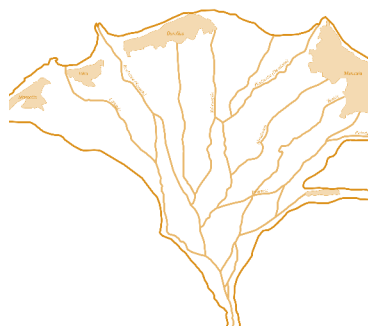


# The Nile Delta during the Early Dynastic and the Old Kingdom periods. Preliminary remarks on the evolution of settlement landscape



**Abstract:** The 3rd millennium BC appears to be a key period of development of the historical settlement landscape in ancient Egypt. The unification of the country speeded up significantly processes of transformation of the predynastic socio-political structures and the associated settlement patterns. Old chiefdoms declined and vanished along with their centers and elites. New settlement emerging in various parts of the country was often strictly related to central authorities and the formation of a new territorial administration. Neither was the climatic change, which resulted in a shifting ecumene, negligible. Although these changes were evolutionary in their nature, some important stages may be recognized. Data from surveys and excavations have demonstrated a number of considerably impoverished and/or abandoned sites from before the Old Kingdom and its very beginning, while some important Egyptian settlements emerged in the sources and began to build their prosperity during the Third and Fourth Dynasties. The written sources as well as recorded architectural remains indicate a growing interest on the part of the state in the hierarchy of landscape elements and the territorial structure of the country.

**Keywords:** Nile Delta, Early Dynastic, Old Kingdom, settlements, settlement landscape

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The article was intended as an introduction to project research undertaken by the author and was foreseen for publication elsewhere. Written at the turn of 2016, it forms a consistent whole and as such has not been updated. All additional data, analyses and results of the research for which it served as a starting point are planned for separate publication.

## INTRODUCTION

The Nile Delta, an alluvial land created by the branches of the river and the distributaries, is one of the largest deltas in the world, covering an area of 17,000 km<sup>2</sup>. About 58% of cultivated land in Egypt is in the delta today, corresponding roughly to the figures for ancient times (Butzer 1975: 1043; 2002: 84). Its agricultural potential as well as convenient location at the intersection of trade routes from the Levant to Upper Egypt and Libya made the Nile Delta one of the most attractive areas for human occupation.

Based on several decades of geological and geoarchaeological research (Attia 1954; Butzer 1976; van Wesemael, de Wit, and van Stralen 1988; Wunderlich 1993), it has been determined that the most suitable sites for settlement were the so-called “turtlebacks” or *geziras*, hillocks of coarse Pleistocene sands and gravels, rising above the Holocene-age alluvia, especially in the southern and eastern Nile Delta. The proximity to the agricultural floodplain influenced the founding of settlements on the edges of the turtlebacks, while their tops were sometimes occupied by cemeteries. Besides *geziras*, an important role in settlement geography was played by levees, high sand banks left by moving river beds (Butzer 1975: 1044–1045; 1976: 22–23).

Examination of Nile Delta settlement from the 3rd millennium BC is a problematic task especially in view of many cases of remains of Early Dynastic and Old Kingdom date being buried deep below thick alluvial deposits. Sites are located at the bottom of mounds that were formed over centuries of human activity in given places. Some of these sites can be dated to the Early Dynastic and Old Kingdom periods only on the basis of written sources. The capital city of Memphis is a case in point. Despite copious evidence in the form of administrative documents, royal and elite tombs and related special-purpose settlements, there are no archaeological remains of the Early Dynastic and Old Kingdom city itself (Jeffreys and Tavares 1994; Love 2003). In some cases, it is not certain whether a particular name is related to a specific locality or rather an area (see Xoïs; *Table 1*: No. 48).

Another factor is the state of investigation of individual sites, which is still unsatisfactory despite a significant increase in research over the past 30 years.<sup>1</sup> In-depth studies of the problem are further compromised by many tells from the 3rd millennium BC having been levelled or destroyed. Even had a site stood the test of time, the uppermost levels could have been lost, making a review of older surveys very difficult. The selective interests of researchers have also played a part. Most of the studies

1 Among others: Amsterdam University Survey Expedition to the North-Eastern Nile Delta; Munich East-Delta Expedition; Italian Archaeological Mission of the “Centro Studi e Ricerche Ligabue” Venice to the Eastern Nile Delta; Canadian Expedition – University of Toronto (Tell Gabbara, Tell Masha’la); the French Centre d’Antropologie, CNRS, Toulouse (Kom el-Khilgan, Tell el-Iswid); Institut Français d’archéologie orientale in Cairo (Tell el-Samarra); Polish Archaeological Expedition to the Eastern Nile Delta (Tell el-Farkha) and Polish Archaeological Expedition to the Northeastern Nile Delta (Tell el-Murra, Tell el-Halyat, Tell Akhdar, Tell Gezira el-Faras, Minshat Radwan).

have focused on the Predynastic and Early Dynastic periods, while the Old Kingdom continues to receive less attention. So far, only Edwin C.M. van den Brink (1987; 1988; 1993) and Karla Kroeper (1989) have taken up the issue of the Delta settlements

through the end of the Old Kingdom in any greater extent.

A review and reexamination of the available, published data 30 years later gives a solid base for more in-depth research to follow.

## METHODOLOGY

A review of the material has led to the identification of 96 sites<sup>2</sup> from different times in the 3rd millennium BC, located in the Nile Delta and the Memphite area<sup>3</sup> [Table 1]. Four of these sites were documented only on the basis of written records, while for another 18 written sources were a significant complement. Five sites are known thanks to chance discoveries or illicit digging, but only in two cases the dating is based on archaeological finds alone. Surveys including surface collection and/or core drillings identified 69 sites (the only source of data for 28 of them).<sup>4</sup> 57 sites were excavated, although in many cases only to a limited extent (i.e., test trenches) and/or results have not been fully published. In some cases, the results have never been published. About 30 sites might be considered as excavated and published properly; however only in 13 cases (Giza, Kom el-Hisn, Tell

Basta, Tell el-Fara'in, Tell el-Farkha, Tell el-Gabbara, Tell el-Iswid (N), Tell el-Iswid (S), Tell el-Masha'la, Tell el-Murra, Tell el-Rub'a, Tell el-Samarra, Tell Ibrahim Awad) were settlement structures uncovered on a wider scale.

About 34 sites were recognized as consisting of only settlement remains versus 21 sites with just sepulchral finds. In 30 cases, the site included both settlement remains and burials. Data from nine sites are not conclusive. Moreover, some of the sites were recognized based on characteristic pottery types, such as bread moulds or bowls and, less frequently, flint tools (see Junker 1928; Junker et al. 1930; van den Brink 1988; Kroeper 1989). In fact, the assumption based on available data and already recognized sites (i.e., Tell el-Farkha, Tell el-Murra, Tell el-Iswid (S), Tell el-Samarra, Tell Ibrahim Awad etc.) is that Delta settlements and cemeteries were

2 The following statistics do not include settlements known from written sources but not located on the ground. The exception is Memphis, which has been included in the analysis even though the exact location of the 3rd millennium BC remains is not known. A field of ruins in the area of Mit Rahina was considered as a reference point.

3 The analysis also does not take into account the distinctness of settlements located within the area of individual sites in the Memphite Necropolis. For this reason, Giza and Saqqara were counted as single sites despite the potential existence of separate "pyramid towns" or "workers' villages" within the perimeters of the modern archaeological sites. The southern extent of the study was set at Dahshur, which is the southernmost site included in the royal necropolis of Memphis.

4 Many of these sites, especially those in the Western Delta, were mentioned only once. This is particularly characteristic of sites recognized by Hermann Junker in the 1920s (Junker 1928; Junker et al. 1930).

situated usually in close relation to one another, occupying the same tell or kom.<sup>5</sup>

The presented sites are dated to the Early Dynastic and Old Kingdom periods. However, precise chronologies in the case of individual sites may be challenging. Much as the chronology of the Early Dynastic sites appears to be fairly well known, that of the Old Kingdom ones is still unclear. In many cases,<sup>6</sup> there is only a general note on the Old Kingdom remains, without any link to a specific dynasty or even an attribution to the early or late phase of the period. This leads to significant difficulties in recognizing the dynamics of change in the settlement pattern over such a long and important time. Keeping these restrictions in mind, the following analysis adopted a three-phase division of development in the 3rd millennium BC based on the available evidence: Early Dynastic (First–Second Dynasties), early Old Kingdom (Third–Fourth Dynasties), and late Old Kingdom (Fifth–Sixth Dynasties).

For some of the sites (e.g., Abu Sir Bana/Busiris, Damanhur or Sa el-Hagar/Sais), data from the written sources were decisive for establishing a chronological framework (based mainly on Zibelius 1978). As regards the sites identified on the basis of older and unpublished studies, Kroeper's dissertation (1989), in which she reexamined the archaeological material and verified available sources, greatly contributed to the present study. Her findings were supplemented by the results of more recent surveys, excavations and

studies. Extant lists of sites of respective chronology contributed significantly to the analysis (van den Brink 1987: Table 2; 1993: Fig. 5; Chłodnicki, Fattovich, and Salvatori 1992a: Table 1; Hendrickx and van den Brink 2002: Tables 23.1 and 23.2; Jucha 2016; EES Delta Survey database, <https://www.ees.ac.uk/delta-survey>). Moreover, the following procedures were followed in cases of uncertain chronology:

1. In doubtful cases, the rule was to assume no settlement hiatus if there was no reasonable indication. For example, sites undoubtedly occupied during the Early Dynastic Period and the late Old Kingdom, were assumed to be occupied also during the early Old Kingdom. The sites of the Memphite Necropolis were an exception, the occupational history there being governed by a different set of rules.

2. In the case of sites dated undoubtedly to the Early Dynastic period, where some amount of unclassified Old Kingdom material was found, it was assumed that the site was abandoned no later than during the early Old Kingdom.

3. If the earliest finds on a site were dated to the Old Kingdom and the site was occupied during the First Intermediate Period and the Middle Kingdom, the site was assigned to the late rather than early Old Kingdom.

4. If the dating was broadly to the Old Kingdom, the site would be assigned to both the early and the late Old Kingdom, although sometimes it could be identified as a site with unreliable chronology.

5 Sites located along the edges of the Delta could be an exception, but there is not enough data to verify this assumption.

6 It concerns especially older research, for example surveys made by Junker, but also later, see van den Brink 1987: Table 2; 1993: Fig. 5.

Table 1. The Nile Delta sites during the Early Dynastic and Old Kingdom period

Type: S – settlement; C – cemetery. Sources: SF – single finds; W – written sources; S – surveys (including drillings); E – excavations (including test trenches). Chronology: ED – Early Dynastic; EOK – early Old Kingdom; LOK – late Old Kingdom. Other: EES DS – Egypt Exploration Society Delta Survey

No.	MODERN NAME	ANCIENT NAME	SOURCE	TYPE	CHRONOLOGY
1.	Abu Ghalib	Unknown	W?, S, E	S, C	ED, EOK, LOK
2.	Abu Ghurab	Unknown	E	C	ED, LOK
3.	Abu Rowash	Unknown	E	S, C	ED, EOK, LOK
4.	Abu Sir Bana	<i>Ddw / Pr-wšjr / Busiris</i>	W, SF	S, C	LOK
5.	Abusir	Unknown	E	S, C	ED, EOK, LOK
6.	Ashmun	<i>Hrtj dḥwtj</i>	W	S	EOK
7.	Aulad Dawud	Unknown	E, S	S, C	ED, EOK, LOK
8.	Behbeit el-Hagar	<i>Ntrw</i>	W	S	EOK, LOK
9.	Beni Amir	Unknown	S, E	C	ED, EOK?
10.	Dahshur	<i>H'j Šnfrwj</i> (pyramid town of Snofru)	W, E	S, C	EOK, LOK
11.	Damanhur	<i>Dmjt / Dmjt (Hr) / Hermopolis Parva</i>	W, S, E	S	ED, EOK, LOK
12.	el-Baraniya	Unknown	S	C	EOK?, LOK
13.	el-Birqash	Unknown	S	C?	ED, EOK?, LOK
14.	el-Burdan ?*	<i>H3mwT</i>	W	S	LOK
15.	el-Masara	Unknown	E	C	ED, EOK
16.	el-Qatta	<i>Bwt ?</i>	W?, S, E	S, C	ED, EOK, LOK
17.	el-Shaqafiya	Unknown	S	?	ED
18.	el-Rubaiyin	Unknown	E	C	LOK
19.	Gebel el-Nahya	Unknown	S?	C	EOK?, LOK?
20.	Gezira Sangaha	Unknown	S, E	C	ED
21.	Giza**	Unknown	W?, E	S, C	ED, EOK, LOK
22.	Hamsa	Unknown	S	?	EOK, LOK

\* Location unknown. Area of Lake Mareotis, 3rd nome LE.

\*\* Kafr Ghattati and Kafr Batran included.

REFERENCES	No.
Junker 1928; Larsen 1936; Kroeper 1989	1.
Kaiser 1964; Porter and Moss 1978; Leclant and Clerc 1990; 1991; 1992; 1993; 1994; Radwan 1995; Boessneck, von den Driesch, and Eissa 1992; Jeffreys and Tavares 1994; Hendrickx and van den Brink 2002; Bárta 2013a	2.
Montet 1938; Klasens 1957; 1958a; 1958b; 1959; 1960; 1961; Kaiser 1964; Hawass 1980; Kessler 1982; Hendrickx and van den Brink 2002; Valloggia 2011	3.
Yoyotte 1958; Fischer 1976; Zibelius 1978; Kessler 1982; Kroeper 1989; EES DS No. 77	4.
Bonnet 1928; Kaiser 1964; von Beckerath 1975; Porter and Moss 1978; Jeffreys and Tavares 1994; Hendrickx and van den Brink 2002; Bárta 2002; 2013b; Verner et al. 2006	5.
Zibelius 1978	6.
Kroeper 1989; EES DS No. 664	7.
Zibelius 1978; EES DS No. 83	8.
Leclant 1973; 1976; Bietak 1975; Kessler 1982; Kroeper 1989; Krzyżaniak 1989; Abd el-Hagg Ragab 1992; Hendrickx and van den Brink 2002	9.
Fakhry 1959; 1961; Wildung 1975; Porter and Moss 1978; Zibelius 1978; Kessler 1982; Faltings 1989; Stadelmann et al. 1993; Alexanian and Seidlmayer 2002; Bárta 2013c	10.
Evers 1929; Kaiser 1964; Zibelius 1978; Kroeper 1989	11.
Junker 1928; Kessler 1982; Kroeper 1989	12.
Junker 1928; Kessler 1982; Kroeper 1989	13.
Zibelius 1978	14.
Larsen 1940a; 1940b; Kessler 1980; 1982; Hendrickx and van den Brink 2002	15.
Chassinat, Gauthier, and Piéron 1906; Junker 1928; Brunner 1952–1953; 1954–1956; Leclant 1950; 1952; 1953; 1954; Kaiser 1964; Kessler 1982; Gomaà 1984; Kroeper 1989; Hendrickx and van den Brink 2002	16.
Neuffer, Bittel, and Schott 1932; Kroeper 1989; EES DS No. 529	17.
Daressy 1902; Porter and Moss 1934; Kessler 1982; Kroeper 1989	18.
Jones 1995?	19.
Fischer 1958; Bietak 1975; Kessler 1982; van den Brink 1987; Kroeper 1989; Krzyżaniak 1989; Hendrickx and van den Brink 2002; Jucha 2009; EES DS No. 592	20.
Covington 1905; Daressy 1905; Petrie 1907; Hassan 1932; 1936; 1941; 1943; 1944; 1946; 1948; 1950; 1953a; 1953b; 1960; Kaiser 1964; Saleh 1974; Porter and Moss 1978; Kessler 1982; Engles 1990; Hendrickx and van den Brink 2002; Lehner 2002; Lehner, Kamel, and Tavares 2009; Lehner et al. 2011	21.
Brewer et al. 1996	22.

Table 1 (continued)

No.	MODERN NAME	ANCIENT NAME	SOURCE	TYPE	CHRONOLOGY
23.	Helwan	Unknown	E	C	ED, EOK
24.	Kafr Hakim (Barakat Drain)	Unknown	S, E	S	EOK?, LOK
25.	Kafr Hassan Dawud	Unknown	E	C	ED
26.	Kanasiyet el-Saradusi	Unknown	S	?	ED
27.	Kom Abu Awali	Unknown	S, E	?	ED, EOK
28.	Kom Abu Billo	<i>Pr-Ḥwt-Ḥr-(nbt)Mfḳ3t / Terenuthis</i>	E	C	LOK
29.	Kom Ausim	<i>Ḥm / Letopolis</i>	W, S	S, C	EOK, LOK
30.	Kom Aziza	Unknown	S	S?	LOK?
31.	Kom el-Ahmar I	Unknown	S	?	EOK, LOK
32.	Kom el-Ahmar II	Unknown	S	?	EOK, LOK
33.	Kom el-Hisn	<i>Ḥwt jh(w)t / Jmw / Jm3w / Momemphis</i>	W, S, E	S, C	ED, EOK, LOK
34.	Kom el-Khilgan	Unknown	S, E	S, C	ED, EOK
35.	Kom el-Qanatar	Unknown	S, E	S	ED
36.	Kom Om Sir	Unknown	S	S	ED, EOK
37.	Kufur Nigm / Ezbet el-Tell	Unknown	S, E	S, C	ED, EOK
38.	Maadi	Unknown	E	C	ED
39.	Masr Gedida	<i>Jwnw / Heliopolis</i>	W, S, E	S, C	ED, EOK, LOK
40.	Merimde Benisalame	Unknown	S, E	C	ED
41.	Minshat Abu Omar	Unknown	S, E	S, C	ED
42.	Minshat Ezzat	Unknown	E	C	ED
43.	Minshat Radwan	Unknown	S	?	ED
44.	Mit Rahina	<i>Jnb / Jnp ḥd / Jnbw ḥd / Memphis</i>	W, S, E	S	ED, EOK, LOK
45.	Old Cairo	<i>Ḥrj ḥ3 / Babilon</i>	W,	S, C	ED, EOK?
46.	Quesna	Unknown	S, E	C	EOK
47.	Sa el-Hagar	<i>S3w / Sais</i>	W, S, E	S	ED, EOK, LOK
48.	Sakha	<i>Ḥ3sw[w] / Xoïs</i>	W?	S	EOK?, LOK?
49.	Saqqara	Unknown	E	S?, C	ED, EOK, LOK

REFERENCES	No.
Saad 1942; 1943; 1946; 1947; 1951; 1954; 1957; 1969; el-Banna 1990; Jeffreys and Tavares 1994; Köhler 1998; 2000; 2005; 2014; Hikade 1999; Hendrickx and van den Brink 2002; Köhler and Jones 2009	23.
Jones 1995	24.
Salim el-Hangary 1992; Bakr, Abd el-Moneim, and Selim 1996; Lovell 2001; Hendrickx and van den Brink 2002; van Wetering and Tassie 2003; Hassan et al. 2004; EES DS No. 221	25.
Kroeper 1989	26.
Daessy 1912; Kroeper 1989	27.
Leclant 1971; 1972; 1973; Farid 1973; Kessler 1982; Kroeper 1989; EES DS No. 729	28.
Junker 1928; Zibelius 1978; Kessler 1982; Kroeper 1989; EES DS No. 308	29.
EES DS No. 626	30.
Brewer et al. 1996; EES DS No. 176	31.
Brewer et al. 1996	32.
Zibelius 1978; Kessler 1982; Wenke et al. 1988; Kroeper 1989; Cagle 2003; Wenke, Redding, and Cagle 2016; EES DS No. 24	33.
Buchez and Midant-Reynes 2007; 2011; Tristant, De Dapper, and Midant-Reynes 2008; Hendrickx and van den Brink 2002; EES DS No. 607	34.
Scharff 1926; Kroeper 1989; Wilson and Grigoropoulos 2009; EES DS No. 385	35.
Chłodnicki, Fattovich, and Salvatori 1992a; Hendrickx and van den Brink 2002; EES DS No. 341	36.
Leclant 1963; 1964; 1983; Fischer 1963; Müller 1966; Bietak 1975; Kessler 1982; Leclant and Clerc 1985; 1986; 1991; Bakr 1988; 1994; 2003; Kroeper 1989; Krzyżaniak 1989; Hendrickx and van den Brink 2002; EES DS No. 193	37.
Brunton 1939; Kaiser 1964; Kessler 1982; Jeffreys and Tavares 1994; Hendrickx and van den Brink 2002	38.
Daessy 1916; Porter and Moss 1934; Zibelius 1978; Habachi 1984; Debono and Mortensen 1988	39.
Junker et al. 1930; Eiwanger 1979; Kessler 1982; Kroeper 1989	40.
Müller 1966; Kessler 1982; Kroeper 1988; 1992; 1994; Kroeper and Wildung 1985; 1994; 2000; Krzyżaniak 1992; 1993; Hendrickx and van den Brink 2002; EES DS No. 222	41.
El-Baghdadi 1999; 2007; Hendrickx and van den Brink 2002; EES DS No. 504	42.
Jucha 2011a; EES DS No. 663	43.
Kemp 1977; Zibelius 1978; Jeffreys and Tavares 1994; Love 2003	44.
Boghdady 1932; Zibelius 1978; Kessler 1982; Hendrickx and van den Brink 2002	45.
Rowland 2011a; 2011b; EES DS No. 639	46.
Zibelius 1978; Kroeper 1989; Wilson 2006; 2011; EES DS. No. 13	47.
Breasted 1906/2001; EES DS No. 10	48.
Barsanti 1901b; 1902; Quibell 1907; 1908; 1913; 1923; Firth 1931; Hassan 1938; Emery 1938; 1939; 1949; 1954; 1958; 1962; Macramallah 1940; Kaiser 1964; Kessler 1982; Munro 1983; 1984; 1993a; 1993b; Jeffreys and Tavares 1994; Hendrickx and van den Brink 2002	49.

Table 1 (continued)

No.	MODERN NAME	ANCIENT NAME	SOURCE	TYPE	CHRONOLOGY
50.	Talya	Unknown	S	C	EOK, LOK
51.	Tell Abu Dawud	Unknown	S	S	EOK, LOK
52.	Tell Abu el-Halyat	Unknown	S	S, C?	ED, EOK
53.	Tell Abu Seifa	<i>msn</i>	W, S	S, C	EOK, LOK
54.	Tell Abu Shieisa	Unknown	S	C?	ED?, EOK?
55.	Tell Atrib	<i>km wr / kw wj / Athribis</i>	W, E	S	ED?, LOK
56.	Tell Basta	<i>B3št / Pr B3št / Bubastis</i>	W, E	S, C	ED, EOK, LOK
57.	Tell Bisintawi	Unknown	E	C	ED, EOK
58.	Tell el-Dab'a el-Qanan	Unknown	S, E	S, C	ED, EOK
59.	Tell el-Dib'a	Unknown	S	S?	ED, EOK, LOK?
60.	Tell el-Dirdir	Unknown	S	S	ED, EOK
61.	Tell el-Abbasiya	Unknown	S	S	ED, EOK, LOK
62.	Tell el-Ain	Unknown	S	S	ED, EOK
63.	Tell el-Akhdar	Unknown	S	S	ED, EOK
64.	Tell el-Balamun	<i>Sm3-n-bḥdt / Diospolis Inferior</i>	W, S, E	S	LOK
65.	Tell el-Fara'in	<i>P, Dp / Dbwt / Buto</i>	W, S, E	S	ED, EOK, LOK
66.	Tell el-Fara'on	<i>Jmt</i>	W, S, E	S, C	ED, EOK, LOK
67.	Tell el-Farkha	Unknown	S, E	S, C	ED, EOK
68.	Tell el-Gabbara	Unknown	E	S	ED
69.	Tell el-Ginidba / Tell Gandiya	Unknown	S, E	S	ED, EOK
70.	Tell el-Ginn	Unknown	SF, S	C	ED
71.	Tell el-Iswid North / Tell Neshed	Unknown	S, E	S, C	ED, EOK
72.	Tell el-Iswid South	Unknown	S, E	S, C	ED, EOK, LOK?
73.	Tell el-Khasna***	Unknown	S	S	ED, EOK
74.	Tell el-Masha'la	Unknown	S, E	S, C	ED, EOK

\*\*\* Considering the dating of the pottery finds, the site appears to have been abandoned during the early Old Kingdom and then reoccupied during the Middle Kingdom.

REFERENCES	No.
Junker 1928; Kessler 1982; Kroeper 1989	50.
van den Brink 1987; 1988; Kroeper 1989; Chłodnicki, Fattovich, and Salvatori 1992a; Hendrickx and van den Brink 2002; EES DS No. 572	51.
Jucha 2011b; EES DS No. 735	52.
Zibelius 1978; Kroeper 1989; EES DS No. 213	53.
Chłodnicki, Fattovich, and Salvatori 1992a; EES DS No. 337	54.
Scharff 1929; Vernus 1980; Kroeper 1989; EES DS No. 56	55.
Habachi 1957; Zibelius 1978; El-Sawi 1979; Leclant and Clerc 1986; 1987; Kroeper 1989; Bakr 1989; Lange 2006; Lange, Ullmann, and Baumhauer 2016; EES DS No. 220	56.
Leclant 1976; Kroeper 1989; Wilson and Grigoropoulos 2009; EES DS No. 333	57.
Chłodnicki et al. 1992a; Brewer et al. 1996; Hendrickx, van den Brink 2002; el-Baghdadi 2008; EES DS No. 172;	58.
Chłodnicki, Fattovich, and Salvatori 1992a; EES DS No. 336	59.
van den Brink 1988; Kroeper 1989; EES DS No. 563	60.
van den Brink 1988; Kroeper 1989; EES DS No. 593	61.
van den Brink 1987; Chłodnicki, Fattovich, and Salvatori 1992a; Hendrickx and van den Brink 2002; EES DS No. 345	62.
van den Brink 1987; 1988; Kroeper 1989; Jucha 2009; 2012; EES DS No. 183	63.
Zibelius 1978; Leclant 1979; Kroeper 1989; EES DS No. 148	64.
Zibelius 1978; Kroeper 1989; Faltings and Köhler 1996; von der Way 1997; Köhler 1998; Faltings et al. 2000; Ziermann 2002; Hendrickx and van den Brink 2002; Hartung et al. 2003; 2007; Hartung, Engel, and Hartmann 2012; Hartung 2015; EES DS No. 4	65.
Zibelius 1978; Mustafa 1988; van den Brink 1988; Kroeper 1989; Krzyżaniak 1989; Hendrickx and van den Brink 2002; EES DS No. 187	66.
Kroeper 1989; Chłodnicki, Fattovich, and Salvatori 1991; 1992a; 1992b; Hendrickx and van den Brink 2002; Chłodnicki, Ciałowicz, and Mączyńska 2012; EES DS No. 334	67.
Rampersad 2008; 2015–2016; EES DS No. 685	68.
van den Brink 1988; Kroeper 1989; Chłodnicki, Fattovich, and Salvatori 1992a; Hendrickx and van den Brink 2002; EES DS No. 182	69.
Fischer 1958; Bietak 1975; Kessler 1982; Kroeper 1989; Krzyżaniak 1989; Hendrickx and van den Brink 2002; EES DS No. 203	70.
van den Brink 1987; 1988; Guyot et al. 2018; EES DS No. 184	71.
van den Brink 1987; 1988; 1989; Kroeper 1989; Hendrickx and van den Brink 2002; Midant-Reynes and Buchez 2014; Bréand 2015; EES DS No. 594	72.
van den Brink 1987; 1988; 1993; EES DS No. 561	73.
van den Brink 1987; Kroeper 1989; Abd el-Hagg Ragab 1992; van den Brink 1993; Hendrickx and van den Brink 2002; Rampersad 2003; 2006; EES DS No. 577	74.

Table 1 (continued)

No.	MODERN NAME	ANCIENT NAME	SOURCE	TYPE	CHRONOLOGY
75.	Tell el-Murra	Unknown	S, E	S, C	ED, EOK, LOK
76.	Tell el-Shaqafiya	Unknown	S, E	S	ED
77.	Tell el-Yehudiyya	Unknown	S, E	S, C	ED, EOK
78.	Tell el-Retaba****	Unknown	S, E	S	ED?, EOK?, LOK?
79.	Tell el-Rub'a	<i>ḥnpt / Ddt / Mendes</i>	S, E	S, C	ED, EOK, LOK
80.	Tell el-Samarra	Unknown	SF, S, E	S, C	ED, EOK
81.	Tell el-Zragy	Unknown	S	S	ED, EOK
82.	Tell Gezira el-Faras	Unknown	S	S	ED, EOK, LOK?
83.	Tell Gherier	Unknown	S, E?	S	ED, EOK, LOK?
84.	Tell Hassanin	Unknown	S	S?	EOK, LOK
85.	Tell Ibrahim Awad	Unknown	S, E	S, C	ED, EOK, LOK
86.	Tell Nishabe	Unknown	S	S?	ED
87.	Tell Samud	Unknown	S	?	ED
88.	Tell Tebilla / Tell Billa	<i>R<sup>c</sup>-nfr / Onuphis*****</i>	S, E	S	LOK
89.	Tell Tennis	Unknown	SF	?	ED
90.	Tell Umm 'Agram	Unknown	S	S	EOK, LOK
91.	Tell Umm el-Zaiyat	Unknown	S	S?	ED, EOK, LOK?
92.	Tida ?	Unknown	SF	?	ED
93.	Tilul Moh. Abu Hasan	Unknown	S	S	EOK, LOK
94.	Tura	Unknown?	E	C	ED, EOK, LOK
95.	Wardan	Unknown	S, E	C	ED, EOK, LOK?
96.	Zawiyet el-Aryan	Unknown	E	C	ED, EOK

\*\*\*\* However, according to Hans Goedicke (1986: 353) as well as Polish-Slovak expedition (J. Hudec, personal communication), currently examining the site, there is no *in situ* remains older than the First Intermediate Period there.

\*\*\*\*\* Ancient name is known from the Middle Kingdom onward.

REFERENCES	No.
van den Brink 1988; Jucha 2009; 2010; Jucha et al. 2013; 2016; Jucha, Bąk-Pryc, and Czarnowicz 2014; Jucha, Bąk-Pryc, and Małecka-Drozd 2015; EES DS No. 493	75.
Neuffer, Bittel, and Schott 1932; Kroeper 1989; EES DS No. 548	76.
Naville 1887; 1890; Petrie and Duncan 1906; Junker et al. 1930; Porter and Moss 1934; Kessler 1982; Zivie 1986; Kroeper 1989; Hendrickx and van den Brink 2002; EES DS No. 311	77.
Petrie and Duncan 1906; Neuffer, Bittel, and Schott 1932; Kroeper 1989; Hendrickx and van den Brink 2002; EES DS No. 219	78.
Hansen, Soghor, and Ochsenchlager 1967; De Meulenaere and MacKay 1976; Zibelius 1978; Holz et al. 1980; Kessler 1982; Kroeper 1989; Friedman 1992; Brewer et al. 1996; Hendrickx and van den Brink 2002; Adams 2009; Redford 2010; EES DS No. 178	79.
Kessler 1982; Kroeper 1989; Krzyżaniak 1989; Chłodnicki, Fattovich, and Salvatori 1992a; Brewer et al. 1996; Hendrickx and van den Brink 2002; El-Baghdadi 2008; Guyot 2016; EES DS No. 175	80.
Brewer et al. 1996; Hendrickx and van den Brink 2002	81.
van den Brink 1987; Chłodnicki, Fattovich, and Salvatori 1992a; Hendrickx and van den Brink 2002; Jucha 2009; 2011a; 2011b; 2016; EES DS No. 351	82.
van den Brink 1987; 1988; Kroeper 1989; Hendrickx, van den Brink 2002; Jucha 2009; 2016; EES DS No. 575;	83.
van den Brink 1987; 1993; Jucha 2016; EES DS No. 573	84.
van den Brink 1988; 1989; 1992; Kroeper 1989; van Haarlem 1996; 1998; 2000; Eigner 2000; Hendrickx and van den Brink 2002; EES DS No. 535	85.
Neuffer, Bittel, and Schott 1932; Kroeper 1989; Hendrickx and van den Brink 2002	86.
Neuffer, Bittel, and Schott 1932; Kroeper 1989	87.
Brewer et al. 1996; Mumford 2001; 2002; G. Mumford, personal communication; EES DS No. 156	88.
Kaiser 1964; Kroeper 1989; Hendrickx and van den Brink 2002; EES DS No. 153	89.
van den Brink 1988; 1993; EES DS No. 568	90.
van den Brink 1988; 1993; Kroeper 1989; Chłodnicki, Fattovich, and Salvatori 1992a; Hendrickx and van den Brink 2002; Jucha 2016; EES DS No. 344	91.
Porter and Moss 1934; Kroeper 1989	92.
van den Brink 1988; Kroeper 1989; EES DS No. 574	93.
Junker 1912; Porter and Moss 1934; Kaiser 1964; El-Khouli 1968; Leclant 1979; Yacoub 1981; Kessler 1982; Jeffreys and Tavares 1994; Hendrickx and van den Brink 2002	94.
Junker 1928; Larsen 1957; Kessler 1982; Kroeper 1989; Hendrickx and van den Brink 2002	95.
Barsanti 1901a; 1906; 1907; Reisner 1936; Kaiser 1964; Porter and Moss 1978; Dunham 1978; Kessler 1982; Jeffreys and Tavares 1994; Hendrickx and van den Brink 2002	96.

### RESULTS

The maps presented here show the distribution of sites in the Nile Delta and in the Memphite area at each of the three stages: Early Dynastic, early Old Kingdom and late Old Kingdom periods [Figs 1, 3, 5, respectively]. The course of the Nile branches, as reconstructed for the Old Kingdom by Karl W. Butzer (1975: Fig. 2) and Manfred Bietak (1975: Fig. 25), constitutes the physical setting of these maps. A different reconstruction of the water courses, based on the research of van den Brink (1993: Fig. 6) and van Wesemael, de Wit, and van Stralen (1988), was adopted for the area

of the northeastern Delta [Figs 2, 4, 6, for the respective stages]. Although the collected data are often ambiguous and the accepted methodology may cause some bias, a preliminary analysis of the results gives a general idea of the rate at which changes were occurring in the Nile Delta during the 3rd millennium BC.

#### EARLY DYNASTIC

To date, the number of recognized sites from the Early Dynastic period amounts to 70 [Fig. 1]. The chronology of three of these is not reliable (marked with triangles). Most of the Early Dynastic

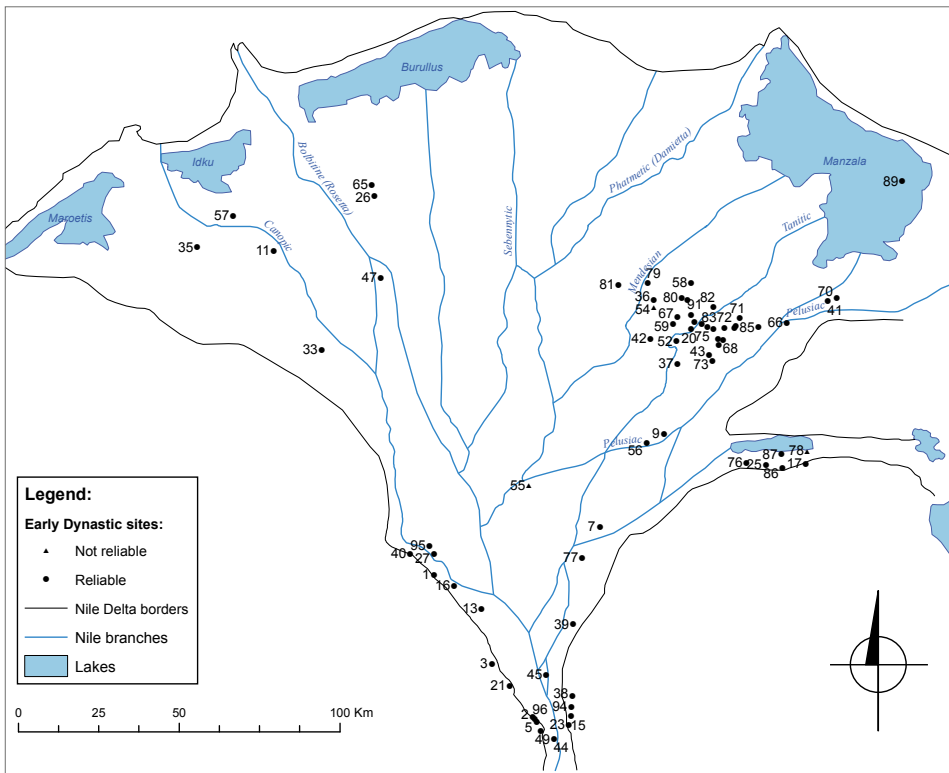


Fig. 1. The Nile Delta during the Early Dynastic period (After Bietak 1975: Fig. 25 | drawing N. Małacka-Drozd)

sites are located in the northeastern part of the Delta, in the area between the former Mendesian, Tanitic and Pelusiatic branches of the Nile [Fig. 2]. The population density there appears to be the highest, with an average distance of less than 4 km between the tells. In some cases the distance is only 1–3 km. Other clusters of sites were observed in Wadi Tumilat, along the southwestern edge of the Delta and in the Memphite area.<sup>7</sup> Single, scattered settlements are visible in the northwestern part of the Delta.

The situation of particular sites during this stage is diverse.<sup>8</sup> A gradual decline of some settlements, especially those located in the northeastern Delta,

is observable from the times of the mid-First Dynasty (presumably the reigns of Djer to Den). Some of them were abandoned as early as the beginning of the Second Dynasty (Kroeper 1988; 2004), while others declined in size and significance. A good example is Tell el-Farkha, where the cult and administrative area on the Western Kom was abandoned, the settlement withdrawing to the Central and Eastern mounds (Chłodnicki 2014: 66).<sup>9</sup> At the same time, other settlements flourished, clearly supported by the crown. New administrative structures were built at Tell el-Fara'in/Buto, the so-called Palace (Hartung 2015: 61), and at Tell el-Rub'a/Mendes, a bakery

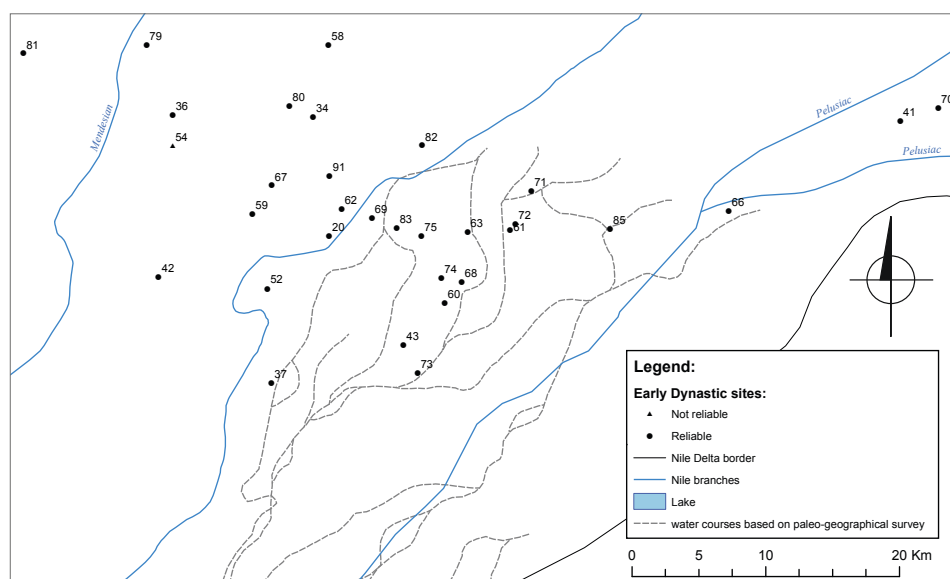


Fig. 2. The northeastern Nile Delta during the Early Dynastic period (After Bietak 1975: Fig. 25 and van den Brink 1992: Fig. 6 | drawing N. Małecka-Drozd)

- 7 It is not certain whether all local cemeteries should be associated with Memphis alone or rather with a greater number of smaller settlements scattered around the city.
- 8 Detailed analysis of the internal structure of settlements, both dated to the Early Dynastic and the Old Kingdom, will be the subject of a separate paper.
- 9 Probably *hwt* was established there.

area west of the temple (Adams 2009: 140–149). This could have coincided with a continuous enlargement of settlement size and specialization at least from the end of the Predynastic period (Hartung et al. 2009: 172–173; Adams 2009: 130; Redford 2010: 18–41). However, concerning the known Early Dynastic (as well as Old Kingdom) settlements in the Nile Delta, little can be said so far about the specifics of their use at the time because of the unsatisfactory level of archaeological investigation of these sites.

**EARLY OLD KINGDOM**

The number of sites dated to the period of the early Old Kingdom is also

70 [Fig. 3]. Nine of them are marked as chronologically unreliable (triangles). Occupation of 52 sites carried over from the Early Dynastic period and 18 sites appear in sources for the first time at the beginning of the Old Kingdom.

Changes were noted in the distribution of particular sites. In the Memphite area, only two sites located at its northern border: Abu Ghurab and Maadi, appear to be abandoned. However, a royal necropolis developed further south and encompassed Dahshur (and, further south, Meidum). Definitely more sites appeared along the southwestern edge of the Delta (six new ones versus one abandoned). In the western Delta,

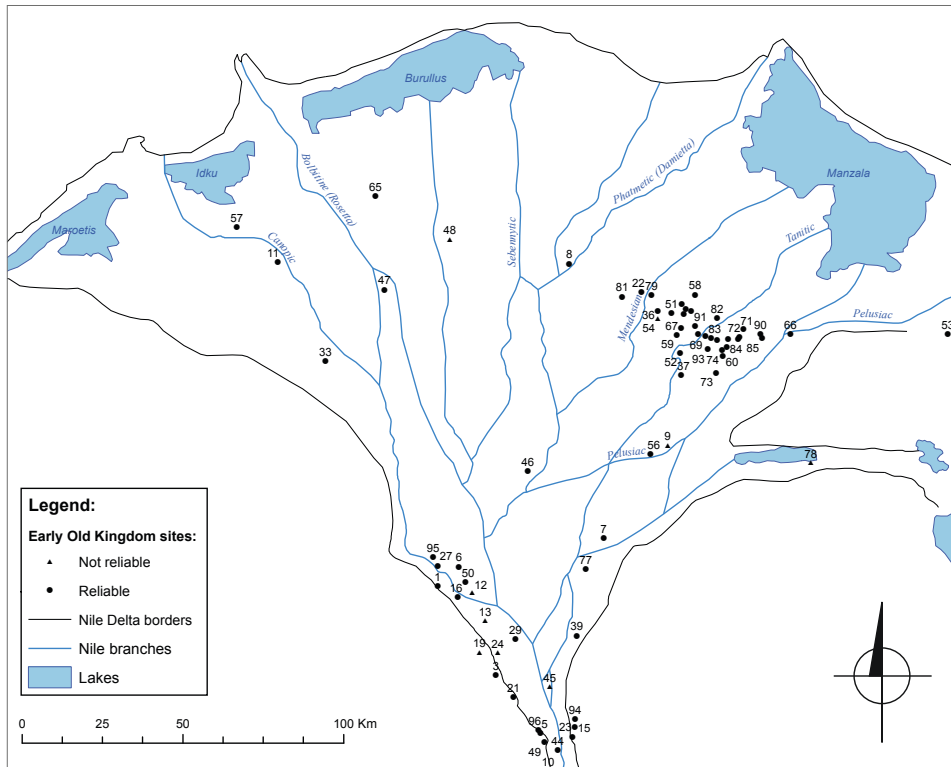


Fig. 3. The Nile Delta during the early Old Kingdom (After Bietak 1975: Fig. 25 | drawing N. Małecka-Drozd)

the situation seems to be more stable: two sites were abandoned, but probably a new one emerged in the sources (Sakha/Xois). Sites in the central Delta, along the Sebennyitic branch of the Nile (Quesna and Behbeit el-Hagar) appeared for the first time during the early Old Kingdom. In the northeastern Delta, the settlement network remained the densest, although some changes occurred [Fig. 4]. A slightly distant group of sites, located farthest to the northwest, along the lower Pelusiac River (Tell Tennis, Tell el-Ginn and Minshat Abu Omar), was finally abandoned. In the area of the greatest density, between the Mendesian, Tanitic and west to the Pelusiac branches, four sites disappeared and seven new ones emerged. A cluster of settlements previously present in Wadi Tumilat vanished. Only one site (Tell el-Retaba), albeit not reliable, is now marked in

the area. Sites probably situated along the upper Pelusiac branch and its distributaries, in the southeastern part of the Delta, continued to exist.

The early Old Kingdom is a time when many old settlements, especially those located in the northeastern Nile Delta, continued to decline and were ultimately abandoned. The most prominent example is Tell el-Farkha (Chłodnicki 2012: Table 1; 2014: 68), although this also applies to less-recognized sites, like Tell Abu el-Halyat (Jucha 2011b), now partly destroyed, but once of considerable size. Smaller settlements were affected by the same trend (Buchež and Midant-Reynes 2007; Midant-Reynes and Buchež 2014; Jucha 2012; Jucha et al. 2013; 2016; Guyot 2016). Nevertheless, there is evidence that some reconstruction took place in centers supported by the state already during the Early Dynastic period. The palace at Tell el-Fara'in/Buto

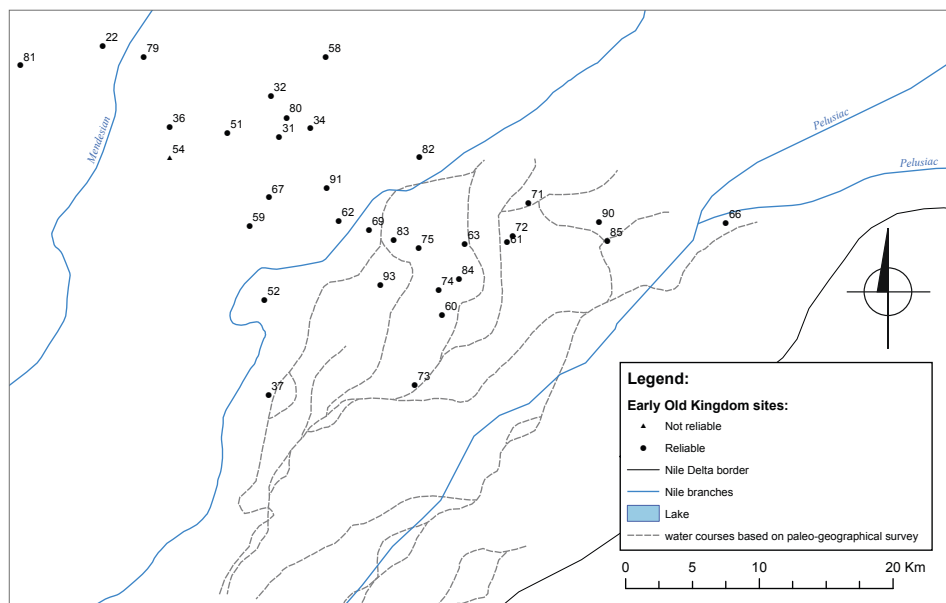


Fig. 4. The northeastern Nile Delta during the early Old Kingdom (After Bietak 1975: Fig. 25 and van den Brink 1992: Fig. 6 | drawing N. Małecka-Drozd)

was deserted at the beginning of the Third Dynasty (Hartung, Engel, and Hartmann 2012: 96–97). There is also evidence of major work inside the later temple and cemetery area at Tell el-Rub'a/Mendes (Adams 2009: 198–200; Redford 2010: 18–24). The sanctuary of Tell Ibrahim Awad was significantly reorganized and reoriented at the beginning of the Old Kingdom and, after some reconstruction during the Fourth–Fifth dynasties, it lasted until the First Intermediate Period (Eigner 2000: 22–29). Finally, the earliest archaeological remains of the settlement and economic area discovered at Kom el-Hisn (Wenke et al. 1988; Wenke, Redding, and Cagle 2016), as well as a mastaba

recently uncovered at Quesna (Rowland 2011a; 2011b) were dated to the early Old Kingdom.

**LATE OLD KINGDOM**

More changes can be observed when comparing the Nile Delta Early Dynastic settlement landscape to that of the late Old Kingdom [Fig. 5]. The total number of sites during this period is only 53, although the chronology of ten of them is not entirely reliable (marked with triangles). 43 sites were occupied already during the early Old Kingdom and 28 of them have an uninterrupted settlement history from the Early Dynastic period. Only ten sites are believed to be new foundations or at least

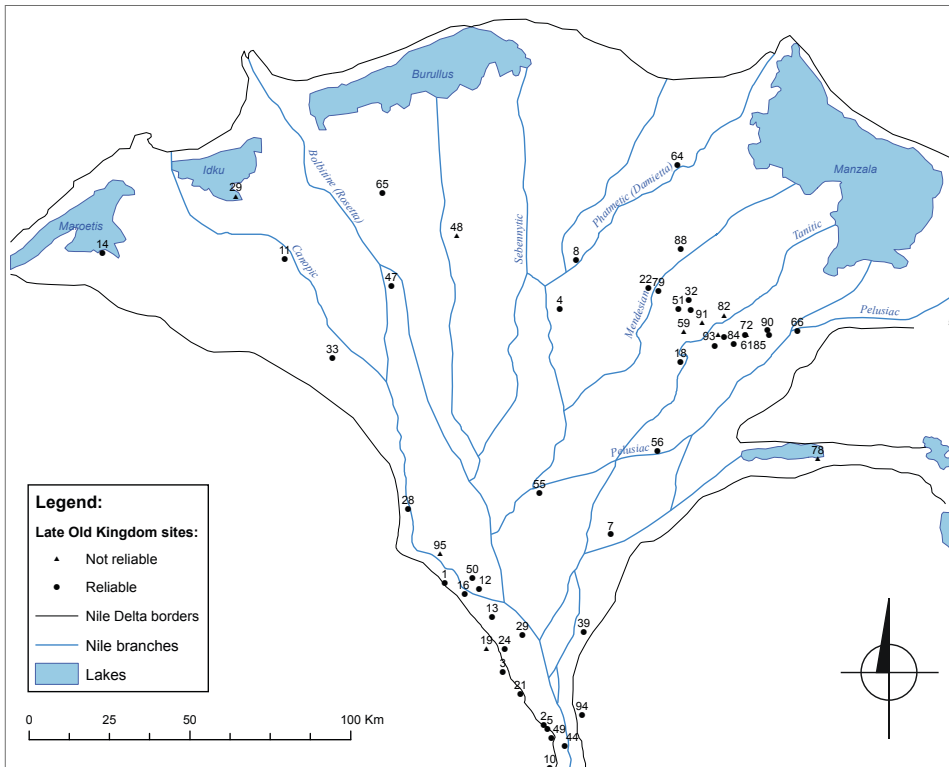


Fig. 5. The Nile Delta during the late Old Kingdom (After Bietak 1975: Fig. 25 | drawing N. Malecka-Droz)

no earlier chronology has been confirmed in their case.

More changes in settlement patterns are evident in the late Old Kingdom period. In the Memphite area, three sites were abandoned and only one was reoccupied (Abu Ghurab, after a hiatus during the early Old Kingdom). As a result, only one late Old Kingdom site (Tura) is recognized on the present west bank of the river. Along the southwestern edge of the Delta, two sites were abandoned, and only one (Kom Abu Billo) appeared. In the northwestern Delta, only one site declined and two emerged, although one of them is present only in the written sources (el-Burdan). In the central Delta, more settlements have

been confirmed along the rivers, which were later known as the Sebennytic and Phatmetic branches. Settlement patterns in the southeastern Delta, as well as in Wadi Tumilat, did not change. However, a fairly remarkable decline is observable in the northeastern Delta, once probably the most densely occupied area in Lower Egypt. The 16 sites that had existed there during the Early Dynastic and early Old Kingdom periods were deserted. Only two sites (el-Rubaiyin in the southern and Tell Tebilla in the northwestern part of the area) emerged instead. The settlement network of the northeastern Nile Delta became more dispersed, with an average distance of about 5 km between sites.

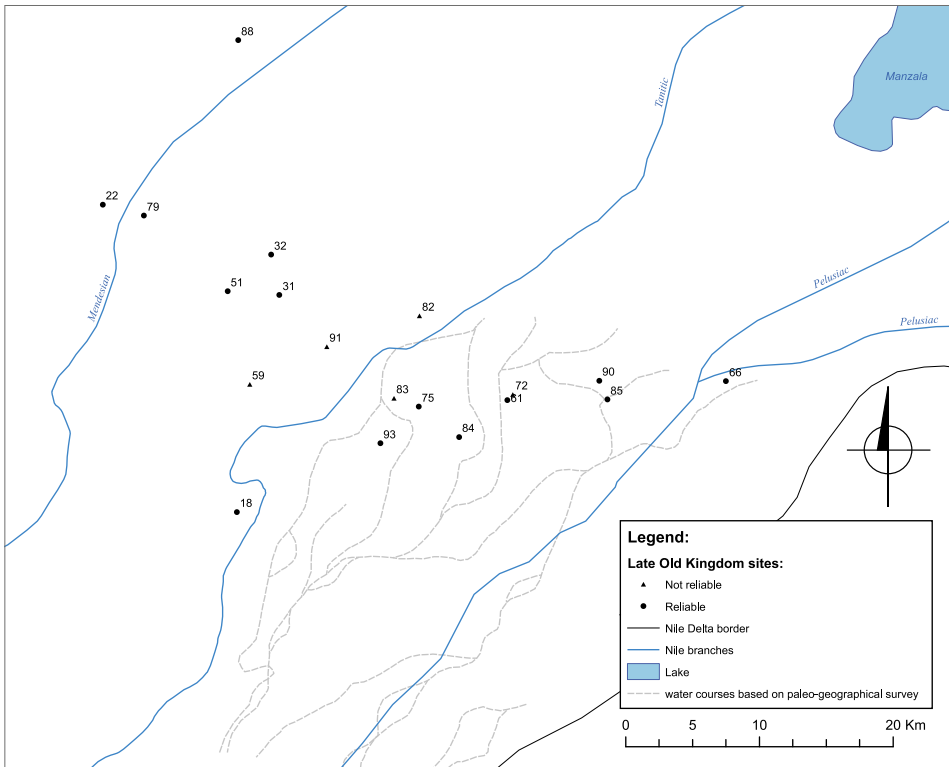


Fig. 6. The northeastern Nile Delta during the late Old Kingdom (After Bietak 1975: Fig. 25 and van den Brink 1992: Fig. 6 | drawing N. Malecka-Droz)

## DISCUSSION

Major evolutionary trends in settlement landscape can be recognized based on this overview of the Delta in the 3rd millennium BC (see Małecka-Drozd 2014). A shift from the densely populated northeastern Delta to the western and southern parts of the region was in place already during the Early Dynastic period. The most important manifestation of the phenomenon is the gradual decline of previously important centers, like Tell el-Farkha, and the rise of centers such as Mendes (the economic and administrative area west of the temple), Buto (the architecture of the so-called Palace), and Sais (the growing cult of Neith, see El-Sayed 1982; Schlichting 1982: 390). In terms of the number of sites, the early Old Kingdom appears to be a period of balance. Even if the number of sites remained the same as in the Early Dynastic period, their location and structure were changing. Some of the eastern Nile Delta sites were gradually abandoned as early as the second part of the Early Dynastic period (e.g., the area of Wadi Tumilat) and the process accelerated in the early Old Kingdom (e.g. Tell el-Farkha, Tell el-Samarra, Tell el-Iswid (N), Kufur Nigm etc.). Others seem at least to diminish in size (e.g., Tell el-Murra, probably also Tell el-Iswid (S)). In contrast to the eastern Delta, the central and western parts witnessed a steady development. The number of sites increased, especially along the southwestern edge of the Delta, although some of them are not chronologically reliable. These parts of Lower

Egypt seem to gain in significance from the beginning of the dynastic period when considering the status of towns located there. Buto (Zibelius 1978: 82–84, 259–262, 266–267; von der Way 1997: 128–129; Hartung 2015: 62), Sais (Zibelius 1978: 195–196; El-Sayed 1982) and Behbeit el-Hagar (Zibelius 1978: 132–133) were all important cultic centres. The mastaba revealed recently at Quesna confirms the existence of a local elite enjoying crown privileges. Kom el-Hisn flourished as a cattle breeding center and an important post in a border area controlling the western nomads (Moreno García 2015). Moreover, it is worth noting that most of the state-controlled estates and royal domains, founded in the beginning of the dynastic period, were indeed located in the western Nile Delta (Jacquet-Gordon 1962).

A significant change is to be observed around the mid-3rd millennium BC. The number of sites had already decreased by about 25% during the late Old Kingdom. The loss is evident primarily in the northeastern Delta. Most sites in the area, even those inhabited from the period of Lower Egyptian Culture (Chłodnicki and Geming 2012; Ciałowicz 2012a; Guyot 2016), were abandoned. Others, like Tell el-Murra (Jucha, Bąk-Pryc, and Małecka-Drozd 2015: 213; Jucha et al. 2016: 101–102), show signs of impoverishment. Continuity of settlement development is recognizable in the central and western parts of the Delta, along the Sebennytic (Damietta), Phatmetic, Bolbitine (Rosetta) and Canopic branches of the Nile.

However, the density of the settlement network there is still clearly lesser than in the eastern part of the Delta. The trend continued even after the end of the Old Kingdom period when many of the old northeastern Delta sites were abandoned and never settled again (van den Brink 1993: 288–289; Malecka-Drozd 2014: 60).

The available data reveals the early Old Kingdom to be a period of crucial importance for the understanding of changes in the Nile Delta settlement landscape. Key questions concern, however, the reasons for the changes on the one hand and the reliability of the results obtained on the other.

The analysis is based on the count and chronology of sites investigated archaeologically, as well as settlements known from written sources that can be identified with a specific, modern locality. However, it should be noted that at least some of the settlements, which appeared in the written sources and the archaeological record for the first time at the beginning of the late Old Kingdom (especially those located in the central and the western Delta, e.g., Abu Sir Bana/Busiris), could have already existed earlier. This would put the number of Early Dynastic and/or early Old Kingdom sites higher than where it is now. If this were true, then the drop in settlement numbers in the late Old Kingdom would also be more pronounced. Moreover, including settlements known only from written sources in the analysis in the future will affect statistics and revise the current understanding.

One of the key issues is the nature of identified settlement clusters, as well as the changes that took place within these

clusters and between them. To some extent, the existence of some of these clusters could be due to the present state of research. Comprehensive research in selected areas (e.g., various surveys between Abu Kebir, Faqus and Simbillawein, Sharqiyyah and Daqahliyyah Governorates or the Junker survey along the upper Rosetta branch) could have falsified the view of settlement patterns (e.g., concentration of sites in the northeastern Delta or along its southwestern edge). However, surveys recently conducted in the central and western Delta by the Egypt Exploration Society (Rowland 2007; Rowland et al. 2009; Wilson and Grigoropoulos 2009; Spencer 2016) have not resulted in a particularly larger number of sites from the beginning of the 3rd millennium BC being recognized in the area. This gives grounds for considering this part of the Nile Delta as less populated, which is confirmed also by the results of recent studies on its geography, population, economic structure and administration (see Moreno García 2015).

The geography of the Nile Delta and the environmental conditions prevailing there certainly made a significant contribution toward establishing a specific settlement landscape and its progressing transformation. These included both climatic changes: gradual desiccation and decline in flood levels (see Bell 1971; Bárta and Bezděk 2008; Hamdan et al. 2016), as well as changes in the number and volume of Nile branches.

The Palermo Stone provides data on the variability of the Nile flood levels in the 3rd millennium BC (Bell 1970). After a time of high floods during the First Dynasty, there was a period of low floods

during the Second Dynasty. Another increase, although on a smaller scale, is noted at the beginning of the Old Kingdom. The flood levels remained more or less unchanged until the Fifth Dynasty, peaking during the reign of Sneferu. From the Sixth Dynasty there is a visible decrease in flood levels, which reached disastrous proportions in the terminal phase of the Old Kingdom and during the First Intermediate Period (Bell 1971; Butzer 1976: 28; Said 1993: 134–142). These data roughly correspond to the changes described above: decline of settlements at the end of the First Dynasty, temporary stabilization of some of them during the early Old Kingdom and further abandonment of sites at the end of the Old Kingdom, crowned by depopulation of at least part of the Delta during the First Intermediate Period (Simpson 2003: 160–161).

However, the flood-level hypothesis does not explain all the observed changes. Despite the stabilization of the Nile, the process of decline of sites in the eastern Delta continued during the early Old Kingdom. Moreover, a significant number of settlements failed before the Sixth Dynasty when there was a sudden drop in the Nile floods. Finally, it seems improbable that the flood levels affected only some settlement clusters, especially in the eastern Delta, and not others.

Part of the explanation could lie in the actual courses of the river distributaries flowing through Lower Egypt at the time. According to Butzer (1975: 1045–1046; 1976: Butzer 1976: 24–26), in the early Holocene the Nile had three major branches in the Delta. They split up in the vicinity of today's Minuf and Semmanud, covering to a greater or lesser

extent the later Phatmetic (Damietta), Bolbitine (Rosetta) and Sebennytic arms of the Nile. In terms of the volume of deposited sediments, the remaining branches known from historical sources—the Mendesian, Tanitic and Pelusiatic—were always of secondary importance. Different branches were active in different times and the most certain way of determining periods of river activity is to trace the presence of a greater number of settlements located along their banks (Butzer 1975; 1976: 24–25; Bietak 1975: 71–112; 1983).

For the beginning of the 3rd millennium BC, a larger number of settlements can be listed especially for the northeastern part of the Delta, where Early Dynastic and early Old Kingdom sites are known along the ancient Tanitic branch of the Nile and its distributaries (van den Brink 1988; 1993: 284–297; Jucha 2010: 379), but not along its lower section [see *Figs 1* and *3*]. Fewer sites were recognized along the Pelusiatic branch and especially along its lower course (Bietak 1975: 99–101; see *Figs 1–4*). However, there are no recognizable Early Dynastic and Old Kingdom sites along the classically reconstructed (see Bietak 1975: 99, *Fig. 25*; see *Figs 1* and *3*) course of the Pelusiatic River between Tell el-Fara'ön and Tell Basta. A linear array of sites can be seen further west, closer to the Tanitic branch. Site placement as well as a reconstruction of former water courses in the area (van den Brink 1993: *Fig. 6*) have demonstrated the secondary importance of the main riverbed of the Pelusiatic branch in this period. The Tanitic with its several branching watercourses was the main river in the

area. Some of these watercourses went on to combine with the lower stretch of the Pelusiac River and flowed into the Mediterranean Sea, probably via variant B/4 of the Pelusiac estuary (see Bietak 1975: 99). Since Bietak maintains (1975: 107) that the periods of activity of the Tanitic and variant B/4 of the Pelusiac mouths alternated over time, it is likely that during the Early Dynastic period the Tanitic and Pelusiac branches shared the same mouth. Over time, the Pelusiac branch of the Nile appeared to gain in importance, which could be confirmed by the probable earlier decline of some of the sites along the Tanitic River: marked as triangles [see *Figs 3–4, 5–6; Table 1*]: Tell el-Dib'a (59), Tell Umm el-Zawiyat (91), Tell Gezira el-Faras (82), and Tell Gherier (83) and a longer life span of some of the settlements located on the watercourses, which might be connected with the Pelusiac branch: Tell el-Abbasiya (61), Tell el-Murra (75), Tell Hassanin (84), Tell Ibrahim Awad (85), and Tell Umm 'Agram (90) [see *Table 1*]. During the First Intermediate Period, the internal colonization in this part of the Delta was already concentrated along the Pelusiac River, e.g., the state-planned settlements at Tell el-Dab'a and Ezbet Rushdi (Bietak et al. 1998; Czerny 2010; Moeller 2016: 232–262).

The stable development of Mendes from the Early Dynastic to the end of the Old Kingdom indicates that the Mendesian branch, running west of the site, was active during this period (Bietak 1975: 110; Redford 2010: 18–66). In this context, the absence of a greater number of sites along the upper course of the river should rather be linked to the unsatisfactory state of research in

the area. By contrast, the number and array of sites located between the Tanitic and Mendesian branches might suggest that other watercourses, branching out from both rivers, flowed through the area. The period of their greatest activity could have lasted until the early Old Kingdom, when many sites located there were finally abandoned: Kom el-Khilgan (34), Kom Om Sir (36), Tell Abu Shieisa (54), Tell el-Dab'a el-Qanan (58), Tell el-Farkha (67), and Tell el-Samarra (80) [see *Table 1*]. The heyday of Old Kingdom Mendes, as well as the emergence of settlement at Tell Tebilla on the lower course of the river (the town was later known as main harbor of Mendes), indicate that the Mendesian and Pelusiac branches took over the role of the main watercourses of the northeastern Nile Delta during the Old Kingdom.

The situation is more complicated in the central and western Delta, since the lower settlement density does not allow for such a precise reconstruction. According to Judith Bunbury (2013: 66, Fig. 3), two Nile channels ran through the Memphite area at the beginning of the Dynastic period; the western one of these two was initially more active (see Bunbury 2013: Fig. 5.C–D). The significance of the river flowing along the edge of the southwestern Delta continued into the Old Kingdom. Proof of this is found in the cluster of sites which developed in the area [see *Figs 1, 3, 5*]. Moreover, the location of sites in the northwestern Nile Delta determines the course of rivers known later as Canopic: Damanhur (11), Kom el-Hisn (33), Kom el-Qanatar (35), and Tell Bisintawi (57), as well as Bolbitine/Rosetta: Sa el-Hagar (47) and, to some extent,

also Kanasiyet el-Saradusi (26) and Tell el-Fara'in(65) [see *Figs 1, 3, 5; Table 1*], which were more or less stable throughout the 3rd millennium BC. The most problematic is the Sebennyitic River, considered as the third of the main Nile branches in the Delta (Butzer 1975: 1045–1046; 1976: 24–26). Its course could be confirmed not earlier than during the early and, especially, the late Old Kingdom: Abu Sir Bana (4), Behbeit el-Hagar (8), Quesna (46), Tell Atrib (55), and Tell el-Balamun (64) [see *Figs 3, 5; see Table 1*]. However, the significance of centers located in the area (e.g., Behbeit el-Hagar, Abu Sir Bana, Quesna, see above) permits the assumption that some of these settlements along the Sebennyitic branch existed already during the Early Dynastic period.

Linking settlement pattern change to the activity of individual rivers is justified only to a certain extent. Van den Brink (1993: 297–302) perceived an interesting array of northeastern sites along the east–west axis [see *Figs 2, 4*] as a possible “corridor”, part of the trade route overland from the Nile Delta to the Levant. Its further course may be determined on the grounds of a number of settlements located in the North Sinai and Palestine (Oren 1973). Despite the collapse of large-scale overland trade around the middle of the First Dynasty (Oren 1973: 204; Wilkinson 2001: 158–161; Jucha 2010: 386–387), the connection was used also during the Old Kingdom (Bárta 2010: 28). It cannot be ruled out that the settlements that survived in the northeastern Nile Delta continued to participate in this cross-border movement.

The collapse of intensive relations with Palestine via the northeastern Delta and northern Sinai was connected to some extent with the changing priorities of the united state's central authority. The sea connection between the Delta and Byblos (and the entire northern Levant) turned out to be more profitable, both politically and economically. The crown was also deeply interested in intensive use of fertile land in the Delta, as may be assumed from the number of agricultural domains and estates established in this region, starting from the beginning of the Early Dynastic period (Jacquet-Gordon 1962; Moreno García 1999; 2007). The economic significance of the Nile Delta could also be reflected in its political role. An indication of the extent to which rulers from Upper Egypt had to reckon with the elite of Lower Egypt is the creation of a dualistic monarchy and the inclusion of symbols and deities associated with cities of northern Egypt in the official title (Wilkinson 2001: 155–178). Further proof of the importance of the region is the fact that until the end of the Old Kingdom the central authorities took care to maintain direct control over the Nile Delta. The Herakleopolitan Dynasty of the First Intermediate Period inherited power over Lower Egypt (Moreno García 2013: 146–148).

At the beginning of the historical period in particular, the policy of the Memphite rulers towards the Delta was one of ‘divide and conquer’. The kings clearly cared about the development of some centers (like Buto, Sais and Mendes) at the expense of others (again, the decline of Tell el-Farkha) (Malecka-Drozd 2014). The province rebelled intermittently, primarily in the initial period.

Written sources point to significant disturbances during the Second Dynasty, suppressed ultimately by its last ruler, Khasekhemwy (Wilkinson 2001: 77–79). It cannot be excluded that these events resulted in the final decline of some of the sites, especially those that clearly deteriorated after the unification of Egypt.

The process of establishing the new state's territorial administration began already under the First Dynasty (Engel 2013: 27ff.). The reigns of Djer to Den appear to have been the most innovative period. The first *hwt* were established during the reign of Djer, somewhere in the Nile Delta (Wilkinson 2001: 123; Engel 2013: 27–28). The reign of Den witnessed the introduction of a new territorial organization based on a system of nomes, known from the Old Kingdom age (Engel 2006: 159–160; 2013: 31). These reforms may have been the true reason for the changes observed in some of the Delta settlements. This period saw the abandonment of the long-used cemetery at Minshat Abu Omar (Kroeper and Wildung 1994; 2000), the destruction of the cultic-administrative building at Tell el-Farkha (Ciałowicz 2012b: 180), the organization of an official bakery area at Mendes (Adams 2009: 140ff.) and the building of the Palace at Buto (Hartung 2015).

The process continued during the early Old Kingdom. Recent studies on Egyptian administration, the work of Juan Carlos Moreno García in particular (2007: 313–321; 2013: 87–107), seem to confirm the idea of major changes in the provinces during the Third and Fourth Dynasties. The Kings aimed to standard-

ize territorial administration for effective control of the entire state. A manifestation of these efforts was the policy of symbolically highlighting royal authority in the provinces. Huni, the last ruler of the Third Dynasty, and Sneferu, the first king of the Fourth Dynasty, had small step pyramids built around the country, in the most important regional centers (Elephantine, Edfu, Zawiyet el-Meitein, etc.). These were perceived as markers of central authority and perhaps also places of the royal cult in the provinces (Moreno García 2013: 92–93). However, no such pyramids were found in the Nile Delta. There must have been a different way to control local magnates (assuming they existed) and mark the royal presence in northern Egypt. The vast Nile Delta floodplain could have afforded different opportunities than the limited space of the long and narrow Nile Valley. Rulers may have interfered in existing settlement patterns and adapted them to their needs to a greater extent.

The royal annals inscribed on the Palermo Stone provide data on a policy of internal colonization pursued by Sneferu (Breasted 1906/2001: 65; Moreno García 2013: 95–96). There are some records attesting 35 *hwt* founded in a single year of his reign. In fact, many surviving historical toponyms preserve the name of this ruler, indicating considerable efforts on his part toward establishing new settlements. How many of these foundations were *in cruda radice* is difficult to say. At least some of them were associated with places with an earlier settlement history. One example is Abu Ghalib, a site inhabited already during the Early Dynastic period (Junker 1928: 5ff.), where a seal

impression with the name of Sneferu's domain was found in a Middle Kingdom context (Larsen 1936: 83ff.; Kroeper 1989). Old Kingdom pottery discovered at the site (Larsen 1936: Figs 13, 15) is proof of settlement in this period, and it is probable that it was re-established by Sneferu.

One reason for the intensive internal colonization during the reign of Sneferu was the availability of new land for agricultural use as a result of the maximum height of the Nile floods during the Old Kingdom. Hwt were established in areas where there was an abundance of arable land, often newly acquired. Another explanation is offered by the autobiography of Metjen, a high official in the reigns of Huni and Sneferu, preserved on the walls of his tomb. Metjen was a regional administrator in the Delta during this period. As an overseer of large swathes of land in Lower Egypt, he was involved in the process of founding new territorial units called *grgt* and *ḥt*. Moreover, he was responsible for replacing units described as *pr* with new types: *grgt*, *ḥt*, *ḥwt* and *ḥwt ʕt*. Toponyms containing *pr* were always associated with a personal

name (of local potentates or noblemen) (Moreno García 2007: 319–320), hence it might be appropriate to link them with an old elite, predynastic in its origin. New types of settlements were subordinated directly to the central government and were managed by officials, like Metjen, sent by a Residence. This permits provincial areas and settlements to be associated directly with the crown (Moreno García 2007: 318; 2013: 95–98). Densely populated and profiting from trade with southern Palestine as well as Syria (Byblos), providing evidence for a developed administrative structure (Ciałowicz 2009; 2012b) and a lively religious life (Ciałowicz 2009; Eigner 2000; Belova and Sherkova 2002), the region of the northeastern Delta is an ideal candidate for a region with such an elite. Therefore, it cannot be excluded that the policy of Sneferu and other rulers of the Third and Fourth Dynasties was aimed at abolition of the last relics of the Predynastic ownership structure. As such, it would be one of the main causes of transformation in the settlement patterns in Lower Egypt, especially in the eastern part of the Nile Delta.

## CONCLUSIONS

The early Old Kingdom appears to be a key period for change of settlement patterns in the Nile Delta. The question that one is faced with is whether the timing should be treated as a matter of coincidence or whether the individual factors described above constituted a cause-and-effect process. Were the administrative changes a derivative of the need for better, more effective territorial state organization and subordi-

nation to central authority of a potentially dangerous local Delta elite? Or were the administrative changes forced by progressive environmental changes and the need to adapt the economic potential to a rigid framework of offices and institutions? Did the process of organizing local settlements into an orderly, hierarchical state system make it possible to implement construction projects on an even larger scale, or was

it the other way round—a derivative of the construction plans of successive rulers? How important were the environmental changes or is their impact overestimated? No comprehensive answer to these questions is possible for now.

The probability that all of these phenomena contributed in one way or another to the evolution of the settlement network in the Nile Delta is significant. Further studies should include a detailed analysis of archaeological material from already investigated settlement sites. Progress in fieldwork should bring increased possibilities of linking sites with written sources and studies on the administration

of the period, enabling a preliminary reconstruction of Nile Delta settlement structure and its transformation over time. The combination and comprehensive development of geomorphological and geoarchaeological data from different parts of the Nile Delta, and their comparison, will provide a better understanding of the relationship between environmental changes and urban landscape. However, only further excavation of Early Dynastic and Old Kingdom sites will allow for a more precise reconstruction of Nile Delta settlement history in the 3rd millennium BC and the importance of deliberate state policy in this scope.

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#### References

- Abd el-Hagg Ragab, M. (1992). A report on the excavations of the Egyptian Antiquities Organization (E.A.O.) at Beni 'Amir and el-Masha'la in the Eastern Nile Delta. In E.C.M. van den Brink (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* (pp. 207–213). Tel Aviv: E.C.M. van den Brink
- Adams, M.J. (2009). An interim report on the Naqada III – First Intermediate Period stratifications at Mendes 1999–2005. In D.B. Redford (ed.), *Delta reports (Research in Lower Egypt) I* (pp. 121–206). Oxford: Oxbow Books
- Alexanian, N. and Seidlmayer, S. (2002). Die Residenz nekropole von Dahschur. Erster Grabungsbericht. *MDAIK*, 58, 1–28
- Attia, M.I. (1954). *Deposits in the Nile Valley and the delta*. Cairo: Government Press
- Bakr, I.M. (1988). The new excavations at Ezbet et-Tell, Kufur Nigm: The first season 1984. In E.C.M. van den Brink (ed.), *The archaeology of the Nile Delta, Egypt: Problems and priorities* (pp. 49–62). Amsterdam: Netherlands Foundation for Archaeological research in Egypt

- Bakr, M.I. (1989). The Old Kingdom at Bubastis: Excavations since 1978. Outline. In *The archaeology, geography and history of the Egyptian delta in Pharaonic times: Proceedings of colloquium, Wadham College, Oxford, 29–31 August 1988* (pp. 29–52). Oxford: Cotswold Press
- Bakr, M.I. (1994). Excavations of Kufur Nigm. In C. Berger, G. Clerc, and N. Grimal (eds), *Hommages à Jean Leclant IV. Varia* (=BdE 106/4) (pp. 9–17). Cairo: Institut français d'archéologie orientale
- Bakr, M.I. (2003). Excavations at Ezbet al-Tel, Kufur-Nigm: The third and fourth seasons (1988 & 1990). In Z. Hawass and L.P. Brock (eds), *Egyptology at the dawn of the Twenty-first Century: Proceedings of the Eighth International Congress of Egyptologists, Cairo, 2000*, I (pp. 30–43). Cairo: American University in Cairo Press
- Bakr, M.I., Abd el-Moneim, M.A., and Selim, M.O.M. (1996). Protodynastic excavations at Tell Hassan Dawud (Eastern Delta). In L. Krzyżaniak, K. Kroeper, and M. Kobusiewicz (eds), *Interregional contacts in the later prehistory of northeastern Africa* (=Studies in African Archaeology 5) (pp. 277–278). Poznań: Poznań Archaeological Museum
- Barsanti, A. (1901a). Ouverture de la pyramide de Zaouiet el-Aryan. *ASAE*, 2, 92–96
- Barsanti, A. (1901b). Rapports sur les déblaiements opérés autour de la pyramide d'Oenas pendant les années 1899–1901. *ASAE*, 2, 244–257
- Barsanti, A. (1902). Fouilles autour de la pyramide d'Ounas (1901–1902). *ASAE*, 3, 182–184
- Barsanti, A. (1906). Fouilles de Zaouiet el-Aryan (1904–1905). *ASAE*, 7, 257–286
- Barsanti, A. (1907). Fouilles de Zaouiet el-Aryan (1904–1905–1906). *ASAE*, 8, 201–210
- Bárta, M. (2002). Sociology of the minor cemeteries during the Old Kingdom. A view from Abusir South. *Archiv Orientální*, 70(3), 291–300
- Bárta, M. (2010). Borderland dynamics in the era of the pyramid builders in Egypt. In I.W. Zartman (ed.), *Understanding life in the borderlands: Boundaries in depth and in motion* (pp. 21–39). Athens, GA: University of Georgia Press
- Bárta, M. (2013a). Abu Gurob. In R.S. Bagnall, K. Brodersen, C.B. Champion, A. Erskine, and S.R. Huebner (eds), *The encyclopedia of ancient history* (pp. 7–9). Oxford: Wiley-Blackwell
- Bárta, M. (2013b). Abu Sir. In R.S. Bagnall, K. Brodersen, C.B. Champion, A. Erskine, and S.R. Huebner (eds), *The encyclopedia of ancient history* (pp. 15–17). Oxford: Wiley-Blackwell
- Bárta, M. (2013c). Dahshur. In R.S. Bagnall, K. Brodersen, C.B. Champion, A. Erskine, and S.R. Huebner (eds), *The encyclopedia of ancient history* (pp. 1913–1914). Oxford: Wiley-Blackwell
- Bárta, M. and Bezděk, A. (2008). Beetles and the decline of the Old Kingdom: Climate change in ancient Egypt. In H. Vymazalová and M. Bárta (eds), *Chronology and archaeology in ancient Egypt (the third millennium B.C.)* (pp. 215–224). Prague: Czech Institute of Egyptology, Faculty of Arts, Charles University in Prague
- Bell, B. (1970). The oldest records of the Nile floods. *The Geographical Journal*, 136(4), 569–573

- Bell, B. (1971). The Dark Ages in ancient history I. The first Dark Age in Egypt. *AJA*, 75(1), 1–26
- Belova, G.A. and Sherkova, T.A. (2002). *Ancient Egyptian temple at Tell Ibrahim Awad: Excavations and discoveries in the Nile Delta*. Moscow: Aletheia
- Bietak, M. (1975). *Tell el-Dab'a II. Der Fundort im Rahmen einer archäologisch-geographischen Untersuchung über das ägyptische Ostdelta*. Vienna: Verlag der Österreichischen Akademie der Wissenschaften
- Bietak, M. (1983). Historical geography in the eastern Nile Delta. *Bulletin de l'Institut d'Égypte*, 60–61, 71–94
- Bietak, M., Dorner, J., Bagh, T., Czerny, E., and Bartosek, J. (1998). Der Tempel und die Siedlung des Mittleren Reiches bei 'Ezbet Ruschdi: Grabungsvorbericht 1996. *Ägypten und Levante*, 8, 9–49
- Boessneck, J., von den Driesch, A., and Eissa, M.A. (1992). Eine Eselsbestattung der 1. Dynastie in Abusir. *MDAIK*, 48, 1–10
- Boghdady, F. (1932). An archaic tomb at Old Cairo. *ASAE*, 32, 153–160
- Bonnet, H. (1928). *Ein frühgeschichtliches Gräberfeld bei Abusir (=Veröffentlichungen der Ernst von Sieglin Expedition in Ägypten 4)*. Leipzig: Hinrichs
- Bréand, G. (2015). The Protodynastic pottery from Tell el-Iswid South (Nile Delta). Preliminary report on the Naqada III assemblage. *Bulletin de liaison de la céramique égyptienne*, 25, 37–76
- Breasted, J.H. (2001). *Ancient records of Egypt: Historical documents from the earliest times to the Persian conquest I. The First to the Seventeenth Dynasties*. Chicago: University of Illinois Press (original work published 1906)
- Brewer, D.J., Wenke, R.J., Isaacson, J., and Haag, D. (1996). Mendes regional archaeological survey and remote sensing analysis. *Sahara*, 8, 29–42
- Brunner, H. (1952–1953). El-Qatta. *Archiv für Orientforschung*, 16, 160–161
- Brunner, H. (1954–1956). El-Qatta. *Archiv für Orientforschung*, 17, 222
- Brunton, G. (1939). A First Dynasty cemetery at Maadi. *ASAE*, 39, 419–424
- Buchez, N. and Midant-Reynes, B. (2007). Le site prédynastique de Kom el-Khilgan (Delta oriental). Données nouvelles sur les processus d'unification culturelle au IV<sup>e</sup> millénaire. *BIFAO*, 107, 43–70
- Buchez, N. and Midant-Reynes, B. (2011). A tale of two funerary traditions: The Predynastic cemetery at Kom el-Khilgan (eastern Delta). In R.F. Friedman and P.N. Fiske (eds), *Egypt at its origins 3: Proceedings of the Third International Conference "Origin of the State. Predynastic and Early Dynastic Egypt", London, 27th July–1st August 2008 (=OLA 205)* (pp. 831–858). Leuven: Peeters
- Bunbury, J. (2013). Geomorphological development of the Memphite floodplain over the past 6,000 years. *Studia Quaternaria*, 30(2), 61–67
- Butzer, K.W. (1975). Delta. In W. Helck and E. Otto (eds), *Lexikon der Ägyptologie I* (pp. 1043–1052). Wiesbaden: Harrassowitz
- Butzer, K.W. (1976). *Early hydraulic civilization in Egypt: A study in cultural ecology*. Chicago: University of Chicago Press

- Butzer, K.W. (2002). Geoarchaeological implications of recent research in the Nile Delta. In E.C.M. van den Brink and T.E. Levy (eds), *Egypt and the Levant: Interrelations from the 4th through the early 3rd millennium BCE* (pp. 83–97). London: Leicester University Press
- Cagle, A. (2003). *The spatial structure of Kom el-Hisn: An Old Kingdom town in the Western Nile Delta, Egypt* (=BAR IS 1099). Oxford: Archaeopress
- Chassinat, É., Gauthier, H., and Piéron, H. (1906). *Fouilles de Qattah* (=MIFAO 14). Cairo: Institut français d'archéologie orientale
- Chłodnicki, M. (2012). History of the research. In M. Chłodnicki, K.M. Ciałowicz, and A. Mączyńska (eds), *Tell el-Farkha I. Excavations 1998–2011* (pp. 9–15). Poznań–Kraków: Poznań Archaeological Museum; Institute of Archaeology, Jagiellonian University
- Chłodnicki, M. (2014). Tell el-Farkha. The changes in spatial organisation of the settlement – from the Predynastic to the Early Dynastic periods. In A. Mączyńska (ed.), *The Nile Delta as a centre of cultural interactions between Upper Egypt and the Southern Levant in the 4th millennium BC* (=Studies in African Archaeology 13) (pp. 57–72). Poznań: Poznań Archaeological Museum
- Chłodnicki, M., Ciałowicz, K.M., and Mączyńska, A. (eds). (2012). *Tell el-Farkha I. Excavations 1998–2011*. Poznań–Kraków: Poznań Archaeological Museum; Institute of Archaeology, Jagiellonian University
- Chłodnicki, M., Fattovich, R., and Salvatori, S. (1991). Italian excavations in the Nile Delta: Fresh data and new hypotheses on the 4th millennium cultural development of Egyptian prehistory. *Rivista di Archeologia*, 15, 5–33
- Chłodnicki, M., Fattovich, R., and Salvatori, S. (1992a). 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. *CRIPEL*, 14, 45–62
- Chłodnicki, M., Fattovich, R., and Salvatori, S. (1992b). The Nile Delta in transition: A view from Tell el-Farkha. In E.C.M. van den Brink (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* (pp. 171–190). Tel Aviv: E.C.M. van den Brink
- Chłodnicki, M. and Geming, M.M. (2012). Lower Egyptian settlement on the Central Kom. In M. Chłodnicki, K.M. Ciałowicz, and A. Mączyńska (eds), *Tell el-Farkha I. Excavations 1998–2011* (pp. 89–104). Poznań–Kraków: Poznań Archaeological Museum; Institute of Archaeology, Jagiellonian University
- Ciałowicz, K.M. (2009). The Early Dynastic administrative-cultic centre at Tell el-Farkha. *British Museum Studies in Ancient Egypt and Sudan*, 13, 83–123
- Ciałowicz, K.M. (2012a). Lower Egyptian settlement on the Western Kom. In M. Chłodnicki, K.M. Ciałowicz, and A. Mączyńska (eds), *Tell el-Farkha I. Excavations 1998–2011* (pp. 149–162). Poznań–Kraków: Poznań Archaeological Museum; Institute of Archaeology, Jagiellonian University

- Ciałowicz, K.M. (2012b). Protodynastic and Early Dynastic settlement on the Western Kom. In M. Chłodnicki, K.M. Ciałowicz, and A. Mączyńska (eds), *Tell el-Farkha I. Excavations 1998–2011* (pp. 163–180). Poznań–Kraków: Poznań Archaeological Museum; Institute of Archaeology, Jagiellonian University
- Covington, L.D. (1095). Mastaba Mount excavations. *ASAE*, 6, 193–218
- Czerny, E. (2010). Fragments of information. Observations concerning the architectural layout of the Middle Kingdom settlement at Ezbet Rushdi. In M. Bietak, E. Czerny, and I. Forstner-Müller (eds), *Cities and urbanism in ancient Egypt: Papers from a workshop in November 2006 at the Austrian Academy of Sciences (=Denkschriften der Gesamtkademie 60)* (pp. 69–80). Vienna: Verlag der Österreichischen Akademie der Wissenschaften
- Daressy, G. (1902). Notes et remarques. *Recueil de travaux relatifs à la philologie et à l'archéologie égyptiennes et assyriennes pour servir de bulletin à la Mission Française du Caire*, 24, 160–167
- Daressy, G. (1905). Un édifice archaïque à Nezlet Batran. *ASAE*, 6, 99–106
- Daressy, G. (1912). À travers les koms du Delta. *ASAE*, 12, 169–213
- Daressy, G. (1916). La nécropole des grands prêtres d'Héliopolis sous l'Ancien Empire I. Inscriptions. *ASAE*, 16, 193–212
- Debono, F. and Mortensen, B. (1988). *The predynastic cemetery at Heliopolis: Season March–September 1950 (=AV 63)*. Mainz am Rhein: Philipp von Zabern
- De Meulenaere, H. and MacKay, P. (1976). *Mendes II*. Warminster: Aris and Phillips
- Dunham, D. (1978). *Zawiyet el-Aryan: The cemeteries adjacent to the Layer Pyramid*. Boston: Department of Egyptian and Ancient Near Eastern Art, Museum of Fine Arts
- Eigner, D. (2000). Tell Ibrahim Awad: Divine residence from Dynasty 0 until Dynasty 11. *Ägypten und Levante*, 10, 17–36
- Eiwanger, J. (1979). Zweiter Vorbericht über die Wiederaufnahme der Grabungen in der neolithischen Siedlung Merimde-Benisalâme. *MDAIK*, 35, 23–57
- El-Baghdadi, S.G. (1999). La palette décorée de Minshat Ezzat (delta). *Archéo-Nil*, 9, 9–11
- El-Baghdadi, S.G. (2007). Proto-Dynastic and Early-Dynastic Necropolis of Minshat Ezzat and El-Samara (El-Dakahlia Province “North-east Delta”). In J.C. Goyon and C. Cardin (eds), *Proceedings of the Ninth International Congress of Egyptologists, Grenoble, 6–12 septembre 2004*, I (=OLA 150) (pp. 487–499). Leuven–Paris–Dudley, MA: Peeters
- El-Baghdadi, S.G. (2008). The Protodynastic and Early Dynastic necropolis of Tell el-Daba'a (El-Qanan) and Tell El-Samara (El-Dakahlia province, Northeast Delta). In B. Midant-Reynes, Y. Tristant, J. Rowland, and S. Hendrickx (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 (=OLA 172)* (pp. 1151–1154). Leuven: Peeters
- el-Banna, E. (1990). Une nécropole inédite d'époque archaïque découverte près de Hérouan, au Sud du Caire. *Göttinger Miszellen*, 117–118, 7–54
- El-Khouli, A. (1968). A preliminary report on the excavations at Tura, 1963–64. *ASAE*, 60, 73–76

- El-Sawi, A. (1979). *Excavations at Tell Basta: Report of seasons 1967–1971 and catalogue of finds*. Prague: Charles University
- El-Sayed, R. (1982). *La déesse Neith de Saïs I. Importance et rayonnement de son culte (=BdE 86/1)*. Cairo: Institut français d'archéologie orientale
- Emery, W.B. (1938). *Excavations at Saqqara. The tomb of Hemaka*. Cairo: Government Press
- Emery, W.B. (1939). *Excavations at Saqqara, 1937–1938: Ḥor-ahḥa*. Cairo: Government Press
- Emery, W.B. (1949). *Great tombs of the First Dynasty: Excavations at Sakkara I*. Cairo: Government Press
- Emery, W.B. (1954). *Great tombs of the First Dynasty: Excavations at Sakkara II (=EES-Excavation Memoir 46)*. London: Egypt Exploration Society
- Emery, W.B. (1958). *Great tombs of the First Dynasty: Excavations at Sakkara III (=EES-Excavation Memoir 47)*. London: Egypt Exploration Society
- Emery, W.B. (1962). *A funerary repast in an Egyptian tomb of the archaic period*. Leiden: Nederlands Instituut voor het nabije oosten
- Engel, E.-M. (2006). Die Entwicklung des Systems der ägyptischen Nomoi in der Frühzeit. *MDAIK*, 62, 151–160
- Engel, E.-M. (2013). The organisation of a nascent state: Egypt until the beginning of the 4th dynasty. In J.C. Moreno García (ed.), *Ancient Egyptian administration* (pp. 19–40). Leiden–Boston: Brill
- Engles, D.R. (1990). An Early Dynastic cemetery at Kafr Ghattati. *JARCE*, 27, 71–87
- Evers, H.G. (1929). *Staat aus dem Stein: Denkmäler, Geschichte und Bedeutung der ägyptischen Plastik während des mittleren Reichs II. Die Vorarbeiten*. Munich: Bruckmann
- Fakhry, A. (1959). *The monuments of Sneferu at Dahshur I. The Bent Pyramid*. Cairo: General Organization for Government Printing Offices
- Fakhry, A. (1961). *The monuments of Sneferu at Dahshur II.1. The Valley temple. The temple reliefs*. Cairo: General Organization for Government Printing Offices
- Faltings, D. (1989). Die Keramik aus den Grabungen an der nördlichen Pyramide des Snofru in Dachschor: Arbeitsbericht über die Kampagnen 1983–1986. *MDAIK*, 45, 133–154
- Faltings, D., Ballet, P., Förster, F., French, P., Ihde, C., Sahlmann, H., ... Wodzińska, A. (2000). Zweiter Vorbericht über die Arbeiten in Buto von 1996 bis 1999. *MDAIK*, 56, 131–179
- Faltings, D. and Köhler, C. (1996). Vorbericht über die Ausgrabungen des DAI in Tell el-Fara'in-Buto 1993 bis 1995. *MDAIK*, 52, 87–114
- Farid, S. (1973). Preliminary report on the excavations of the Antiquities Department at Kom Abu Billo. *ASAE*, 61, 21–26
- Firth, C.M. (1931). Excavations of the Department of Antiquities at Saqqara 1930–1931. *ASAE*, 31, 45–48
- Fischer, H.G. (1958). A fragment of late predynastic Egyptian relief from the Eastern Delta. *Artibus Asiae*, 21(1), 64–88
- Fischer, H.G. (1963). *Varia Aegyptiaca*. *JARCE*, 2, 15–51

- Fischer, H.G. (1976). Some early monuments from Busiris, in the Egyptian Delta. *Metropolitan Museum Journal*, 11, 5–24
- Friedman, R.F. (1992). The Early Dynastic and transitional pottery of Mendes: The 1990 season. In E.C.M. van den Brink (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* (pp. 199–205). Tel Aviv: E.C.M. van den Brink
- Goedicke, H. (1986). Tell er-Retabe. In W. Helck and E. Otto (eds), *Lexikon der Ägyptologie VI* (pp. 353–354). Wiesbaden: Harrassowitz
- Gomaà, F. (1984). El-Qatta. In W. Helck (ed.), *Lexikon der Ägyptologie V* (pp. 47–48). Wiesbaden: Harrassowitz
- Guyot, F. (2016). *Excavations at the Predynastic site of Tell el-Samara (Daqahliya governorate, Nile Delta). Preliminary report on the first season, December 2015*
- Guyot, F., Azzarà, V., Briois, F., Marchand, J., and Midant-Reynes, B. (2018). An early Old Kingdom rural community in the Eastern Nile Delta: First season of excavations at Tell el-Neshed. *BIFAO*, 118, 143–187
- Habachi, L. (1957). *Tell Basta (=ASAE Suppléments 22)*. Cairo: Institut français d'archéologie orientale
- Habachi, L. (1984). *The obelisks of Egypt: Skyscrapers of the past*. Cairo: American University in Cairo Press
- Hamdan, M., Hassan, F.A., Flower, R.J., and Ebrahim, E.M. (2016). Climate and collapse of Egyptian Old Kingdom: A geoarchaeological approach. In G. Capriotti Vittozzi and F. Porcelli (eds), *Archaeology and environment: Understanding the past to design the future. A multidisciplinary approach: Proceedings of the international workshop "Italian days in Aswan" 15th–18th November 2013* (pp. 89–100). Rome: Consiglio nazionale delle ricerche, Istituto di studi sul Mediterraneo antico
- Hansen, D.P., Soghor, C.L., and Ochsenschlager, E.L. (1967). Mendes 1965 and 1966. *JARCE*, 6, 5–51
- Hartung, U. (2015). Buto (modern name: Tell el-Fara'in). *Journal of Ancient Egyptian Interconnections*, 7(4), 61–66
- Hartung, U., Ballet, P., Béguin, F., Bourriau, J., Dixneuf, D., von den Driesch, A., French, P., Hartman, R., Herbich, T., Kitagawa, C., Kopp, P., Lecuyot, G., Nenna, M.-D., Schmitt, A., Senol, G., and Şenol, A. (2007). Tell el-Fara'in-Buto: 9. Vorbericht. *MDAIK*, 63, 69–165
- Hartung, U., Ballet, P., Béguin, F., Bourriau, J., French, P., Herbich, T., Kopp, P., Lecuyot, G., and Schmidt, A. (2003). Tell el-Fara'in-Buto: 8. Vorbericht. *MDAIK*, 59, 199–267
- Hartung, U., Ballet, P., Effland, A., French, P., Hartmann, R., Herbich, T., Hoffmann, H., Hower-Tilman, E., Kitagawa, Ch., Kopp, P., Kreibitz, W., Leguyot, G., Lösch, S., Marouard, G., Nerlich, A., Pithon, M., and Zink, A. (2009). Tell el-Fara'in-Buto: 10. Vorbericht. *MDAIK*, 65, 82–190
- Hartung, U., Engel, E., and Hartmann, R. (2012). Tell el-Fara'in-Buto: 11. Vorbericht. *MDAIK*, 68, 83–114

- Hassan, F.A., Tassie, G.J., Tucker, T.L., Rowland, J., and van Wetering, J. (2004). Social dynamics at the Late Predynastic to Early Dynastic site of Kafr Hassan Dawood, East Delta, Egypt. *Archéo-Nil*, 13, 37–46
- Hassan, S. (1932). *Excavations at Giza I. 1929–1930*. Oxford: Printed at the University Press by J. Johnson
- Hassan, S. (1936). *Excavations at Giza II. 1930–1931*. Cairo: Government Press
- Hassan, S. (1938). Excavations at Saqqara 1937–1938. *ASAE*, 38, 503–521
- Hassan, S. (1941). *Excavations at Giza III. 1931–1932*. Cairo: Government Press
- Hassan, S. (1943). *Excavations at Giza IV. 1932–1933*. Cairo: Government Press
- Hassan, S. (1944). *Excavations at Giza V. 1933–1934, with special chapters on methods of excavation, the false-door, and other archaeological and religious subjects*. Cairo: Government Press
- Hassan, S. (1946). *Excavations at Giza VI.1. 1934–1935. The solar boats of Khafra, their origin and development, together with the mythology of the universe which they are supposed to traverse*. Cairo: Government Press
- Hassan, S. (1948). *Excavations at Giza VI.2. 1934–1935. The offering list in the Old Kingdom*. Cairo: Government Press
- Hassan, S. (1950). *Excavations at Giza VI.3. 1934–1935. The mastabas of the sixth season and their description*. Cairo: Government Press
- Hassan, S. (1953a). *Excavations at Giza VII. 1935–1936. The mastabas of the seventh season and their description*. Oxford: Oxford University Press
- Hassan, S. (1953b). *Excavations at Giza VIII. 1936–1937. The Great Sphinx and its secrets: Historical studies in the light of recent excavations*. Oxford: Oxford University Press
- Hassan, S. (1960). *Excavations at Giza IX. 1936–1938. Mastabas of the eighth season and their description*. Oxford: Oxford University Press
- Hawass, Z.A. (1980). Archaic graves recently found at North Abu Roash. *MDAIK*, 36, 229–244
- Hendrickx, S. and van den Brink, E.C.M. (2002). Inventory of Predynastic and Early Dynastic cemetery and settlement sites in the Egyptian Nile Valley. In E.C.M. van den Brink and T.E. Levy (eds), *Egypt and the Levant: Interrelations from the 4th through the early 3rd millennium BCE* (pp. 346–398). London: Leicester University Press
- Hikade, T. (1999). An Early Dynastic flint workshop at Helwan, Egypt. *Bulletin of the Australian Centre for Egyptology*, 10, 47–57
- Holz, R.K., Hansen, D.P., Ochsenschlager, E. Stieglitz, D. (1980). *Mendes I*. Cairo, Egypt: American Research Center in Egypt.
- Jacquet-Gordon, H. (1962). *Les noms des domaines funéraires sous l'ancien empire égyptien* (=BdE 34). Cairo: Institut français d'archéologie orientale
- Jeffreys, D.G. and Tavares, A. (1994). The historic landscape of Early Dynastic Memphis. *MDAIK*, 50, 143–173
- Jones, M. (1995). A new Old Kingdom settlement near Ausim. Report of the archaeological discoveries made in the Barakat Drain Improvements Project. *MDAIK*, 51, 85–98

- Jucha, M.A. (2009). The north-eastern part of the Nile Delta – Research perspectives. Polish archaeological survey in the Ash-Sharqiyyah Governorate. In J. Popielska-Grzybowska and J. Iwaszczuk (eds), *Proceedings of the Fifth Central European Conference of Young Egyptologists: Egypt 2009. Perspectives of research, Pultusk 22–24 June 2009* (=Acta Archaeologica Pultuskiensia 2) (pp. 83–88). Pultusk: Pultusk Academy of Humanities
- Jucha, M.A. (2010). Tell el-Murra. The Predynastic north-eastern Nile Delta. *Folia Orientalia*, 47, 379–390
- Jucha, M.A. (2011a). The Polish archaeological survey in the north-eastern part of the Nile Delta (season 2010) – The pottery from Tell el-Murra and Tell Abu el-Halyat. *Recherches Archéologiques NS*, 3, 179–194
- Jucha, M.A. (2011b). Tell Abu el-Halyat: The new Naqada III – Old Kingdom (?) site in the northeastern Nile Delta. *Studies in Ancient Art and Civilization*, 15, 65–76
- Jucha, M.A. (2012). Naqada III – Old Kingdom pottery in the Nile Delta: A view from Tell el-Akhdar. *Studies in Ancient Art and Civilization*, 16, 49–60
- Jucha, M.A. (2016). The northeastern part of the Nile Delta during the Naqada III period. In M.D. Adams, B. Midant-Reynes, E.M. Ryan, and Y. Tristant (eds), *Egypt at its origins 4: Proceedings of the fourth international conference “Origin of the State, Predynastic and Early Dynastic Egypt”, New York, 26th–30th July 2011* (=OLA 252) (pp. 63–76). Leuven: Peeters
- Jucha, M.A., Bąk-Pryc, G., and Czarnowicz, M. (2014). Tell el-Murra (Northeastern Nile Delta survey): Season 2011. *PAM*, 23/1, 141–152
- Jucha, M.A., Bąk-Pryc, G., and Małecka-Drozd, N. (2015). Tell el-Murra (Northeastern Nile Delta Survey). Seasons 2012–2013. *PAM*, 24/1, 199–214
- Jucha, M.A., Bąk-Pryc, G., Małecka-Drozd, N., Kazimierczak, M., Ownby, M.F., Mądrzyk, K., Pankowska, A., Woźniak, B., and Ablamowicz, R. (2016). Polish excavations at Tell el-Murra in the Nile Delta. Preliminary report 2013–2015. *Archeologia*, 65, 85–146
- Jucha, M.A., Błaszczuk, K., Buszek, A., and Pryc, G. (2013). Tell el-Murra (Northeastern Nile Delta Survey). Season 2010. *PAM*, 22, 105–120
- Junker, H. (1912). *Bericht über die Grabungen der Kaiserlichen Akademie der Wissenschaften in Wien auf dem Friedhof in Turah: Winter 1909–1910*. Vienna: Hölder
- Junker, H. (1928). *Bericht über die von der Akademie der Wissenschaften in Wien nach dem Westdelta entsendete Expedition (20. Dez. 1927 bis 25. Febr. 1928)*. Vienna: Hölder-Pichler-Tempsky
- Junker, H., Eilmann, R., Schott, S., and Stier, H.E. (1930). Bericht über die vom Deutschen Institut für Ägyptische Altertumskunde nach dem Ostdelta-Rand unternommene Erkundungsfahrt. *MDAIK*, 1, 3–37
- Kaiser, W. (1964). Einige Bemerkungen zur ägyptischen Frühzeit: III. Die Reichseinigung. *Zeitschrift für Ägyptische Sprache und Altertumskunde*, 91, 86–125
- Kemp, B.J. (1977). The early development of towns in Egypt. *Antiquity*, 51(203), 185–200
- Kessler, D. (1980). Ma'asara. In W. Helck and W. Westendorf (eds), *Lexikon der Ägyptologie III* (p. 1196). Wiesbaden: Harrassowitz

- Kessler, D. (1982). Nekropolen. Frühzeit und AR, 1.-6. Dyn. In W. W. Helek and W. Westendorf (eds), *Lexikon der Ägyptologie IV* (pp. 395–414). Wiesbaden: Harrassowitz
- Klasens, A. (1957). The excavations of the Leiden Museum of Antiquities at Abu-Roash. Report of the first season: 1957. Part I. *OMRO*, 38, 58–68
- Klasens, A. (1958a). The excavations of the Leiden Museum of Antiquities at Abu-Roash. Report of the first season: 1957. Part II. *OMRO*, 39, 20–31
- Klasens, A. (1958b). The excavations of the Leiden Museum of Antiquities at Abu-Roash. Report of the first season: 1958. Part I. *OMRO*, 39, 32–55
- Klasens, A. (1959). The excavations of the Leiden Museum of Antiquities at Abu-Roash. Report of the first season: 1958. Part II. *OMRO*, 40, 41–61
- Klasens, A. (1960). The excavations of the Leiden Museum of Antiquities at Abu-Roash. Report of the first season: 1959. Part I. *OMRO*, 41, 69–94
- Klasens, A. (1961). The excavations of the Leiden Museum of Antiquities at Abu-Roash. Report of the first season: 1959. Part II. *OMRO*, 42, 108–128
- Köhler, E.C. (1998). Excavations at Helwan. New insights into Early Dynastic stone masonry. *Bulletin of the Australian Centre for Egyptology*, 9, 65–72
- Köhler, E.C. (2000). Excavations in the Early Dynastic cemetery at Helwan. A preliminary report of the 1998/99 and 1999/2000 seasons. *Bulletin of the Australian Centre for Egyptology*, 11, 83–92
- Köhler, E.C. (2005). *Helwan I. Excavations in the Early Dynastic cemetery, season 1997/98* (= *Studien zur Archäologie und Geschichte Altägyptens* 24). Heidelberg: Heidelberger Orientverlag
- Köhler, E.C. (2014). *Helwan III. Excavations in Operation 4, Tombs 1–50* (= *Studien zur Archäologie und Geschichte Altägyptens* 26). Rahden/Westf.: Verlag Marie Leidorf
- Köhler, E.C. and Jones, J. (2009). *Helwan II. The Early Dynastic and Old Kingdom funerary relief slabs* (= *Studien zur Archäologie und Geschichte Altägyptens* 25). Rahden/Westf.: Verlag Marie Leidorf
- Kroeper, K. (1988). The excavations of the Munich East-Delta expedition in Minshat Abu Omar. In E.C.M. van den Brink (ed.), *The archaeology of the Nile Delta, Egypt: Problems and priorities* (pp. 11–46). Amsterdam: Netherlands Foundation for Archaeological research in Egypt
- Kroeper, K. (1989). *Settlement in the Nile Delta to the end of the Old Kingdom: According to contemporary archaeological evidence* (unpubl. Ph.D. diss.). University of Warsaw
- Kroeper, K. (1992). Tombs of the elite in Minshat Abu Omar. In E.C.M. van den Brink (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* (pp. 127–150). Tel Aviv: E.C.M. van den Brink

- Kroeper, K. (2004). Minshat Abu Omar. Aspects of the analysis of a cemetery. In S. Hendrickx, R.F. Friedman, K.M. Ciałowicz, and M. Chłodnicki (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 August–1st September 2002 (=OLA 138) (pp. 859–880). Leuven; Dudley, MA: Peeters
- Kroeper, K. and Wildung, D. (1985). *Minshat Abu Omar: Münchner Ostdelta-Expedition. Vorbericht 1978–1984*. Munich: Staatliche Sammlung Ägyptischer Kunst
- Kroeper, K. and Wildung, D. (1994). *Minshat Abu Omar: Ein vor- und frühgeschichtlicher Friedhof im Nildelta I. Gräber 1–114*. Mainz am Rhein: Philipp von Zabern
- Kroeper, K. and Wildung, D. (2000). *Minshat Abu Omar: Ein vor- und frühgeschichtlicher Friedhof im Nildelta II. Gräber 115–204*. Mainz am Rhein: Philipp von Zabern
- Krzyżaniak, L. (1989). Recent archaeological evidence on the earliest settlement in the Eastern Nile Delta. In L. Krzyżaniak and M. Kobusiewicz (eds), *Late prehistory of the Nile basin and the Sahara* (=Studies in African Archaeology 2) (pp. 267–285). Poznań: Poznań Archaeological Museum
- Krzyżaniak, L. (1992). Again on the earliest settlement at Minshat Abu Omar. In E.C.M. van den Brink (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* (pp. 151–156). Tel Aviv: E.C.M. van den Brink
- Krzyżaniak, L. (1993). New data on the late prehistoric settlement at Minshat Abu Omar, Eastern Nile Delta. In L. Krzyżaniak, M. Kobusiewicz, and J. Alexander (eds), *Environmental change and human culture in the Nile basin and Northern Africa until the second millennium B.C.* (=Studies in African Archaeology 4) (pp. 321–325). Poznań: Poznań Archaeological Museum
- Lange, E. (2006). Die Ka-Anlage Pepis I. in Bubastis im Kontext königlicher Ka-Anlagen des Alten Reiches. *Zeitschrift für Ägyptische Sprache und Altertumskunde*, 133(2), 121–140
- Lange, E., Ullmann, T., and Baumhauer, R. (2016). Remote sensing in the Nile Delta: Spatio-temporal analysis of Bubastis / Tell Basta. *Ägypten und Levante*, 26, 377–392
- Larsen, H. (1936). Vorbericht über die schwedischen Grabungen in Abu Ghálíb 1932–1934. *MDAIK*, 6, 41–87
- Larsen, H. (1940a). Three shaft tombs at Maassara, Egypt. *Acta Archaeologica*, 11, 161–206
- Larsen, H. (1940b). Tomb six at Maassara: An Egyptian Second Dynasty tomb. *Acta Archaeologica*, 11, 103–124
- Larsen, H. (1957). A Second Dynasty grave at Wardan, Northern Egypt. *Orientalia Suecana*, 5, 3–11
- Leclant, J. (1950). Compte rendu des fouilles et travaux menés en Égypte durant les campagnes 1948–1950. *Orientalia*, 19, 489–501

- Leclant, J. (1952). Fouilles et travaux en Égypte, 1950–1951, II. *Orientalia*, 21, 233–249
- Leclant, J. (1953). Fouilles et travaux en Égypte, 1951–1952. *Orientalia*, 22, 82–105
- Leclant, J. (1954). Fouilles et travaux en Égypte, 1952–1953. *Orientalia*, 23, 64–79
- Leclant, J. (1963). Fouilles et travaux en Égypte et au Soudan, 1961–1962, I. Fouilles en Égypte. *Orientalia*, 32, 82–101
- Leclant, J. (1964). Fouilles et travaux en Égypte et au Soudan, 1962–1963. *Orientalia*, 33, 337–404
- Leclant, J. (1971). Fouilles et travaux en Égypte et au Soudan, 1969–1970. *Orientalia*, 40, 224–266
- Leclant, J. (1972). Fouilles et travaux en Égypte et au Soudan, 1970–1971. *Orientalia*, 41, 249–291
- Leclant, J. (1973). Fouilles et travaux en Égypte et au Soudan, 1971–1972. *Orientalia*, 42, 393–440
- Leclant, J. (1976). Fouilles et travaux en Égypte et au Soudan, 1974–1975. *Orientalia*, 45, 275–318
- Leclant, J. (1979). Fouilles et travaux en Égypte et au Soudan, 1977–1978. *Orientalia*, 48, 340–412
- Leclant, J. (1983). Fouilles et travaux en Égypte et au Soudan, 1981–1982. *Orientalia*, 52, 461–542
- Leclant, J. and Clerc, G. (1985). Fouilles et travaux en Égypte et au Soudan, 1983–1984. *Orientalia*, 54, 337–415
- Leclant, J. and Clerc, G. (1986). Fouilles et travaux en Égypte et au Soudan, 1984–1985. *Orientalia*, 55, 236–319
- Leclant, J. and Clerc, G. (1987). Fouilles et travaux en Égypte et au Soudan, 1985–1986. *Orientalia*, 56, 292–389
- Leclant, J. and Clerc, G. (1990). Fouilles et travaux en Égypte et au Soudan, 1988–1989. *Orientalia*, 59, 335–439
- Leclant, J. and Clerc, G. (1991). Fouilles et travaux en Égypte et au Soudan, 1989–1990. *Orientalia*, 60, 159–273
- Leclant, J. and Clerc, G. (1992). Fouilles et travaux en Égypte et au Soudan, 1990–1991. *Orientalia*, 61, 214–322
- Leclant, J. and Clerc, G. (1993). Fouilles et travaux en Égypte et au Soudan, 1991–1992. *Orientalia*, 62, 175–295
- Leclant, J. and Clerc, G. (1994). Fouilles et travaux en Égypte et au Soudan, 1992–1993. *Orientalia*, 63, 345–473
- Lehner, M. (2002). The pyramid age settlement of the Southern Mount at Giza. *JARCE*, 39, 27–74
- Lehner, M., Jones, D., Yeomans, L., Mahmoud, H., and Olchowska, K. (2011). Re-examining the Khentkawes Town. In N. Strudwick and H. Strudwick (eds), *Old Kingdom, new perspectives: Egyptian art and archaeology 2750–2150 BC* (pp. 143–191). Oxford: Oxbow Books
- Lehner, M., Kamel, M., and Tavares, A. (2009). *Giza Plateau Mapping Project: Season 2004 preliminary report*. Boston, MA: Ancient Egypt Research Associates

- Love, S. (2003). Questioning the location of the Old Kingdom capital of Memphis, Egypt. *Papers from the Institute of Archaeology*, 14, 70–84
- Lovell, N.C. (2001). The 1995 excavations of the cemetery at Kafr Hassan Daoud, Wadi Tumilat. *Journal of the Society for the Study of Egyptian Antiquities*, 27, 34–41
- Macramallah, R. (1940). *Un cimetière archaïque de la classe moyenne du peuple à Saqqarah*. Cairo: Service des Antiquités de l'Égypte
- Małecka-Drozd, N. (2014). The settlement landscape in the Nile Delta of the 3rd millennium (!) BC. In M.A. Jucha, J. Dębowska-Ludwin, and P. Kołodziejczyk (eds), *Aegyptus est imago caeli: Studies presented to Krzysztof M. Ciałowicz on his 60th birthday* (pp. 57–62). Kraków: Institute of Archaeology, Jagiellonian University
- Midant-Reynes, B. and Buchez, N. (eds). (2014). *Tell el-Iswid: 2006–2009* (=FIFAO 73). Cairo: Institut français d'archéologie orientale
- Moeller, N. (2016). *The archaeology of urbanism in ancient Egypt: From the predynastic period to the end of the Middle Kingdom*. New York: Cambridge University Press
- Montet, P. (1938). Tombeaux de la Ire et de la IVe dynasties à Abou-Roach. *Kémi*, 7, 11–69
- Moreno García, J.C. (1999). *Hwt et le milieu rural égyptien du III<sup>e</sup> millénaire: économie, administration et organisation territoriale*. Paris: H. Champion
- Moreno García, J.C. (2007). The state and the organisation of the rural landscape in 3rd millennium BC pharaonic Egypt. In M. Bollig, O. Bubenzer, R. Vogelsang, and H.-P. Wozzka (eds), *Aridity, change and conflict in Africa: Proceedings of an international ACACIA conference held at Königswinter, Germany, October 1–3, 2003* (=Colloquium Africanum 2) (pp. 313–330). Cologne: Heinrich-Barth-Institut
- Moreno García, J.C. (2013). The territorial administration of the kingdom in the 3rd millennium. In J.C. Moreno García (ed.), *Ancient Egyptian administration* (pp. 85–151). Leiden–Boston: Brill
- Moreno García, J.C. (2015). *Hwt jh(w)t*, the administration of the Western Delta and the 'Libyan question' in the third millennium BC. *JEA*, 101, 69–105
- Mumford, G. (2001). Concerning the 2000 season at Tell Tebilla (Mendesian Nome). *The Akhenaten Temple Project Newsletter*, 1
- Mumford, G. (2002). Reconstructing the ancient settlement at Tell Tebilla. *Bulletin of the American Research Center in Egypt*, 182, 18–23
- Munro, P. (1983). Einige Bemerkungen zum Unas-Friedhof in Saqqara: 3. Vorbericht über die Arbeiten der Gruppe Hannover im Herbst 1978 und im Frühjahr 1980. *Studien zur Altägyptischen Kultur*, 10, 277–295
- Munro, P. (1984). Der Unas-Friedhof Nord-West. 6. Vorbericht über die Arbeiten der Gruppe Berlin/Hannover in Saqqara (Teil 1). *Göttinger Miszellen*, 74, 59–94
- Munro, P. (1993a). Report on the work of the Joint Archaeological Mission Free University of Berlin/University of Hannover, 12th campaign, 1992. *Discussions in Egyptology*, 26, 47–58
- Munro, P. (1993b). *Der Unas-Friedhof Nord-West: Topographisch-historische Einleitung I. Das Doppelgrab der Königinnen Nebet und Khenut*. Mainz am Rhein: Philipp von Zabern

- Mustafa, I.A. (1988). A preliminary report on the excavation of the E.A.O. at Tell Fara'ón 'Imet', season 1985–1986. In E.C.M. van den Brink (ed.), *The Archaeology of the Nile Delta, Egypt: Problems and priorities* (pp. 141–149). Amsterdam: Netherlands Foundation for Archaeological research in Egypt
- Müller, H.W. (1966). *Bericht über im März/April 1966 in das östliche Nildelta unternommene Erkundungsfahrten: Vorgelegt am 3. Juni 1966*. Munich: Bayerische Akademie der Wissenschaften
- Naville, É. (1887). *The shrine of Saft el-Henneh and the land of Goshen (1885)*. London: Trübner
- Naville, É. (1890). *The mound of the Jew and the city of Onias: Belbés, Samanood, Abusir, Tukh el Karmus, 1887*. London: Paul, French, Trübner
- Neuffer, E., Bittel, K., and Schott, S. (1932). Bericht über die zweite vom Deutschen Institut für Ägyptische Altertumskunde nach dem Ostdelta-Rand und in das Wādi Ṭumilāt unternommene Erkundungsfahrt. *MDAIK*, 2, 39–73
- Oren, E.D. (1973). The overland route between Egypt and Canaan in the Early Bronze Age (preliminary report). *Israel Exploration Journal*, 23(4), 198–205
- Quibell, J.E. (1907). *Excavations at Saqqara, 1905–1906*. Cairo: Institut français d'archéologie orientale
- Quibell, J.E. (1908). *Excavations at Saqqara, 1906–1907*. Cairo: Institut français d'archéologie orientale
- Quibell, J.E. (1913). *Excavations at Saqqara, 1911–1912: The tomb of Hesy*. Cairo: Institut français d'archéologie orientale
- Quibell, J.E. (1923). *Excavations at Saqqara, 1912–1914: Archaic mastabas*. Cairo: Institut français d'archéologie orientale
- Petrie, W.M.F. (1907). *Gizeh and Rifeh*. London: British School of Archaeology in Egypt
- Petrie, W.M.F. and Duncan, J.G. (1906). *Hyksos and Israelite cities* (=British School of Archaeology Publications 12). London: British School of Archaeology in Egypt
- Porter, B. and Moss, R.L.B. (1934). *Topographical bibliography of ancient Egyptian hieroglyphic texts, reliefs and paintings IV. Lower and Middle Egypt*. Oxford: Clarendon Press
- Porter, B. and Moss, R.L.B. (1978). *Topographical bibliography of ancient Egyptian hieroglyphic texts, statues, reliefs and paintings III.2. Memphis. Saqqāra to Dahshūr* (2nd rev. ed.). Oxford: Griffith Institute, Ashmolean Museum
- Radwan, A. (1995). Recent excavations of the Cairo University at Abusir. 'A cemetery of the 1st Dynasty'. In D. Kessler and R. Schulz (eds), *Gedenkschrift für Winfried Barta: Ḥtp dj n ḥzj* (=Münchener ägyptologische Untersuchungen 4) (pp. 311–314). Frankfurt am Main: Peter Lang
- Rampersad, S.R. (2003). Report of the first field season at Tell el-Masha'la, Egypt, 2002. *JARCE*, 40, 171–186
- Rampersad, S.R. (2006). Tell el-Masha'la: A Predynastic/Early Dynastic site in the Eastern Nile Delta. In K. Kroeper, M. Chłodnicki, and M. Kobusiewicz (eds), *Archaeology of early Northeastern Africa: In memory of Lech Krzyżaniak* (=Studies in African Archaeology 9) (pp. 789–816). Poznań: Poznań Archaeological Museum

- Rampersad, S.R. (2008). Introducing Tell Gabbara: New evidence for Early Dynastic settlement in the Eastern Delta. *JEA*, 94, 95–106
- Rampersad, S.R. (2015–2016). Tell Gabbara: A late Second Dynasty settlement in the Eastern Delta, Egypt. *Journal of the Society for the Study of Egyptian Antiquities*, 42, 83–99
- Redford, D.B. (2010). *City of the ram-man: The story of ancient Mendes*. Princeton, NJ: Princeton University Press
- Reisner, G.A. (1936). *The development of the Egyptian tomb down to the accession of Cheops*. Cambridge: Harvard University Press
- Rowland, J. (2007). The Delta Survey: Minufiyeh Province, 2006–7. *JEA*, 93, 65–77
- Rowland, J. (2011a). A new era at Quesna. *Egyptian Archaeology*, 38, 10–13
- Rowland, J. (2011b). An Old Kingdom mastaba and the results of continued investigations at Quesna in 2010. *JEA*, 97, 11–29
- Rowland, J., Edinborough, K., Phillipps, R., and El-Senussi, A. (2009). The Delta Survey: Minufiyeh Province, 2008–9. *JEA*, 95, 35–49
- Saad, Z.Y. (1942). Preliminary report on the royal excavations at Helwan (1942). *ASAE*, 41, 405–434
- Saad, Z.Y. (1943). Preliminary report on the royal excavations at Helwan (1942) (plan). *ASAE*, 42, 357
- Saad, Z.Y. (1946). Héliouan. Fouilles royales. *Chronique d'Égypte*, 21, 197–198
- Saad, Z.Y. (1947). *Royal excavations at Saqqara and Helwan (1941–1945)* (=ASAE Suppléments 3). Cairo: Institut français d'archéologie orientale
- Saad, Z.Y. (1951). *Royal excavations at Helwan: 1945–1947* (=ASAE Suppléments 14). Cairo: Institut français d'archéologie orientale
- Saad, Z.Y. (1954). Nouvelles découvertes dans les fouilles de Héliouan. *La Revue du Caire*, 33, 5–11
- Saad, Z.Y. (1957). *Ceiling stelae in Second Dynasty tombs from the excavations at Helwan* (=ASAE Suppléments 21). Cairo: Institut français d'archéologie orientale
- Saad, Z.Y. (1969). *The excavations at Helwan: Art and civilization in the First and Second Egyptian Dynasties*. Norman, OK: University of Oklahoma Press
- Said, R. (1993). *The river Nile: Geology, hydrology and utilization*. Oxford: Pergamon Press
- Saleh, A.-A. (1974). Excavations around Mycerinus pyramid complex. *MDAIK*, 30, 131–154
- Salim el-Hangary, M. (1992). The excavations of the Egyptian Antiquities Organization at Ezbet Hassan Dawud (Wadi Tumulat), season 1990. In E.C.M. van den Brink (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* (pp. 215–216). Tel Aviv: E.C.M. van den Brink
- Scharff, A. (1926). Ein frühgeschichtlicher Fund aus dem Delta. *Orientalistische Literaturzeitung*, 29, 719–723
- Scharff, A. (1929). *Die Altertümer der Vor- und Frühzeit Ägyptens II* (=Mitteilungen aus der ägyptischen Sammlung 5). Berlin: Curtius

- Schlichting, R. (1982). Neith. In W. Helck and W. Westendorf (eds), *Lexikon der Ägyptologie* IV (pp. 392–394). Wiesbaden: Harrassowitz
- Simpson, W.K. (ed.). (2003). *The literature of ancient Egypt: An anthology of stories, instructions, stelae, autobiographies, and poetry*. New Haven, CT: Yale University Press
- Spencer, A.J. (2016). *The Delta Survey: 2009–2015 (=EES Excavation Memoir 112)*. London: Egypt Exploration Society
- Stadelmann, R., Alexanian, N., Ernst, H., Heindl, G., and Raue, D. (1993). Pyramiden und Nekropole des Snofru in Dahschur. Dritter Vorbericht über die Grabungen des Deutschen Archäologischen Instituts in Dahschur. *MDAIK*, 49, 259–294
- Tristant, Y., De Dapper, M., and Midant-Reynes, B. (2008). Human occupation of the Nile Delta during pre- and early dynastic times. A view from Kom el-Khilgan. In B. Midant-Reynes, Y. Tristant, J. Rowland, and S. Hendrickx (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 (=OLA 172)* (pp. 463–482). Leuven: Peeters
- Valloggia, M. (2011). *Abou Rawash I. Le complexe funéraire royal de Rêdjedef: étude historique et architecturale (=FIFAO 63)*. Cairo: Institut français d’archéologie orientale
- van den Brink, E.C.M. (1987). A geo-archaeological survey in the north-eastern Nile delta, Egypt: The first two seasons, a preliminary report. *MDAIK*, 43, 7–31
- van den Brink, E.C.M. (1988). The Amsterdam University Survey Expedition to the Northeastern Delta (1984–1986). In E.C.M. van den Brink (ed.), *The archaeology of the Nile Delta, Egypt: Problems and priorities* (pp. 65–114). Amsterdam: Netherlands Foundation for Archaeological Research in Egypt
- 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 E.C.M. van den Brink (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* (pp. 43–68). Tel Aviv: E.C.M. van den Brink
- van den Brink, E.C.M. (1993). Settlement patterns in the Northeastern Nile Delta during the fourth-second millennia B.C. In L. Krzyżaniak, M. Kobusiewicz, and J. Alexander (eds), *Environmental change and human culture in the Nile basin and Northern Africa until the second millennium B.C. (=Studies in African Archaeology 4)* (pp. 279–304). Poznań: Poznań Archaeological Museum
- van Haarlem, W.M. (1996). A tomb of the First Dynasty at Tell Ibrahim Awad. *OMRO*, 76, 7–34
- van Haarlem, W.M. (1998). The excavations at Tell Ibrahim Awad (Eastern Nile Delta): Recent results. In C. Eyre (ed.), *Proceedings of the Seventh International Congress of Egyptologists, Cambridge, 3–9 September 1995 (=OLA 82)* (pp. 509–514). Leuven: Peeters
- van Haarlem, W.M. (2000). An introduction to the site of Tell Ibrahim Awad. *Ägypten und Levante*, 10, 13–16

- van Wetering, J. and Tassie, G.J. (2003). Socio-political hierarchy of First Dynasty sites: A ranking of East Delta cemeteries based on grave architecture. In A.K. Eyma and C.J. Bennett (eds), *A Delta-man in Yebu (=Occasional Volume of the Egyptologists' Electronic Forum 1)* (pp. 123–146). Boca Raton, FL: Universal Publishers
- van Wesemael, B., de Wit, H., and van Stralen, L. (1988). The relation between natural landscape and distribution of archaeological remains in the Northeastern Nile Delta. In E.C.M. van den Brink (ed.), *The Archaeology of the Nile Delta, Egypt: Problems and priorities* (pp. 125–139). Amsterdam: Netherlands Foundation for Archaeological research in Egypt
- Verner, M., Bárta, M., Benešová, H., Vlčková, P., Callender, V.G., Landgráfová, R., ... Němečková, A. (2006). *The pyramid complex of Raneferef: The archaeology (=Abusir 9)*. Prague: Czech Institute of Egyptology
- Vernus, P. (1980). Kemwer. In W. Helck and W. Westendorf (eds), *Lexikon der Ägyptologie III* (pp. 384–386). Wiesbaden: Harrassowitz
- von Beckerath, J. (1975). Abusir. In W. Helck and E. Otto (eds), *Lexikon der Ägyptologie I* (p. 27). Wiesbaden: Harrassowitz
- von der Way, T. (1997). *Tell el-Fara'in – Buto I. Ergebnisse zum frühen Kontext: Kampagnen der Jahre 1983–1989 (=AV 83)*. Mainz am Rhein: Philipp von Zabern
- Wenke, R.J., Buck, P.E., Hamrroush, H. A., Kobusiewicz, M., Kroeper, K., and Redding, R.W. (1988). Kom el-Hisn: Excavation of an Old Kingdom settlement in the Egyptian Delta. *JARCE*, 25, 5–34
- Wenke, R.J., Redding, R.W., and Cagle, A.J. (eds). (2016). *Kom el-Hisn (ca. 2500–1900 BC): An ancient settlement in the Nile Delta of Egypt*. Atlanta, GA: Lockwood Press
- Wildung, D. (1975). Dahschur. In W. Helck and E. Otto (eds), *Lexikon der Ägyptologie I* (pp. 984–987). Wiesbaden: Harrassowitz
- Wilkinson, T.A.H. (2001). *Early Dynastic Egypt*. London: Routledge
- Wilson, P. (2006). *The survey of Saïs (Sa el-Hagar) 1997–2002 (=EES Excavation Memoir 77)*. London: Egypt Exploration Society
- Wilson, P. (2011). *Sais I. The Ramesside-Third Intermediate Period at Kom Rebwa (=EES Excavation Memoir 98)*. London: Egypt Exploration Society
- Wilson, P. and Grigoropoulos, D. (2009). *The West Nile Delta Regional Survey, Beheira and Kafr el-Sheikh Provinces (=EES Excavation Memoir 86)*. London: Egypt Exploration Society
- Wunderlich, J. (1993). The natural conditions for Pre- and Early Dynastic settlement in the Western Nile Delta around Tell el-Fara'in, Buto. In L. Krzyżaniak, M. Kobusiewicz, and J. Alexander (eds), *Environmental change and human culture in the Nile basin and Northern Africa until the second millennium B.C. (=Studies in African Archaeology 4)* (pp. 259–266). Poznań: Poznań Archaeological Museum
- Yacoub, F. (1981). The Archaic tombs at Tura el-Asmant. *ASAE*, 64, 159–161
- Yoyotte, J. (1958). Promenade à travers les sites anciens du Delta. *Bulletin de la Société française d'égyptologie*, 25, 13–24

- Zibelius, K. (1978). *Ägyptische Siedlungen nach Texten des alten Reiches* (=Beihefte zum *Tübinger Atlas des Vorderen Orients. Reihe B* 19). Wiesbaden: Reichert
- Ziermann, M. (2002). Tell el-Far'in – Buto. Bericht über die Arbeiten am Gebäudekomplex der Schicht V und die Vorarbeiten auf dem Nordhügel (site A). *MDAIK*, 58, 461–499
- Zivie, A.-P. (1986). Tell el-Jahudija. In W. Helck and E. Otto (eds), *Lexikon der Ägyptologie* VI (pp. 331–335). Wiesbaden: Harrassowitz