy lines in small groups found at Tell el-Farkha 3-4 and Buto III b-f (**tab. 2:10**). Another decoration pattern noted on potsherds consists of a punctured decoration (**tab. 2:17**) (Jucha 2005: 55-57; Köhler 1998: 35, Taf. 57: 3-4, 6, 63: 7-11, 64: 1-8).

At this point "Twisted blades" and large sickle blade knives disappear from the flint production corpus. The basis of the flint industry now consists of more or less regular blades, used mostly for production of rectangular sickle blade that appear in great quantity at Tell el-Farkha 3-4 and Buto III b-f (Kabaciński 2003: 201-212; Schmidt 1992a: 34-36). This change in the flint industry could indicate the appearance of new planting and harvesting techniques affecting the scale of cereal production and processing (Wengrow 2006: 163). Additionally, locally made bifacial knives started to appear more frequently at Tell el-Farkha 3 and Buto III (Kabaciński 2003: 201-212; Schmidt 1992: 34). By the Naqada IIIA2 Period, among knives, there can be found bifacial items with separated handles formed by stepped retouching at the lower edge and knives of the Gebel el-Arak type (e.g. a knife of ripple flake found along with the famous golden figures at Tell el-Farkha) (Chłodnicki & Ciałowicz 2007: 18-19; Kabacinski 2003: 206; Schmidt 1992a: 35; 1992b: 86).

### The end of Protodynastic/beginning of Dynasty 1

The subsequent phases, distinguished at the Nile Delta sites, correspond to a later stage of the process of state formation in Egypt (Naqada IIIB/C1). The following are dated to that period (**tab. 1**): Tell el-Farkha end of 4/5 (Jucha 2005: 74-78), Buto III f/IV (Köhler 1998: 48-49, 52-53); Tell Ibrahim Awad 6/5b (van den Brink 1992: 52-53); Tell el-Iswid B (strata VII/VIII) (van den Brink 1989: 64, 71-78, tab. 1); Mendes 2/1 (Friedman 1992: 200-202, figs. 2-3). These can be further correlated to the Nile Delta cemeteries at Minshat Abu Omar, group III (3b/c) (Kroeper 1988: 14-16) and the oldest graves among the first group at Tell el-Farkha (Ablamowicz *et al.* 2004: 406-415; Dębowska-Ludwin *et al.* 2010). Such dating and correlation of these phases can be confirmed mainly by the occurrence of similar pottery forms, especially those that are considered chronological markers for the period. Most distinctive pottery types include especially fine-ware cylindrical jars decorated with different impressed or incised decoration



patterns (**tab. 2:14**; Petrie 1921: pl. XXX: W71a, W80, W85; 1953: pls. VIII-IX: 47, 48, 49), characteristic of Naqada IIIB (Hendrickx 1999: 31, fig. 9; 2006: 84-86, tab. II; Kaiser 1957: Taf. 24). Such jars were found mostly in the above-mentioned phases, though some types of decoration were attested slightly earlier (Jucha 2005: 59-60; Pl. 100; Köhler 1998: 33, 49, Abb. 24, Taf. 58:3-11; van den Brink 1989: fig. 14:13-14; 1992: fig. 7:4). They also occur in similarly dated graves at Minshat Abu Omar (group III/3b) (Kroeper 1988: figs. 78, 86-88) and Tell el-Farkha (Dębowska-Ludwin *et al.* 2010: fig. 2:1-2; Jucha 2008a: 71, fig. 8:1). Other decoration patterns occurring on different types of storage jars include decoration composed of half-bows around the shoulder: lightly smoothed, impressed, cut or with the upper edge pushed upwards (Jucha 2005: 60-61; pl. 102:3-9; Köhler 1998: 34, Taf. 59:6-11; 62). These types are also present in the Nile Delta cemeteries at Minshat Abu Omar, group III (3b-c) (Kroeper 1988: 14-16, figs. 80, 91-95, 140-143) and Tell el-Farkha (Jucha 2008b: figs. 1:1b-II; 2:V). Jars belonging to Type II and III according to van den Brink typology (**tab. 2:15-16**; van den Brink 1996: 144-147, fig. 2) occur at Tell el-Farkha in graves dated to Naqada IIIB Period. Other types (**tab. 2:24**) were also attested in later graves of the first group. The above-mentioned strata contains fragments of jars with a rope band pattern (**tab. 2:25**; Jucha 2005: 60, pls. 101; 102:1-2; Köhler 1998: 34, Abb. 24:13, Taf. 60:13, 16; 61:1-2, 5-6), which appear during this time and continue into the Early Dynastic Period (Jucha 2008b: figs. 1:1a; 2:IIIa; Petrie 1953: pl. XXII; van den Brink 1996: 148; fig. 3). Forms decorated with impressed (punctured) dots, sometimes with incised decoration beside the dots (**tab. 2:17**), can be found (Jucha 2005: 56-57; pls. 93-94; Köhler 1998: 33, Taf. 57:3-4,6), although such decoration at Tell Ibrahim Awad and Tell el-Iswid (South) were also present in earlier periods (van den Brink 1989: fig. 12:10, 12; 1992: fig. 10:7).

Among the rough-ware jars, the type with a tall cylindrical neck, a direct or only slightly thickened external extension of the rim and roughly made lower part of the body (**tab. 2:18**; Petrie 1953: pl. XVII:73f,h,k) seems to be the most typical of the described phases in the settlements (Jucha 2005: pl. 35:2-3; Köhler 1998: Taf. 11:2; Ihde 2000: Abb. 8:18-19) as well as cemeteries and are seen at Minshat Abu Omar, group III(3b) (Kroeper 1988: fig. 99) and Tell el-Farkha graves of Naqada IIIB date (Dębowska-Ludwin *et al.* 2010: fig. 2:4). The same concerns "granary" jars (**tab. 2:19**; Petrie 1921: Pl. XLVII:L34a-b; 1953: Pl. XVII:70o, 72d-g) with a closed mouth, simple rim and incised groove (Mączyńska 2004b: 60, fig. 11:12; Ihde 2000: Abb. 7:1,3; Kroeper 1988: fig. 101). Other jars that frequently occur constitute forms with a distinct neck of concave contour and an exterior lip (Jucha 2005: pls. 31-32; Köhler 1998: Taf. 11:8, 10; 53:14-15) and narrow-shouldered forms with a short and broad neck and flaring rim (Jucha 2005: pl. 33:7-9; Köhler 1998: 16, Taf. 4:4, 6-7).

The described phases also include rough-ware bowls with a concave contour of wall and direct rim (**tab. 2:20**) or with a thickened external lip (Jucha 2005: 48, pls. 48:5-8; 49:1; Köhler 1998: 25, Taf. 33:3-4). These occur mostly in the Protodynastic Period and less frequently during the Early Dynastic Period (Dębowska-Ludwin *et al.* 2010: fig. 2:3; Kroeper 1988: fig. 106; Emery 1961: 213, fig. 122: 26). The red-polished bowls include forms with convex sides and a simple rim (Jucha 2005: pls. 59-64; Köhler 1998: 22-23, Taf. 27:1; van den Brink 1989: fig. 14:1-8) or a thickened external lip-rim (Jucha 2005: pls. 54; 55:1-4; Köhler 1998: 22); both were found in subsequent phases. Among the bread moulds the most typical are shallow and wide forms or slightly deeper examples without or, in a few cases with an angular transition dividing the body into two zones (Jacquet-Gordon 1981: fig. 1:1-4). These include examples with a rounded (**tab. 2:21**), flattened or concave rim top (Jucha 2005: pls. 68-72; Köhler 1998: 47, Taf. 42:2-3; van den Brink 1989: fig. 13:4-8; 1992: 52-53, fig. 7:3).

Apart from the pottery, similarities are also observed among the flint assemblages found in the described settlement phases of the Nile Delta sites. The assemblages are dominated mostly by the occurrence of the segmented blades often used as sickle inserts (Kabaciński 2003: 207; Schmidt 1992a: 35). Among them, rectangular segment blades and backed segment blades constitute the main types, although the former seem to be more popular (Kabaciński 2003: figs. 4:2, 4-9). The number of triangular segment blades is limited (Kabaciński 2003: 207); however, bifacial knives (Schmidt 1992a: 35), among them wide and narrow examples (Kabaciński 2003: 207, figs. 4:10; 5:1-2, 4), can still be identified. Furthermore, a fragment of a retouched flint bracelet was found at Tell el-Farkha, phase 5 (Kabaciński 2003: 207, fig. 4:3). Similar examples, dated to the Early Dynastic Period occur also at Buto (Schmidt 1992a: 37, fig. 4:1) and Tell Ibrahim Awad (Schmidt 1992b: 88, fig. 8:51).

### Early Dynastic

The above-mentioned Protodynastic settlements of the Nile Delta were still inhabited during the Early Dynastic Period (Naqada IIIC-D). Phases dated to that period and distinguished at these sites can be roughly correlated as follows (**tab. 1**): Tell el-Farkha 6 (Jucha 2011), Buto IV-V, V (Köhler 1998: 53-54, 58), Tell Ibrahim Awad 5a-b/4 (van den Brink 1992: 50-51), Tell el-Iswid B (strata VIII-X) (van den Brink 1989: 64-65, 71-78, Tab. 1) and Mendes 1 (Friedman 1992: 199, fig. 1). Their dating and correlation can be confirmed mostly by similarities of pottery forms, among which there are examples regarded as chronological markers.

Several pottery forms were attested both in the Dynasty 1 and 2 strata. These include bread moulds that are deeper than previous forms, most belonging to the types with an angular transition dividing the body into two zones. Forms with a diagonal and wavy formed external contour of the rim (**tab. 2:22**; Jucha 2011: figs. 1:31, 33; 2:27, 29; 3:34-36; Köhler 1998: 27, Taf. 44:2, 4-5) seem to be especially typical from the beginning of this period. Other forms include examples with a diagonal outer part of the rim and a flat (Jucha 2011: figs. 1:32; 2:28; 3:35; Köhler 1998: 27, Taf. 46.4), or rounded (Jucha 2011: figs. 1:27; 2:24; 3:30; Köhler 1998: 27, Taf. 42.1) contour. Forms with a concave (Jucha 2011: figs. 1.29-30; 2:26; 3:33; van den Brink 1989: fig. 13.5), rounded (Jucha 2011: figs. 1.25-26; 2:23; 3:29; Köhler 1998: 27, pl. 42.4; van den Brink 1989: fig. 13.6) or a flat rim top (Jucha 2011: figs. 1.28; 3:32; van den Brink 1989: fig. 13.4) are still present. The same concerns the red-polished bowls with a simple rim (Ihde 2000: Abb.6; Jucha 2011: figs. 1:15-17; 2:17-18; 3:22 23; Köhler 1998: 22-23, Taf. 27:2, 7-9; 28.1, 3, 5), or a lip-rim (Jucha 2011: figs. 1.13; 3:18-19; Köhler 1998: 22, Taf. 23:6, 11).

Several of the Early Dynastic forms can be connected mostly with the Dynasty 1 strata. Among them are examples known from the previous period, which include shallow spherical bread moulds with a rounded base and a rounded rim top (**tab. 2:21**; Jucha 2011: figs. 1:24; 2:22; Köhler 1998: 27, Taf. 42:2; van den Brink 1989: fig. 13.7-8), jars with a concave neck and a lip-rim (Jucha 2011: fig. 1.4) and jars with an out-turned rim (Jucha 2011: figs. 1:5; 2:7-8; Köhler 1998: 18-19, Taf. 13.1). Rim fragments of the latter may belong to the jars decorated with a row of slightly smoothed half-bows around the shoulders (**tab. 2:24**) that also occur in Naqada IIIB-C1/C2 graves (Jucha 2008b: fig. 2:V; Kroeper 1988: 14-16, figs. 80, 92-93, 142-143). Bowls with concave sides and a lip-rim with coated and polished interior and smoothed exterior (**tab. 2:23**; Jucha 2011: figs. 1:21; 2:19; Köhler 1998: 25, Taf. 33:6-7) seem to be typical of described period.



Forms characteristic of the strata belonging to the first half of the Dynasty 1 can be easily distinguished. These include bowls (similar to the above-mentioned types) with a groove on the outer edge of the lip-rim (Jucha 2011: fig. 1:22) and bowls with concave sides (**tab. 2:20**; Jucha 2011: fig. 1:19-20), although the latter occur less frequently than during the previous period. The same strata also contains fine-ware cylindrical jars without any decoration (**tab. 2:26**; Jucha 2011: fig. 1.6, Köhler 1998: Taf. 15:1) typical of the Naqada IIIC1/C2 Period (Hendrickx 1999: fig. 9; 2006: 86-87) and fragments of jars with a modelled rope band pattern that may belong to wine jars with three decorative bands (**tab. 2:25**; Jucha 2008b: figs. 1:1a). It is possible therefore to correlate these strata with the later graves among the first group at Tell el-Farkha (Jucha 2008a: 72-73, fig. 9; 2009a: 49-50) and graves of Group III (3c) at Minshat Abu Omar (Kroeper 1988: 16, fig. 139) (**tab. 1**).

Several forms that become typical during the second half of Dynasty 1 (and occur also during Dynasty 2) can also be distinguished. These forms comprise rough ware flat bases with a scrapped surface (Jucha 2011: figs. 2:10; 3:2), probably belonging to the type of beer jars found in graves dated to the second half of Dynasty 1 (**tab. 2:27**; Jucha 2009a: fig. 1:1-4; Kroeper 1988: figs. 161-163). Although typical of the later part of Dynasty 1, they are sporadically found in earlier strata (Jucha 2005: 42-43; Köhler 1998: 16-17). Fragments of rough-ware jars with a straight neck and a simple rim, sometimes with an irregularly (wavy) formed surface at the shoulder were found in the same context (Jucha 2011: figs. 2:1; 3:1; Köhler 1998: Taf. 1:14-15, 17; 2:1-6; 10:13, 15). These may derive from various types of beer jars with scraped and irregularly formed surfaces (**tab. 2:28**) or only irregular surfaces (**tab. 2:29**), which also occur in graves dated to the period commencing in the second half of Dynasty 1 (Naqada IIIC2/D) (Jucha 2009a: figs. 1:2-3; 2:1). Ovoid jars (made of finer quality fabric), with an almost rounded or slightly flattened base and smoothed surface also occur at this point (**tab. 2:33**; Jucha 2009a: 58, fig. 3). Flat plates with a red-coating, polished interior and uncoated, smoothed, outer surface (**tab. 2:30**) seem to become typical from the same period (although intermittently attested to earlier strata as well) (Jucha 2011: figs. 2:17; 3:24). These forms can be found in graves together with the above-mentioned beer jar types (Jucha 2009a: 50; Kroeper 1988: 16, fig. 177). The most characteristic bread mould form since this time has a distinct transition dividing the body into two zones and a thickened internal part of the rim (**tab. 2:31**; Hartmann 2007: Abb. 5:8; 12:4; Jucha 2011: figs. 2:30; 3:37; Köhler 1998: 27, Taf. 45.2-4; Wodzińska 2000: 154-155, Abb. 10.1; Emery 1954: 160, fig. 222:EE1; 1958: pl. 32:R1; Raue 1999: 174-175, Abb. 34:3). Most of the forms described here make it possible to correlate the discussed strata with the second group of graves at Tell el-Farkha (Jucha 2009a: 50-52) and group IV at Minshat Abu Omar (Kroeper 1988: 16) (**tab. 1**).

The subsequent strata representing the end of Dynasty 1 and Dynasty 2 contains forms that can be considered as chronological markers for this period. These comprise of bowls with a wavy external contour of the rim (**tab. 2:32**; Jucha 2011: fig. 3:15; Köhler 1998: Taf. 24:7); flat plates with an angular transition between the sides and the base (Jucha 2011: fig. 3:25; Köhler 1998: 26-27, Taf. 38:7-9; cf. Raue 1999: 176-177, Abb. 35:4); jars with an angular transition between the upper and lower part of the rim (Jucha 2011: fig. 3:3; Köhler 1998: Taf. 52:10); red-polished bowls with an internal lip-rim (Jucha 2011: fig. 3:20) or an angular inner edge of the rim (Jucha 2011: fig. 3:21; Köhler 1998: 23, Taf. 28.9-16); spouted brewing vats with a lip-rim (Jucha 2011: fig. 3:13; Köhler 1998: 22, Pl. 24.2-6, cf. Hendrickx *et al.* 2002: 292-293; Emery 1958: pl. 32:P1); and rounded bases with the scraped surface, most probably belonging to

beer jars with the scraped surface (Jucha 2011: fig. 3:10; Köhler 1998: 16-17, Taf. 5-7), recorded also from the graves dating to Naqada IIIC2/D (Jucha 2009a: fig. 1:5).

Similarities between the described settlement phases of Dynasty 1 and 2 are visible among the flint assemblages. Segmented blades are still present (Schmidt 1992a: 37, figs. 5:3-4, 6-7), the most typical among them are rectangular examples (Kabaciński 2003: 207, fig. 5:9; Schmidt 1992b: 82-83, fig. 2:1-10). They continue to occur in the subsequent period, although reduction in the width of the blades was observed between the Early Dynastic and the Old Kingdom pieces (Schmidt 1992b: 82-83). The number of triangular segment blades is limited in comparison to the rectangular examples (Kabaciński 2003: 207; Schmidt 1992b: 83, fig. 3:11-12) and backed segment blades are absent (Kabaciński 2003: 207).

“Razor blades” constitute another tool class that is especially characteristic of the Early Dynastic Period and occur at Tell el-Farkha only in Phase 6 (Kabaciński 2003: 207, figs. 5:5; 6:1-2). Similarly, at Buto, Tell el-Iswid (South) and Tell Ibrahim Awad, they belong to the “new tools,” which start to appear from this period. Furthermore, one can observe a chronological development from the blades with rounded retouched ends, dated to the beginning of the Early Dynastic (Schmidt 1992a: 37, figs. 4:2), to the examples with straight retouched ends that occur during Dynasty 2 and the Old Kingdom (Schmidt 1992a: 37, figs. 4:4; 1992b: 84-85, fig. 7:39-46).

Bifacial knives, and among them narrow examples (Kabaciński 2003: 207, fig. 6:3), some with handles (Schmidt 1989: 304, fig. 16:1; 1992a: 37, fig. 3:2; 1992b: 86-87, figs. 8:48; 9:52; 10:55), occur quite frequently.

Moreover, the finds include large triangular scrapers (Schmidt 1989: 301, fig. 15:7; 1992a: 37, fig. 4:3) and fragments of a retouched flint bracelet (see below).

## Conclusion

New information has recently been gained from the increasing number of surveys and excavations in the Nile Delta, which confirm that a number of sites existed in that region during the Predynastic - Early Dynastic Periods.

The results of this research contribute new and important data concerning the character of the infiltration of the inhabitants from Upper Egypt (belonging to the Naqada Culture), who appear to have superseded the inhabitants of the Nile Delta (belonging to the Lower Egyptian Culture). These findings confirm that the transition could have been gradual rather than rapid. It seems that instead of an extermination of local inhabitants by the new settlers coming from the South, we may speak rather of their assimilation with groups representing the Naqada tradition.

This new data sheds light on the role played by the Nile Delta settlements in the process of state formation in Egypt. Although a major role was played by the sites of Upper Egypt, it seems that Nile Delta sites were also important. The existence of several centres and the character of the finds prove that the sites had a great significance not only in developing contacts between Egypt and the Southern Levant, but also in the process that finally led to political unification. It is even possible that some of the local rulers reigned locally just prior to the final stage of unification.

The published evidence allows us to compare the phases distinguished at several Nile Delta sites. Work at many of these sites is still in progress; therefore we can expect further new data, which will enrich our knowledge of that region.

## Bibliography

- ABŁAMOWICZ, R.; DĘBOWSKA, J. & JUCHA, M., 2004. The Graves of Tell el-Farkha (seasons 2001-2002) [in:] HENDRICKX, S.; FRIEDMAN, R.F.; CIAŁOWICZ, K.M. & CHŁODNICKI, M. (eds.), *Egypt at its Origins. Studies in Memory of Barbara Adams. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt"*, Kraków, 28<sup>th</sup> August - 1<sup>st</sup> September 2002, *Orientalia Lovaniensia Analecta* 138. Leuven: 399-419.
- BUCHEZ, N. & MIDANT-REYNES, B., 2007. Le site prédynastique de Kom el-Khilgan (Delta Oriental). Données nouvelles sur les processus d'unification culturelle au IV<sup>ème</sup> millénaire. *BIFAO* 107: 43-70.
- BUCHEZ, N. & MIDANT-REYNES, B., 2011. A tale of two funerary traditions: the Predynastic cemetery at Kom el-Khilgan (Eastern Delta) [in:] FRIEDMAN, R.F. & FISKE, P.N. (ed.), *Egypt at its Origins 3, Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt"*, London, 27<sup>th</sup> September-1<sup>st</sup> August 2008. *Orientalia Lovaniensia Analecta* 205. Leuven: 831-858.
- CHŁODNICKI, M., 2008. Trade and Exchange in the Predynastic and Early Dynastic Period in the Eastern Nile Delta [in:] MIDANT-REYNES, B. & TRISTANT, Y. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt"*, Toulouse, 5<sup>th</sup>-8<sup>th</sup> September 2005. *Orientalia Lovaniensia Analecta* 172. Leuven: 489-500.
- CHŁODNICKI, M. & CIAŁOWICZ, K.M., 2002a. Tell el-Farkha Seasons 1998 - 1999. Preliminary Report. *MDAIK* 58: 89-117.
- CHŁODNICKI, M. & CIAŁOWICZ, K.M., 2002b. Polish excavations at Tell el-Farkha (Ghazala) in the Nile Delta. Preliminary report 1998-2001. *Archeologia* 53: 63-119.
- CHŁODNICKI, M. & CIAŁOWICZ, K.M., 2004. Polish excavations at Tell el-Farkha (Ghazala) in the Nile Delta. Preliminary report 2002-2003. *Archeologia* 55: 47-74.
- CHŁODNICKI, M. & CIAŁOWICZ, K.M., 2006. Polish excavations at Tell el-Farkha (Ghazala) in the Nile Delta. Preliminary Report 2004-2005. *Archeologia* 57: 71-128.
- CHŁODNICKI, M. & CIAŁOWICZ, K.M., 2007. Golden Figures from Tell el-Farkha. *Studies in Ancient Art and Civilization* 10: 7-21.
- CHŁODNICKI, M.; FATTOVICH, R. & SALVATORI, S., 1992. The Italian Archaeological Mission of the C.S.R.L-Venice to the Eastern Nile Delta: A preliminary report of the 1987-1988 field seasons. *CRIPPEL* 14: 45-62.
- CIAŁOWICZ, K.M., 2001. *La naissance d'un royaume. L'Égypte dès la période prédynastique à la fin de la I<sup>ère</sup> dynastie*. Kraków.
- CIAŁOWICZ, K.M., 2006. From Residence to early Temple: the case of Tell el-Farkha [in:] KROEPER, K., CHŁODNICKI, M. & KOBUSIEWICZ, M. (eds.), *Archaeology of early Northeastern Africa. In memory of Lech Krzyżaniak*. *Studies in African Archaeology* 9. Poznań: 917-934.
- CIAŁOWICZ, K.M., 2008. The Nature of the Relation between Lower and Upper Egypt in the Protodynastic Period. A view from Tell el-Farkha [in:] MIDANT-REYNES, B. & TRISTANT, Y. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt"*, Toulouse, 5<sup>th</sup>-8<sup>th</sup> September 2005. *Orientalia Lovaniensia Analecta* 172. Leuven: 501-513.
- DEBONO, F. & MORTENSEN, B., 1988. *The Predynastic Cemetery at Heliopolis. Season March-September 1950*. *Archäologische Veröffentlichungen* 63. Mainz am Rhein.
- DĘBOWSKA-LUDWIN, J.; JUCHA, M. A.; KOŁODZIEJCZYK, P.; PRYC, G., 2010. Tell el-Farkha (2009 season): grave no. 100. *Studies in Ancient Art and Civilization* 14: 23-42.
- EL-BAGHDADI, S.G., 2003. Proto- and Early Dynastic Necropolis of Minshat Ezzat, Dakahlia Province, Northeast Delta. *Archéo-Nil* 13: 143-152.
- EIGNER, D., 2000. Tell Ibrahim Awad: Divine Residence from Dynasty 0 until Dynasty 11. *Ägypten und Levante* 10: 17-36.
- EMERY, W.B. 1954. *The Great Tombs of the First Dynasty*, vol. II. London.
- EMERY, W.B. 1958. *The Great Tombs of the First Dynasty*, vol. III. London.
- EMERY, W.B. 1961. *Archaic Egypt*, Harmandsworth.
- FALTINGS, D., 1998. Recent excavations in Tell el-Fara'in / Buto: New Finds and Their Chronological Implications [in:] EYRE, C.J. (ed.), *Proceedings of the Seventh International Congress of Egyptologists, Cambridge, 3-9 September 1995*. Leuven: 366-375.
- FALTINGS, D., 2002. The chronological frame and social structure of Buto in the fourth millennium BCE [in:] VAN DEN BRINK, E.C.M. & LEVY, T.E. (eds.), *Egypt and the Levant: Interrela-*

- tions from the 4th through the early 3rd millennium B.C.E. London-New York: 163-170.
- FRIEDMAN, R.F., 1992. The Early Dynastic and Transitional pottery of Mendes: the 1990 Season [in:] VAN DEN BRINK, E.C.M. (ed.), *The Nile Delta in transition: 4th- 3rd Millennium B.C. Proceedings of the seminar held in Cairo, 21-24 October 1990, at the Netherlands Institute of Archaeology and Arabic Studies*. Tel Aviv: 199-205.
- HASSAN, F.A.; TASSIE, G.J; EL-SENUSSI, A.; VAN WETERING, J.; SHARP, D. & CALCOEN, B., 2008. A preliminary report on the pottery from the Protodynastic to Early Dynastic cemetery at Kafr Hassan Dawood, Wadi Tumilat, East Delta, Egypt [in:] MIDANT-REYNES, B. & TRISTANT, Y. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt. Toulouse, 5<sup>th</sup>-8<sup>th</sup> September 2005*. Orientalia Lovaniensia Analecta 172. Leuven: 41-59.
- HARTMANN, R., 2007. Keramik der 1.- 3. Dynastie aus den Grabungsflächen E0-E14 [in:] HARTUNG, U. et al., *Tell el-Fara'in - Buto*. 9. Vorbericht, *MDAIK* 63: 81-98.
- HARTUNG, U., 2004. New investigations in the Predynastic settlement at Maadi [in:] HENDRICKX, S., FRIEDMAN, R.F., CIAŁOWICZ, K.M. & CHŁODNICKI, M. (eds.), *Egypt at its origins. Studies in memory of Barbara Adams. Proceedings of the international conference 'Origin of the state. Predynastic and Early Dynastic Egypt'*, Kraków, 28th August-1st September 2002. Orientalia Lovaniensia Analecta 138. Leuven: 337-356.
- HARTUNG, U., 2008. Recent Investigations at Tell el-Fara'in/Buto [in:] MIDANT-REYNES, B. & TRISTANT, Y. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt. Toulouse, 5<sup>th</sup>-8<sup>th</sup> September 2005*. Orientalia Lovaniensia Analecta 172. Leuven: 1195-1219.
- HENDRICKX, S., 1999. La chronologie de la préhistoire tardive et des débuts de l'histoire de l'Égypte. *Archéo-Nil* 9: 13-107.
- HENDRICKX, S., 2006. Predynastic-Early Dynastic chronology [in:] HORNING, E., KRAUSS, R. & WARBURTON, D.A. (eds.), *Ancient Egyptian Chronology*. HdO 83. Leiden: 55-93.
- HENDRICKX, S. & BAVAY, L., 2002. The Relative Chronological Position of Egyptian Predynastic and Early Dynastic Tombs with Objects Imported from the Near East and the Nature of Interregional Contacts [in:] VAN DEN BRINK, E. C. M. & LEVY, T. E. (eds.), *Egypt and the Levant. Interrelations from the 4<sup>th</sup> through the Early 3<sup>rd</sup> Millennium BCE*. London - New York: 58-80.
- HENDRICKX, S., FALTINGS, D., OP DE BEECK, L., RAUE, D., MICHIELS, CH., 2002. Milk, Beer and Bread Technology during the Early Dynastic Period. *MDAIK* 58: 277-304.
- HENDRICKX, S & VAN DEN BRINK, E. C. M., 2002. Inventory of Predynastic and Early Dynastic Cemetery and Settlement Sites in the Egyptian Nile Valley [in:] VAN DEN BRINK, E. C. M. & LEVY, T. E. (eds.), *Egypt and the Levant. Interrelations from the 4<sup>th</sup> through the Early 3<sup>rd</sup> Millennium BCE*. London - New York: 346-399.
- IHDE, CH., 2000. Die Keramik der Grabungsflächen U I, U III, U IV und T VIII [in:] FALTINGS, D.; BALLETT, P.; FÖRSTER, F.; FRENCH, P.; IHDE, CH.; SAHLMANN, H.; THOMALSKY, J.; THUMSHIRN, CH. & WODZIŃSKA, A., *Zweiter Vorbericht über die Arbeiten in Buto von 1996 bis 1999*. *MDAIK* 56: 144-153.
- JACQUET-GORDON, H., 1981. A Tentative Typology of Egyptian Bread Moulds [in:] ARNOLD, DO., *Studien zur Altägyptischen Keramik*. Mainz: 11-24.
- JUCHA, M.A., 2005. *Tell el-Farkha II. The pottery of the Predynastic settlement (Phases 2 to 5)*. Kraków-Poznań.
- JUCHA, M.A., 2008a. Wavy-Handled and Cylindrical Jars in the Nile Delta - a View from Tell el-Farkha. *Studies in Ancient Art and Civilization* 12: 63-74.
- JUCHA, M.A., 2008b. The Corpus of "Potmarks" from the Graves at Tell el-Farkha [in:] MIDANT-REYNES, B. & TRISTANT, Y. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt. Toulouse, 5<sup>th</sup>-8<sup>th</sup> September 2005*. Orientalia Lovaniensia Analecta 172. Leuven: 133-149.
- JUCHA, M.A., 2009a. Beer Jars of Naqada III Period. A View from Tell el-Farkha [in:] RZEUSKA, T. I. & WODZIŃSKA, A. (eds.), *Studies on Old Kingdom Pottery*. Warsaw: 49-60.
- JUCHA, M.A., 2009b. The North-Eastern Part of the Nile Delta - Research Perspectives. Polish Archeological Survey in the Ash-Sharqiyyah Governorate [in:] POPIELSKA-GRZYBOWSKA, J. & IWASZCZUK, J. (eds.), *Proceedings of the Fifth Central European Conference of Egyptologists. Egypt 2009: Perspectives of Research, Pułtusk 22-24 June 2009*, Acta Archaeologica Pultuskiensia, vol. II: Pułtusk: 83-88, figs. 33-41.
- JUCHA, M.A., 2011. The development of pottery production during the Early Dynastic period and the beginning of the Old Kingdom: a view from Tell el-Farkha [in:] FRIEDMAN, R.F. & FISKE, P.N. (ed.), *Egypt at its Origins 3. Proceedings of the International Conference "Origin of the State. Predynastic and Early*



- Dynastic Egypt*, London, 27th September-1st August 2008. *Orientalia Lovaniensia Analecta* 205. Leuven: 953-974.
- KABACIŃSKI, J., 2003. Lithic industry at Tell el Farkha (Eastern Delta) [in:] KRZYŻANIAK, L., KROEPER, K. & KOBUSIEWICZ, M. (eds.), *Cultural markers in the later prehistory of Northeastern Africa and recent research*. Studies in African Archaeology 8. Poznań: 201-212.
- KAISER, W., 1957. Zur inneren Chronologie der Naqadakultur. *Archaeologia Geographica* 6: 69-77.
- KAPLONY, P., 1992. Archaische Siegel und Siegelabrollungen aus dem Delta: die Arbeit and den Siegeln von Buto [in:] VAN DEN BRINK, E.C.M. (ed.), *The Nile Delta in transition: 4th-3rd. millennium B.C. Proceedings of the seminar held in Cairo, 21-24. October 1990, at the Netherlands Institute of Archaeology and Arabic Studies*. Tel Aviv: 23-30.
- KÖHLER, E.C., 1992. The Pre- and Early Dynastic Pottery of Tell el-Fara'in/Buto [in:] VAN DEN BRINK, E.C.M. (ed.), *The Nile Delta in transition: 4th-3rd. millennium B.C. Proceedings of the seminar held in Cairo, 21-24. October 1990, at the Netherlands Institute of Archaeology and Arabic Studies*. Tel Aviv: 11-22.
- KÖHLER, E.C., 1997. Socio-economic Aspects of Early Pottery Production in the Nile Delta. *The Bulletin of the Australian Centre for Egyptology* 8: 81-89
- KÖHLER, E.C., 1998. *Tell el-Fara'in Buto III. Die Keramik von der späten Naqada-Kultur bis zum frühen Alten Reich (Schichten III bis VI)*. Archäologische Veröffentlichungen 94. Mainz am Rhein.
- KÖHLER, E.C.H. 2004. On the Origins of Memphis - The new excavations in the Early Dynastic necropolis at Helwan [in:] HENDRICKX, S.; FRIEDMAN, R.F.; CIAŁOWICZ, K.M. & CHŁODNICKI, M. (eds.), *Egypt at its Origins. Studies in Memory of Barbara Adams. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt"*, Kraków, 28<sup>th</sup> August - 1<sup>st</sup> September 2002. *Orientalia Lovaniensia Analecta* 138. 2004: 295-315.
- KÖHLER, E.C., 2008. The interaction between and the roles of Upper and Lower Egypt in the formation of the Egyptian State. Another review [in:] MIDANT-REYNES, B. & TRISTANT, Y. (eds.), *Egypt at its origins 2. Proceedings of the international conference 'Origin of the state, Predynastic and Early Dynastic Egypt', Toulouse (France), 5th-8th September 2005*. *Orientalia Lovaniensia Analecta* 172, Leuven: 515-544.
- KROEPER, K., 1988. The Excavations of the Munich East-Delta expedition in Minshat Abu Omar [in:] VAN DEN BRINK, E.C.M. (ed.), *The Archaeology of the Nile Delta. Problems and Priorities*. Amsterdam: 11-46.
- KROEPER, K., 2000. Corpus of potmarks from the Pre/Early Dynastic cemetery at Minshat Abu Omar (Northeastern Delta, Egypt) [in:] KRZYŻANIAK, L.; KROEPER, K. & KOBUSIEWICZ, M. (eds.), *Recent Research Into the Stone Age of Northeastern Africa*, Studies in African Archaeology 7. Poznań: 187-218.
- KROEPER, K. & WILDUNG, D., 1994. *Minshat Abu Omar I, Ein vor- und frühgeschichtlicher Friedhof im Nildelta: Gräber 1-114*. Mainz.
- KROEPER, K. & WILDUNG, D., 2000. *Minshat Abu Omar II, Ein vor- und frühgeschichtlicher Friedhof im Nildelta: Gräber 115-204*. Mainz.
- KRZYŻANIAK, L., 1989. Recent Archaeological Evidence on the Earliest Settlement in the Eastern Delta [in:] KRZYŻANIAK, L. & KOBUSIEWICZ, M. (eds.), *Late Prehistory of the Nile Basin and the Sahara*. Studies in African Archaeology 3. Poznań: 267-285.
- KRZYŻANIAK, L., 1992. Again on the Earliest Settlement in Minshat Abu Omar [in:] VAN DEN BRINK, E.C.M. (ed.), *The Nile Delta in transition: 4th-3rd. millennium B.C. Proceedings of the seminar held in Cairo, 21-24. October 1990, at the Netherlands Institute of Archaeology and Arabic Studies*. Tel Aviv: 151-156.
- KRZYŻANIAK, L., 1993. New Data on the Late Prehistoric Settlement at Minshat Abu Omar (Eastern Nile Delta) [in:] KRZYŻANIAK, L., KOBUSIEWICZ, M., & ALEXANDER, J. (eds.), *Environmental change and human culture in the Nile basin and Northern Africa, until the second millennium B.C*. Studies in African Archaeology 4. Poznań: 321-325.
- LEVY, T. E. & VAN DEN BRINK, E.C.M., 2002. Interaction models, Egypt and the Levantine periphery [in:] VAN DEN BRINK, E.C.M. & LEVY, T.E. (eds.), *Egypt and the Levant: Interrelations from the 4th through the early 3rd millennium B.C.E*. London-New York: 3-38.
- MACZYŃSKA, A., 2003. Lower Egyptian culture from the central Tell at Tell el-Farkha (Nile Delta) [in:] KRZYŻANIAK, L., KROEPER, K. & KOBUSIEWICZ, M. (eds.), *Cultural markers in the later prehistory of Northeastern Africa and recent research*. Studies in African Archaeology 8. Poznań: 213-226.
- MACZYŃSKA, A., 2004a. Pottery tradition at Tell el-Farkha [in:] HENDRICKX, S., FRIEDMAN, R.F., CIAŁOWICZ, K.M. & CHŁODNICKI, M. (eds.), *Egypt at its origins. Studies in memory of Barbara Adams. Proceedings of the international conference 'Origin of the state. Predynastic and Early Dynastic Egypt', Kraków, 28th August-1st September 2002*. *Orientalia Lovaniensia Analecta* 138. Leuven: 421-442.

- MACZYŃSKA, A., 2004b. The Pottery from the Central Kom [in:] CHŁODNICKI, M. & CIAŁOWICZ, K.M., Polish excavations at Tell el-Farkha (Ghazala) in the Nile Delta. Preliminary report 2002-2003. *Archeologia* 55: 56-62.
- MACZYŃSKA, A., 2006. Egyptian-Southern Levantine interaction in the 4th and 3<sup>rd</sup> millennium B.C. A view from Tell el-Farkha [in:] KROEPER, K., CHŁODNICKI, M. & KOBUSIEWICZ, M. (eds.), *Archaeology of early Northeastern Africa. In memory of Lech Krzyżaniak*. Studies in African Archaeology 9. Poznań: 945-957.
- MACZYŃSKA, A., 2008. Some remarks on Egyptian-Southern Levantine interrelations in the first half of the 4th millennium BC [in:] MIDANT-REYNES, B. & TRISTANT, Y. (eds.), *Egypt at its origins 2. Proceedings of the international conference 'Origin of the state, Predynastic and Early Dynastic Egypt', Toulouse (France), 5th-8th September 2005*. *Orientalia Lovaniensia Analecta* 172. Leuven: 763-782.
- MACZYŃSKA, A., 2011. Lower Egyptian-nagada transition: a view from Tell el-Farkha [in:] FRIEDMAN, R.F. & FISKE, P.N. (ed.), *Egypt at its Origins 3, Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt", London, 27th September-1st August 2008*. *Orientalia Lovaniensia Analecta* 205. Leuven: 879-908.
- MIDANT-REYNES, B., 2007. Tell al-Iswid [in:] PANTALACCI, L. & DENOIX, S. (eds.), *Travaux de l'Institut français d'archéologie orientale en 2006-2007*. *BIFAO* 107:272-275.
- MIDANT-REYNES, B.; BRIOIS, F.; BUCHEZ, N.; DE DAPPER, M.; DUCHESNE, S.; FABRY, B.; HOCHSTRASSER-PETIT, C.; STANIASZEK, L. & TRISTANT, Y., 2003a. Kôm el-Khilgan: un nouveau site dans le Delta. *Archéo-Nil* 13: 55-64.
- MIDANT-REYNES, B.; BRIOIS, F.; BUCHEZ, N.; DE DAPPER, M.; DUCHESNE, S.; FABRY, B.; GHEMEL, D.; HOCHSTRASSER-PETIT, C.; MARCHAND, S.; STANIASZEK, L. & TRISTANT, Y., 2003b. *Kôm el-Khilgan 2003. Rapport préliminaire de la deuxième campagne de fouille*. Rapport interne, Toulouse, Centre d'Anthropologie de Toulouse.
- MIDANT-REYNES, B., BRIOIS, F., BUCHEZ, N., DE DAPPER, M., DUCHESNE, S., FABRY, B., HOCHSTRASSER-PETIT, C., STANIASZEK, L. & TRISTANT, Y., 2004. Kom el-Khilgan. A new site of the Predynastic period in Lower Egypt. The 2002 campaign [in:] HENDRICKX, S., FRIEDMAN, R.F., CIAŁOWICZ, K.M. & CHŁODNICKI, M. (eds.), *Egypt at its origins. Studies in memory of Barbara Adams. Proceedings of the international conference 'Origin of the state. Predynastic and Early Dynastic Egypt', Kraków, 28th August-1st September 2002*. *Orientalia Lovaniensia Analecta* 138. Leuven: 465-486.
- PETRIE, W.M.F., 1921. *Corpus of Prehistoric Pottery and Palettes*. London.
- PETRIE, W.M.F., 1953. *Ceremonial slate Palettes, Corpus of Proto-Dynastic Pottery*. London.
- RAMPERSAD, S. R., 2007. Tell el-Masha'la: A Predynastic/Early Dynastic site in the Eastern Nile Delta [in:] KROEPER, K., CHŁODNICKI, M. & KOBUSIEWICZ, M. (eds.), *Archaeology of early Northeastern Africa. In memory of Lech Krzyżaniak*. Studies in African Archaeology 9. Poznań: 789-816.
- RAUE, D., 1999. Ägyptische und nubische Keramik der 1.-4.Dynastie [in:] KAISER, W.; ARNOLD, F.; BOMMAS, M.; HIKADE, T.; HOFFMAN, F.; JARITZ, H.; KOPP, P.; NIEDERBERGER, W.; PAETZNICK, J.-P.; PILGRIM, B. VON; PILGRIM, C. VON; RAUE, D.; RZEUSKA, T.; SCHATEN, S.; SEILER, A.; STALDER, L.; ZIERMANN, M., *Stadt und Tempel von Elephantine 25./26./27. Grabungsbericht*. *MDAIK* 55: 173-189.
- RIZKANA, I. & SEEHER, J., 1985. The Chipped Stones at Maadi: Preliminary Reassessment of a Predynastic Industry and its Long-Distance Relations. *MDAIK* 41:237-254.
- RIZKANA, I. & SEEHER, J., 1987. *Maadi I: The pottery of the Predynastic settlement*. Archäologische Veröffentlichungen 64. Mainz am Rhein.
- RIZKANA, I. & SEEHER, J., 1990. *Maadi IV. The Predynastic cemeteries of Maadi and Wadi Digla*. Archäologische Veröffentlichungen 81. Mainz am Rhein.
- SCHMIDT, K. 1989. Die lithischen Kleinfunde [in:] VON DER WAY, T. mit Beiträgen von KÖHLER, CH. und SCHMIDT, K., *Tell el-Fara'in - Buto. 4. Bericht*, *MDAIK* 45: 275-307.
- SCHMIDT, K., 1992a. Tell el-Fara'in/Buto and Tell el-Iswid (south): The Lithic Industrie from the Chalcolithic to the Early Old [in:] VAN DEN BRINK, E.C.M. (ed.), *The Nile Delta in transition: 4th-3rd. millennium B.C. Proceedings of the seminar held in Cairo, 21-24. October 1990, at the Netherlands Institute of Archaeology and Arabic Studies*. Tel Aviv:31-42.
- SCHMIDT, K., 1992b. Tell Ibrahim Awad: A Preliminary Report on the Lithic Industries [in:] VAN DEN BRINK, E.C.M. (ed.), *The Nile Delta in transition: 4th-3rd. millennium B.C. Proceedings of the seminar held in Cairo, 21-24. October 1990, at the Netherlands Institute of Archaeology and Arabic Studies*. Tel Aviv:79-96
- SCHMIDT, K., 1993. Comments to the lithic industry of the Buto-Maadi culture in Lower Egypt [in:] KRZYŻANIAK, L., KOBUSIEWICZ, M., & ALEXANDER, J. (eds.), *Environmental change and human culture in the Nile basin*

- and Northern Africa, until the second millennium B.C. *Studies in African Archaeology* 4. Poznań: 267-277.
- TASSIE, G.J.; HASSAN, F.A.; VAN WETERING, J. & CALCOEN, B., 2008. Corpus of potmarks from the Protodynastic to Early Dynastic Cemetery at Kafr Hassan Dawood, Wadi Tumilat, East Delta, Egypt [in:] MIDANT-REYNES, B. & TRISTANT, Y. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference "Origins of the State. Predynastic and Early Dynastic Egypt" Toulouse (France), 5<sup>th</sup>-8<sup>th</sup> September 2005*. Orientalia Lovaniensia Analecta 172. Leuven-Paris:489-500: 203-235.
- TRISTANT, Y., 2005. *L'occupation humaine dans le delta du Nil aux 5<sup>e</sup> et 4<sup>e</sup> millénaires. Approche géoarchéologique à partir de la région de Samara (delta oriental)*, 3 vol. (unpublished PhD, Toulouse).
- TRISTANT, Y.; DE DAPPER, M.; AUSSEL, S.; MIDANT-REYNES, B., 2008. Cultural and natural environment in the Eastern Nile Delta: a geoarchaeological project at Tell el-Iswid (Nile Delta) [in:] R.F. & McNAMARA, L. (eds.), *Abstracts of papers presented at The Third International Colloquium on Predynastic and Early Dynastic Egypt*. London 2008: 171-173.
- VAN DEN BRINK, E.C.M., 1989. A transitional Late Predynastic-Early Dynastic settlement site in the Northeastern Nile Delta, Egypt. *MDAIK* 45: 55-108.
- VAN DEN BRINK, E.C.M. 1992. Preliminary report on the excavations at Tell Ibrahim Awad, seasons 1988-1990 [in:] VAN DEN BRINK, E.C.M. (ed.), *The Nile Delta in transition: 4th-3rd. millennium B.C. Proceedings of the seminar held in Cairo, 21-24. October 1990, at the Netherlands Institute of Archaeology and Arabic Studies*. Tel Aviv: 43-69.
- VAN DEN BRINK, E.C.M., 1993. Settlement patterns in the northeastern Nile Delta during the fourth-second millennia B.C. [in:] KRZYŻANIAK, L.; KOBUSIEWICZ, M. & ALEXANDER, J. (eds.), *Environmental change and human culture in the Nile Basin and Northern Africa*. *Studies in African Archaeology* 4. Poznań: 279-304.
- VAN DEN BRINK, E.C.M., 1996. The Incised Serekh-signs of Dynasties 0-1. Part I: Complete Vessels [in:] SPENCER, A.J. (ed.) (1996), *Aspects of Early Egypt*. London: 140-174.
- VAN DEN BRINK, E. C. M., 2001. The Pottery-Incised Serekh-Signs of Dynasties 0-1 Part II: Fragments and additional Complete Vessels. *Archéo-Nil* 11: 23-100.
- VAN HAARLEM, W.M., 1995. Temple Deposits at Tell Ibrahim Awad - a preliminary report. *GM* 148:45-52.
- VAN HAARLEM, W.M., 1998. The Excavations at Tell Ibrahim Awad (Eastern Nile Delta): Recent Results [in:] C.J. EYRE (ed.), *Proceedings of the Seventh International Congress of Egyptologists, Cambridge, 3-9 September 1995*. Leuven 1998: 509-513.
- VON DER WAY, T., 1997. *Tell el-Fara'in - Buto I. Ergebnisse zum frühen Kontext. Kampagnen der Jahre 1983-1989*. Archäologische Veröffentlichungen 83. Mainz.
- WENGROW, D., 2006. *The archaeology of Early Egypt: Social transformation in north-east Africa, 10,000 to 2650 BC*. Cambridge.
- WILSON, P., 2006. Prehistoric Settlement in the Western Delta: a regional and local view from Sais (Sa el-Hagar). *JEA* 92: 75-126.
- WODZIŃSKA, A., 2000. The Early Dynastic Pottery from the Trenches C2-C3 and D1-D4 [in:] FALTINGS, D.; BALLE, P.; FÖRSTER, F.; FRENCH, P.; IHDE, CH.; SAHLMANN, H.; THOMALSKY, J.; THUMSHIRN, CH. & WODZIŃSKA, A., *Zweiter Vorbericht über die Arbeiten in Buto von 1996 bis 1999*. *MDAIK* 56: 154-158.
- ZDZIEBŁOWSKI, S., 2008. Some remarks on the earliest settlement mudbrick structures in Egypt. *GM* 217:111-122.