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Chronologies in Old World Archaeology, 1982–1983

EDITH PORADA

(Pl. 65)

The following reports were given in the Seminar on the Archaeology of Eastern Europe, the Eastern Mediterranean and the Near East at Columbia University during the academic year 1983–1984:

Problems of Middle Bronze Age Chronology: New Evidence from Egypt, by Manfred Bietak;
The Problem of the Chronological Significance of the Chariots of Tutankhamen, by Joost Crowwel;
Ebla: Old Syrian Cylinder Seals and Impressions, by Stefania Mazzoni;
The Cylinder Seals of the Early Palace Period at Ebla, by Paolo Matthiae;
Minoan Glyptic Art After the Fall of the Palace at Knossos, by Ingo Pini.

The material presented by Joost Crowwel will be included in the work by him and Mary A. Littauer to

be published under the auspices of the Griffith Institute in the *Tutankhamen Tomb Series* in the volume *The Chariots*. Pini's contribution will appear as part of the introduction to *CMS 2.4. Iraklion Museum. Die Siegel der Nachpalastzeit*. The cylinders and impressions from Ebla discussed by Matthiae will be included by him in the final publication of the palace. Stefania Mazzoni has published her report in *Akkadica* 37 (March–April 1984) 18–45; but one photograph and a few excerpts from her paper are published here. Also published is Bietak's contribution to the chronology of Egypt and Syria-Palestine with the addition, at his request, of comments on the cylinder seal from Dab'a by E. Porada.

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Problems of Middle Bronze Age Chronology: New Evidence from Egypt*

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In the course of excavations by the Archaeological Institute of Austria at Tell el-Dab'a in the eastern Nile Delta an extensive townsite of about 2 km.² with a series of Syro-Palestinian Middle Bronze Age strata has been partially explored.¹ This site is now generally identified as Avaris, the capital of several kings listed among the rulers of Dynasties XIII and XIV² and of the Dynasty XV Hyksos. It includes as well the southern part of Piramesse, capital of Dynasty XIX.³

The confrontation at this site of Syro-Palestinian

MB IIA–B culture with that of Egypt has produced thus far results somewhat at variance with chronological interpretations hitherto accepted by many scholars of Syro-Palestinian archaeology; the focus of the debate is the transition from MB IIA to MB IIB, and especially the place of MB IIB. The sequence at Tell el-Dab'a starts with a fully developed MB IIA level. Here I do not consider the question of the beginning of this culture, but rather concentrate on new information affecting the chronology of the MB IIB phase.

* For editing the English of this manuscript I am indebted to Mrs. Joan Huntoon, Columbia University.

¹ M. Bietak, *MittKairo* 23 (1968) 79–114; *MittKairo* 26 (1970) 15–41; *Tell el-Dab'a 2* (*Untersuchungen der Zweigstelle Kairo des Österreichischen Archäologischen Institutes* 1, Vienna 1975); "Avaris and Piramesse: Archaeological Exploration in the Eastern Nile Delta," *ProcBritAc* 45 (1979) 225–89; *AJO* 25 (1974–1977) 314–17; *AJO* 27 (1980) 288–90; *ÖJh* 51 (1976–1977), *Grabungen 1975–1977*, 1–8; *Lexikon für Ägyptologie* 5 (Wiesbaden 1983) 128–46, s.v. Ramsesstadt.

² J. von Beckerath, *Untersuchungen zur politischen Geschichte der zweiten Zwischenzeit in Ägypten* (Glückstadt 1964; hereafter Beckerath) 81–85; M. Bietak, "Zum Königreich des ^c₁-sh-R^c Ne-hesi," *Wolfgang Helck Festschrift* (in press).

³ M. Hamza, *ASAE* 30 (1930) 31–68; L. Habachi, *ASAE* 52 (1954) 443–559; W.C. Hayes, *Glazed Tiles from a Palace of Ramesses II at Kantir* (New York 1937); J. van Seters, *The Hyksos, A New Investigation* (New Haven and London 1966) 127–51; E.P. Uphill, *JNES* 27 (1968) 291–316; *JNES* 28 (1969) 15–39, as well as other authors.

Then we turn to the Palestinian evidence to ascertain how the differences may have developed.

ABSOLUTE CHRONOLOGY

Palestinian chronology is dependent on Egyptian absolute chronology. Therefore, it would be methodologically wrong to date the Tell el-Dab'a sequence according to the Palestinian dates in order to find its proper setting within the Egyptian framework.⁴ It is far more reliable to obtain absolute dates for the Tell el-Dab'a sequence from Egyptian material excavated at that site within the MB sequence. We can then correlate these findings with current Palestinian chronologies and thereby achieve a double check on their accuracy. MB chronology is also supported to some extent by correlation with Mesopotamian chronology, particularly in connection with the Mari texts.⁵ But major differences still exist among the adherents to the middle and low chronologies.

Finally, the term absolute must be used with caution. This discussion of New Kingdom chronology, which strongly affects the beginning of the Hyksos Period, is a good example of the complex problems that exist. Even the Middle Kingdom chronology is not as stable as we once thought it was. The differences among current chronological schemes can be best explained by noting the various interpretations of observations of the heliacal rise of the Sothis star from Memphis, Thebes and recently from Elephantine at Aswan (see chart).

It is most important to emphasize that the high chronology of the New Kingdom, still used in the *Cambridge Ancient History* (3rd ed.) and as a basis

⁴ As suggested to me by W.G. Dever in a personal letter; see also his essay, "Relations between Syria, Palestine and Egypt in the Hyksos Period," *Olga Tufnell Festschrift* (in press). According to Dever, the Syro-Palestinian MB chronology is well established.

⁵ A. Malamat, *JBL* 79 (1960) 12–19; and in *Near Eastern Archaeology in the Twentieth Century*, N. Glueck *Festschrift* (New York 1970) 164–77; Y. Yadin, *Hazor*, *The Schweich Lecture 1970* (London 1972) 2.

⁶ W.C. Hayes, in *CAH*³ 1.1, 173–93; M.B. Rowton, *CAH*³ 1.1, 193–239; the Memphite Sothis date for the 9th year of Amenophis I is also maintained by E.F. Wente and C.T. van Siclen III, "A Chronology of the New Kingdom," in *G.R. Hughes Festschrift* (*Studies in Ancient Oriental Civilization* 39, 1977) 217–61.

⁷ E. Hornung, *Untersuchungen zur Chronologie und Geschichte des Neuen Reiches* (*Ägyptologische Abh.* [ÄA] 11, Wiesbaden 1964; hereafter Hornung) 15–23; Beckerath 218–21; see also W. Helck, *Die Beziehungen Ägyptens zu Vorderasien im 3. und 2. Jahrtausend v. Chr.*² (ÄA 5, Wiesbaden 1972) 95–101. Recently, however, Helck has raised doubts about the validity of the Pap. Ebers date: cf. *GM* 67 (1983) 47–48.

⁸ R. Krauss, "Das Ende der Amarnazeit," *Hildesheimer Ägyptologische Beiträge* (*HÄB*) 7 (Hildesheim 1978) 189–93; and *Göttinger Miscellen* (*GM*) 50 (1981) 71–80; *GM* 70 (1984) 38; see

Sothis date, 9th year of Amenophis I (Papyrus Ebers date)	Beginning of New Kingdom = beginning of reign of 'Ahmose I, which lasted about 25 years
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Memphis ⁶ :	1544–1537 B.C.	1577–1570 B.C.
Thebes ⁷ :	1525–1517 B.C.	1557–1552 B.C.
Elephantine ⁸ :	1540–1506 B.C.	±1540 B.C.
	with strong emphasis on 1506 B.C. ⁹	

for Syro-Palestinian chronology, has already been ruled out convincingly by two studies. Beckerath¹⁰ reasoned that, while the reign of Thutmose III is well established by lunar dates from 1490 B.C. onward, autobiographical data from tombs demonstrate that the reigns of Thutmose I and II were too short to accommodate the Sothis date of the 9th year of Amenophis I in the high chronology range of 1544–1537 B.C. Hornung's synchronism of Ramses II (21st year) with Hattushili III and Shalmaneser I¹¹ further provides a good link to the well established Assyrian chronology, ruling out the high chronology accession of Ramses II prior to 1290 B.C.

If one accepts Beckerath's and Hornung's conclusions, then one must lower the date of the New Kingdom, the Hyksos Period and relevant dates of the Middle Bronze Age by about 20 years from the high chronology. In 1964, Beckerath recognized this fact and corrected the MB dates, putting the MB A/B transition at ±1720 B.C.¹² His conclusions were available 20 years ago, but were not applied to MB chronological considerations.¹³ In the meantime, because of a reduction of the duration of Dynasty XIX by about 14 years,¹⁴ Krauss, supported now by Hor-

also E. Hornung, "Chronologie in Bewegung," in *Edel-Festschrift* (*Ägypten und Altes Testament* [ÄAT] 1, Bamberg 1979) 247–52.

⁹ R. Krauss, *GM* 70 (1984) 38.

¹⁰ Beckerath 218–21.

¹¹ Hornung (supra n. 8) 50–52.

¹² Beckerath 122.

¹³ Cf. Dever (supra n. 4) and A. Kempinski, *Syrien und Palästina (Kanaan) in der letzten Phase der Mittelbronze II-B-Zeit (1650–1570 v. Chr.)* (ÄAT 4, Wiesbaden 1983) 214–16. These citations are not given in order to be critical, but rather to demonstrate that much more exchange of information is needed among the various disciplines to insure continued progress in reconstructing the past.

¹⁴ K.A. Kitchen, *BIFAO* 73 (1973) 197, n. 4; M.L. Bierbrier, *The Late New Kingdom in Egypt* (Warminster 1975); R. Krauss, *Sumerischen und akkadischen Königsinschriften* (*SAK*) 4 (Hamburg 1976) 161–99; and *SAK* 5 (1977) 131–74. A.H. Gardiner, *Egypt of the Pharaohs* (Oxford 1971) 445, assigns only 10 years for Merenptah and a simultaneous reign of Amenmose with Sethi II; see also J. von Beckerath, *Abriss der Geschichte des Alten Ägypten* (Munich and Vienna 1971) 66–67. Both scholars tried to correct the reduction forward. Krauss reduces the date backward, as the chronology of Dynasties XX and XXI seems to stand firm.

nung and others, is pressing hard for lowering the beginning of the New Kingdom to about 1540 B.C. Despite his convincing presentation¹⁵ and the obvious astronomical data in its favor, this new chronology is still the object of intense scholarly discussion,¹⁶ especially for the Middle Kingdom.¹⁷ In this presentation, the chronology of Beckerath, Helck and Hornung is used.¹⁸ A shortening of the end of Dynasty XII becomes necessary, however, because of a correction of the actual length of the reign of Sesostri III from 36 to 19 years.¹⁹ This alteration reduces the conventional date of the end of Dynasty XII by 17 years from ca. 1786 to ca. 1802 B.C.²⁰ It also lengthens the period of Dynasty XIII, and the distance from 1802 B.C. to the assumed beginning of the Hyksos Period (ca. 1650 B.C.) is in marked agreement with the date given by Manetho for Dynasty XIII (Barbarus: 153 years). With these facts in mind the following reconstruction can be presented:

end of Dynasty XII	1802 B.C.	1802 B.C.
Dynasty XIII (153 years)	1801-1649 B.C.	- 153 years
		<hr/> 1649 B.C.
Hyksos Period (108 years) ²¹	1649-1541 B.C.	- 108 years
		<hr/> 1541 B.C.
end of Hyksos rule during 11th regnal year of 'Ahmose		+ 11 years
		<hr/> 1552 B.C. ff.
beginning of Dynasty XVIII		

The spans of 153 years (Dynasty XIII according to Manetho) and 108 years (Dynasty XV according to the Turin papyrus) lead us to the 11th regnal year of 'Ahmose, who started his rule—according to Beckerath and Hornung—in 1552 B.C. It is generally assumed that this king succeeded in ending the Hyksos rule only after consolidating his power approximately in the midst of his 22-25 year reign.²² Thus, 11 years would fit into this calculation perfectly; there is still

debate whether the 11th regnal year of an unnamed king on the verso of the papyrus Rhind, with remarks associated with the end of the Hyksos rule, is the date of Khamudy (the last Hyksos) or of 'Ahmose himself.²³ Both opponents most likely came to the throne at about the same time, soon after the struggle between their respective predecessors, Apophis and Kamose.

A short discussion of the Manethonian date for the 184 year duration of Dynasty XIV is in order. Can this be a reliable estimate when 153 years makes sense for Dynasty XIII after reducing the length of Dynasty XII? Since the total number of kings for Dynasties XIII through XVII listed in the Royal Canon of Turin seems to be approximately the same as stated in the Manethonian excerpts, the 76 Xoite kings (Dynasty XIV) could theoretically be allowed a longer time span than the 60 kings of Dynasty XIII. If we take the term of 184 years seriously, we must make a major part of Dynasty XIV contemporaneous with Hyksos rule. It is possible to suppose that in the central northern Delta (Xois), difficult to reach from the eastern Delta, local dynasties more or less independent of Hyksos rule existed. There is no proof so far for Hyksos domination in the northern central Delta, but there is material and literary evidence of their control of Middle and even Upper Egypt. If we, therefore, count back 184 years from the end of the Hyksos rule (± 1541 B.C.) we arrive at 1725 B.C. This is a reasonable date for the beginning of small independent rulers in the Delta after the last strong kings of Dynasty XIII, Neferhotep I and Sebekhotep IV. These two reigns have been dated until now ca. 1740-1720 B.C., but after raising the end of Dynasty XII, we may now place them at ca. 1750-1730 B.C.

This chronological framework is used here to assess the dates of the MBA, particularly the transition from MB IIA to MB IIB. The individual reigns of the Hyksos kings cannot yet be associated with distinct strata of Tell el-Dab'a, but we have found a new Hyksos name on a stela, allowing a likely royal succession which can be reconstructed as follows (p. 474).

¹⁵ Krauss: all references cited supra n. 8; Hornung 50-52.

¹⁶ Cf. E. Wente, *JNES* 42 (1983) 315-18.

¹⁷ I wish to thank R. Krauss for information on this subject.

¹⁸ See supra n. 7.

¹⁹ W. K. Simpson, *Cd'E* 47 (1972) 45-54, and *Lexikon der Ägyptologie* 5 (Wiesbaden 1984) 903; R. Krauss, *GM* 70 (1984) 37.

²⁰ We are not taking the new date of year 13 of Amenemhat IV into consideration, because the Royal Canon of Turin gives the length of his reign as precisely 9 years, 3 months and 27 days; since this gap is not closed by other dates, we may assume that 9+ years

was the actual reign and 13 years was his reign including a coregency. Cf., however, Beckerath, *SAK* 4 (1976) 50.

²¹ According to the Royal Canon of Turin. The reading of 108 years was verified by Beckerath 136.

²² Beckerath 209-11; Helck (supra n. 7) 113.

²³ E. Peet, *The Rhind Mathematical Papyrus* (London 1923) 128-31, pl. Y (no. 87); C. Vandersleyen, *Les guerres d'Amosis* (Brussels 1971) 34-40; Beckerath 210; W. Helck, *Historisch-biographische Texte der 2. Zwischenzeit und neue Texte der 18. Dynastie* (Wiesbaden 1975) 78.

Monuments	Manethonian Tradition ²⁴
1. <i>M</i> ₃ - <i>jb</i> - <i>R</i> ^c Sheshi	1. Salitis
2. ?	2. Beon (Buon)
3. <i>Swsr</i> - <i>n</i> - <i>R</i> ^c Khayan	3. Apakhnan (Pakhnan)
4. Yanassi (<i>jd</i> <i>n</i>) ²⁵	4. Iannas (Staan)
5. <i>'</i> ₃ - <i>wsr</i> - <i>R</i> ^c 26 Apopi	5. Apophis
6. Khamudi	6. Assis (Archles)

RELATIVE CHRONOLOGY AND MEANS OF DATING

Relative chronology is the periodization of cultures and the relationship of these periods among different cultures. For Egypt, comparison is not always easy as its periodization is political and not cultural. Therefore, to correlate Egyptian periods to neighboring cultures will always mean to approach absolute chronology with the handicap of an insufficiently explored material culture.

Here it is useful to discuss several methods for ascertaining absolute dates, noting that the context of an object must be evaluated carefully to determine its reliability.

1. Direct dating

a) The ideal case is an architectural object in situ, such as a doorway or a stela, mentioning the name of a king or well known person whose place in history has already been established.

b) Objects like scarabs, bronzes and jar sealings with a royal name are only *termini post quos* unless the time range of such objects can be strictly defined by special studies. For example, scarabs with names of Middle Kingdom rulers still occur in Dynasty XVIII. As chronological indicators, they must be treated with some skepticism. On the other hand, inscriptions of unimportant kings or objects which appear only in a brief time span can serve as good dating devices. Objects bearing royal names may, however, be a good source for dating when they appear in their earliest possible time range.

2. Indirect dating

c) Artifacts, preferably those of a limited chronological range, dated from deposits of other sites, preferably in the context of well dated architectural features.

d) Artifacts, preferably those of a limited chronological range, dated in contexts of other places by other dated artifacts (inscribed objects).

²⁴ As corrected by Beckerath 137.

²⁵ See M. Bietak and M. Görg, *MittKairo* 37 (1981) 63–73, pl. 6. The reconstruction to *Yanassi-jdn*, i.e., “the Lord may raise” or “exalt,” comes from Kempinski, according to an identification of the ear in the writing as a phonogram for *jd**n* = Lord (according to a

In general, dating methods **a** and **c** are more reliable than **b** and **d**. In special circumstances, however, as specified under **b**, the latter two categories may also yield valuable results.

3. Seriation

Much more precision can be obtained for the application of the methods above, if they can be inserted into a finely seriated sequence, especially when this sequence has been worked out from stratified contexts. Seriation is primarily a recognition of the continuous and subtle changes manifested in artifacts and, therefore, can offer an excellent means of relative dating. A seriated sequence can also allow cross relationships to other, perhaps better dated assemblages (see below).

4. Historical dating

This is the attempt to fit archaeological assemblages and contexts into an existing historical framework. This method, although it is often applied, should, however, only be used in connection with other dating methods as discussed above, because it can lead to a preconceived interpretation, rather than allowing the archaeological material to speak for itself.

THE TELL EL-DAB‘A STRATIGRAPHY AND RELATIVE CHRONOLOGY

The strata in Tell el-Dab‘a reveal a Syro-Palestinian MB culture with varying Egyptian influence (architecture, burial customs, pottery). This cultural evidence may point less to Palestine than to coastal Phoenicia, particularly to Byblos, although northern Palestine (Megiddo) can be included in the cultural contact zone. Therefore, the presence of such a vast MB site in the Delta during the late Middle Kingdom can be explained by the growth in Tell el-Dab‘a of a colony of merchants, craftsmen and sailors from the area of Byblos and can be interpreted as a manifestation of active commercial relations between Byblos and Egypt during the Middle Kingdom. The scarcity of MB IIB evidence in coastal Lebanon can further be interpreted as a sudden decline in the mercantile power of Byblos and a major migration of Byblites by sea to the Eastern Delta, where their kinsmen had already established themselves in an Egypt lacking a strong central kingship.²⁷

kind communication by M. Görg).

²⁶ Also with throne names: *'*₃-*qnj*-*n*-*R*^c or *Nb*-*h**pš*-*R*^c.

²⁷ M. Bietak, “The Origin of Asiatics and the Hyksos in the Eastern Nile Delta,” *Abstracts of the IIIrd International Congress for Egyptology, Toronto 1982* (in press); and “Some News about

Thus, perhaps the rise of the Hyksos rule can be best explained by the increased settlement of Byblites at the end of the eighteenth century B.C. in the Eastern Delta.

Table 1 presents a summary of the stratigraphy of Tell el-Dab'a as it is known at present. Two major sites are now under study. Tell A, already published in several preliminary reports, and area F, which is more toward the center of the town.²⁸ The coordination of both stratigraphic series has been done by pottery seriation. There may be slight changes in the future.

ABSOLUTE DATING OF THE SEQUENCE

a) None of the architectural features has been firmly dated at present by inscription.

b) Datable objects: see Table 2.

It becomes clear that the MB series in Tell el-Dab'a can only have started after 1800 B.C. with stratum d/2-1. The subsequent strata G, F and E/3 have to be placed within Dynasty XIII and not before. The traditional Hyksos scarabs came from strata E/1, D/3 and D/2, while the Sesostri I scarab clearly is an heirloom; the bronze plates of Neferhotep, mutilated intentionally, may have come in this context only after the reign of this powerful king (see Table 3).

c) Artifacts, in styles of short duration, dated from deposits of other sites, preferably in securely dated architectural remains. As examples, new evidence from Egyptian contexts is discussed here.

1. *The Kerma evidence:* In the subsidiary grave K 1084 of tumulus X was found a black polished incised juglet, typical for strata F and E/3 (never occurring later) at Tell el-Dab'a (cf. ill. 1).²⁹ It is a large example of its type, 13 cm. in height, with an inturned lip, a two-part upper and lower ornamental pattern, a bipartite handle and a broad ring base. The pattern consists of six or more standing and pendant narrow triangles, carefully filled with comb imprints.

In subsidiary grave K 1042 of the same tumulus the body of another large black polished incised juglet of a

slightly more developed type was found.³⁰ Its original height must have been nearly 20 cm. Its ornaments consisted of about four standing and pendant triangles filled with comb impressions in broken lines. The button base is still broad, but parallels in Tell el-Dab'a would date from stratum E/3-2 and with less precise surface ornamentation until early E/1. Similar fragments, never published, were found in the subsidiary graves K 1045 and K 1098.³¹ Another parallel exists from Jericho tomb G 37, belonging to Kenyon's chronological group II.³²

Williams used those Kerma juglets contemporary with Tell el-Dab'a strata F-E/3 and E/3-2 to juxtapose the subsidiary grave of K X to the subsidiary grave K 334 of the earlier tumulus III.³³ In the latter grave a stone jar with the name of Sebeknakht I or II was found.³⁴ Sebeknakht I is known from a juridical stela (Cairo J. 52453) to have held the mayoralty of El-Kab in year 1 of King Nebiryerawet I (Dynasty XVII, ±1625 B.C.). This evidence would suggest that Tell el-Dab'a stratum E/3-2 should be dated after 1650 B.C.

This argument, although feasible, must be regarded with some caution. The exact chronological synchronism of subsidiary graves from two different tumuli is debatable.

There is, however, another more direct chronological link in tumulus X itself.³⁵ In corridor B of tumulus X the base of an alabaster statue of *Shm-Rchwj-t3wj* was found.³⁶ This was either the king with the nomen Amenemhet Sebekhotep or Pentini (Beckerath list XII 16 or XIII 3). Both these kings reigned in the first half of the eighteenth century (according to the very low chronology of Krauss, in the second half of the eighteenth century). It is now generally agreed that the Middle Kingdom statues in Kerma were only acquired after 1650 B.C., when the Kushites were able to take over the Egyptian fortresses in Lower Nubia. Tumulus X must come after this date.³⁷ This chronological premise, largely accepted by experts on Nubia,³⁸ can be firmly corroborated now by the scarabs from tumulus X. Twenty-two scarabs from the

Trade and Trade Warfare in Egypt and the Ancient Near East," *Marhaba* 3/83 (Vienna 1983) 41–43.

²⁸ See more recently M. Bietak, *ÖJhBeibl* 54 (1984) 10–19; J. Dorner, *ÖJhBeibl* 54, 20–21.

²⁹ G.A. Reisner, *Excavations at Kerma* 4–5 (Cambridge, Mass. 1923) 383, fig. 264.25, pl. 70.3.

³⁰ Reisner (supra n. 29) fig. 264.23.

³¹ Reisner (supra n. 29) fig. 383.23.

³² See infra ns. 64, 65.

³³ B. Williams, *Archaeology and Historical Problems of the Second Intermediate Period* (Diss. T 25834, Chicago 1975) 2043, table 74; 2045, table 75.

³⁴ Reisner (supra n. 29) 523, fig. 344.46.

³⁵ Bietak 1979 (supra Table 2, n. 7) 234.

³⁶ Reisner (supra n. 29) 516, fig. 343.33.

³⁷ F. Hintze, "Das Kerma-Problem," *ZAeS* 91 (1964) 79–86; M. Bietak, *Studien zur Chronologie der nubischen C-Gruppe (Österr. Akademie der Wissenschaften, phil.-hist. Kl. Denkschriften* 97, Vienna 1968) 155. The Middle Kingdom statues were placed in the corridor like the bodies of the servants of the Kushite kings. It is hardly conceivable that an Egyptian pharaoh would hand over his image with all its magical implications to a "wretched Kushite," thereby endangering his identity and making him subject to an enemy.

³⁸ A similar explanation for Middle Kingdom sculpture in Palestine was presented by J.M. Weinstein, *BASOR* 213 (1974) 54; cf. O'Connor 1974 (supra Table 2, n. 5) 32–33, fig. 12.

TABLE 1

Area F Center of Town	Characteristics	Tell A Eastern Suburb	Characteristics	Relative Dating	Absolute Dating (Beckerath, Helck, Hornung)	Absolute Dating (Krauss)
stratum e	planned orthogonal settlement, Egyptian culture	—	—	First Intermediate Period, Sedment II period	±2050	±2010
d/2	Settlement of rectangular sandbrick houses of Asiatic type, surrounded by enclosure wall; family cemeteries within land plots	—	—	MB IIA culture, influenced by Egyptian culture of late Dyn. XII and Dyn. XIII	after ±1800 ±1760	after ±1755 ±1730
d/1	Egyptian palace of uncertain size, carefully constructed walls, 2, 2½ to 3 bricks wide, columned courts, symmetrical layout, magazines and domestic quarters	?	?			
	hiatus	stratum H	open settlement, mainly enclosure walls of sandbricks	MB IIA, influenced by Egyptian culture of late Dyn. XII and Dyn. XIII	±1750 ±1740	±1725 ±1720
c/1-2	small huts, walls ½ brick wide, and more substantial two-room houses; in between small family cemeteries, vaulted brick chambers; small cemetery of simple pit burials; beginning of Tell el-Yahudiya ware; bronze moulds, crucibles	G/2-4	densely developed settlement of sandbrick; family graves within land plots, close to houses; at the beginning (G/4) only very thin walls ½ brick in width; beginning of Tell el-Yahudiya ware; bronze moulds	MB IIA/3 and Egyptian culture of Dyn. XIII	±1710	±1690
b/2	compact settlement with villas in Egyptian layout, surrounded by simpler buildings of dependents; intramural burials; graves showing Egyptian influence	F	new occupation, new distribution of land-plots, scattered buildings of mudbrick; family cemeteries with vaulted tombs, surrounding temple area; regular burial customs	MB IIA/B transitional and Egyptian culture of Dyn. XIII	±1680	±1660

b/1	big houses of sandbrick and mudbrick, walls of 2 bricks and more in width	E/2-3	sacred area, surrounded by cemeteries with mortuary temples in each; concentration of mortuary cult on the eastern edge of the town; north of this area small houses, donkey sacrifices	MB IIB/1-2 and Egyptian cultural influence	±1640	±1620
a/2	sacred area with temple, offering pits and donkey sacrifices in front of temple; surface largely denuded; tombs in the environment of the sacred area	E/1	houses begin to be built in the cemeteries surrounding the large sacred area; no homogeneity in burial customs; introduction of mudbrick; evidence of increased Cypriot links	MB IIB/3 Egyptian cultural influence	±1600	±1590
a/2	surface denuded; tombs and waste pits	D/3	increased density in occupation; only minor cemeteries; tombs in houses; Egyptian burial attitudes (extended burials) increasing; architecture in mudbrick only	MB IIB/3 Egyptian cultural influence increasing	±1570	±1560
	surface denuded; possibly looted tombs	D/2	dense occupation; late Hyksos period burials in family vaults under the floor, integrated into the house construction; Egyptian vaulting prevailing; burial attitudes mainly extended; scarce Tell el-Yahudiya ware; Egyptian pottery prevailing; strong trade links with Cyprus in evidence	local variant of MB II/C, very strong Egyptian cultural influence	±1540	±1530
		D/1	strong retaining walls; Egyptian pottery, Dyn. XVIII only; surface largely empty further Ramesside and Late Period stratigraphy			

TABLE 2: DATABLE OBJECTS

Stratum of Tell el-Dab'a	Object	Maximum Dating Range
stratum d/1 (contemporary with or earlier than stratum H)	cylinder seal ¹	1800–1700 B.C.
stratum G/1-2 A/II-m/15, no. 9	scarab with lotus back ²	1750–1650 B.C.
stratum F A/II-l/12, no. 5	scarab of an <i>jdñw-n-mr-sd; wt-^c; m</i> ³	13th dynasty 1800–1650 B.C.
A/II-l/16, no. 4	scarab with deeply cut human representation ⁴	1700–1550 B.C.
stratum E/3 A/II-n/13, no. 8	scarab with the name of Sebekhotep	1800–1650 B.C.
stratum E/1-D/3	<i>Rdj-R^c</i> scarabs, ⁵ <i>nr^c</i> scarabs and deeply cut figures on scarabs, ⁶ tripartite scarabs	1650–1540 B.C.
stratum E/1-D/3 A/II-n/15, no. 1	scarab with the name of Sesostris I	after 1929/26 B.C.
stratum D/3	2 bronze plates with deliberately mutilated images of Neferhotep I	after 1725 B.C.
stratum D/2	scarab with tripartite pattern, <i>nr^c</i> signs and without division line ⁷	1650–1540 B.C.

Notes:

1. See E. Porada, "The Cylinder Seal from Tell el-Dab'a," *infra* pp. 485–88. It is important that the cylinder seal most likely was cut locally. R.M. Boehmer, who supports the low Mesopotamian chronology, would prefer a date in the second half of the 18th c. B.C. (verbal communication, November 1982). Such a date can only be reconciled comfortably when applying the very low chronology of Krauss to the Tell el-Dab'a stratigraphy.
2. For the date of those scarabs, see O. Tufnell, *Levant* 2 (1970) 95–98, who produced evidence that scarabs with lotus backs were particularly in fashion from the time of Neferhotep I and *H^c-nr-R^c* Sebekhotep IV until the beginning of the Hyksos Period. See also J.M. Weinstein, *BASOR* 217 (1975) 10.
3. M. Bietak, *MittKairo* 23 (1968) pl. 32c, row 2, no. 3; G.T. Martin, *Egyptian Administrative and Private Name Seals* (Oxford 1971) 29, no. 311a, pl. 42A.20.
4. Still unpublished. Representation of a prince with Egyptian pleated kilt, but otherwise foreign appearance and beard. The corrupted inscription could be read *rh-nj-ntr*.
5. D. O'Connor, *World Archaeology* 6 (1974) fig. 13, presents this type as purely Hyksos. Weinstein (*supra* Table 2, n. 2) 10, attests that "this series (*Rdj-R^c* scarabs) of signs appears on a number of scarabs of Dynasty XV–XVII date in Egypt, but is not attested in the Middle Kingdom and only rarely in Dynasty XIII." In the latter Weinstein is quoting O'Connor (*supra*) and his unpublished dissertation: *Nubian Archaeological Material of the First to the Second Intermediate Periods: an Analytical Study* (Diss. Cambridge University 1969) fig. 117, design type 8 (cf. fig. 112/8). O'Connor (1974), however, presents this type as purely Hyksos. In Tell el-Dab'a this scarab type is frequently represented from stratum E/2 onward.
6. The data on scarabs are going to be published by Christa Mlinar in a volume containing studies on the material excavated at Tell el-Dab'a. Concerning the characteristics of *nr^c* signs, tripartite patterns and deeply cut figures and their chronological implications, see fig. 3 and: H. Stock, *Studien zur Geschichte und Archäologie der 13. bis 17. Dynastie Ägyptens* (*AegForsch* 12, Glückstadt 1942) 23–46; E. Hornung and E. Staehelin, *Skarabäen und andere Siegelamulette aus Basler Sammlungen* (Mainz 1976) 51–52; and particularly O'Connor 1974 (*supra* Table 2, n. 5) 30–33, fig. 13, who shows some human figure representations already present during Dynasty XIII, with a sharp increase during the Hyksos Period.
7. M. Bietak, *MittKairo* 26 (1970) 33, pl. 18c, d (there strata D/2 and D/3 had not yet been separated from each other); and "Avaris and Piramesse" (*supra* text, n. 1) pl. 35b; E. Reiser-Haslauer, in *Funde aus Ägypten* (Ausstellungskatalog Kunsthinst. Museum, Vienna 1979) 72–73 (G 119), figs. 54, 55.

TABLE 3

Dynasties in the Delta	Strata of Tell el-Dab'a	Means of Dating in Tell el-Dab'a	Middle Bronze Age, relative Chronology	Chronology W. Helck Beckerath E. Hornung NK: Sothis Thebes	Chronology R. Krauss MK & NK: Sothis Aswan
Late XII	HIATUS	Cylinder seal Dyn. XIII scarab Scarab with deeply cut human figures Scarab of Sebekhotep Scarab of Sesostri I 2 bronze plates of Nefertotep I	?	1850 B.C.	1800 B.C.
XIII	d/2-1 = H? G/4 G/2-3	Lotus back scarab Scarab with deeply cut human figures Rdj-R ^c scarabs c _{nr} ^c and figure scarabs Tripartite pattern on scarab	MB IIA	1800 B.C. 1750 B.C.	1750 B.C.
XIII XIV	F E/3 E/2		MB IIA/B	1700 B.C.	1700 B.C.
XV	E/1 D/3 D/2		MB IIB	1650 B.C.	1650 B.C.
			MB IIC	1600 B.C.	1600 B.C.
				1550 B.C.	1550 B.C.
XVIII	D/1	(occurrence, not frequency; lines mean life spans)			

"sacrifice corridor"—burials contemporaneous with the main burial—are typical of the time of Dynasty XV. Some of them have a tripartite pattern filled with the so-called *c_{nr}^c* signs.³⁹ This type is among those scarabs with royal names unknown until *M₃^c-jb-R^c* and Sheshi. Twelve seals bear deeply cut animal and human figures, most of them with falcon heads, snakes and crocodiles typical of the Hyksos Period.⁴⁰ Furthermore there is one *Rdj-R^c* scarab and one twisted rope type.⁴¹ The latter occurs, according to evidence from Jericho and Tell el-Dab'a, only late in the Second Intermediate Period. The best dating evidence from tumulus X at Kerma is, however, a seal of the well known Hyksos chancellor *H₃r*.⁴² Therefore, there is little doubt that the date of the tumulus is post-1650 B.C. (Krauss: post-1640 B.C.). The subsidiary graves should accordingly be placed some time

later. While one may argue that the juglet corresponding to strata F-E/3 may be an heirloom, this is hardly possible given the presence of the second juglet and two additional ones of a type present in strata E/3 and E/2 in Tell el-Dab'a. This would mean that, using the highest dating possible, stratum E/2 at least marks the beginning of the Hyksos Period. This premise is used here. Attention has, however, to be drawn to another possibility. The subsidiary burial K 1084 with the stratum F/E/3 juglet may be earlier than subsidiary burials K 1042, 1045 and 1098, so stratum E/3 at Tell el-Dab'a could be placed after ca. 1650 B.C. (1640 B.C., Krauss), a possibility that also deserves serious consideration.

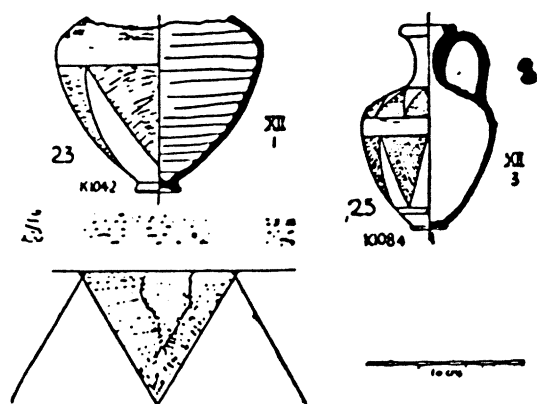
2. *Site seriation*: At Tell el-Dab'a a stratigraphical seriation has been worked out according to the change in dimensions of round bottomed drinking cups of

³⁹ Reisner (supra n. 29) 83, pl. 40.69, 70.

⁴⁰ Reisner (supra n. 29) pl. 40.77-81, 83-86, 90-91.

⁴¹ Reisner (supra n. 29) pl. 40.49, 52.

⁴² Reisner (supra n. 29) pl. 40.



Ill. 1. Kerma, tumulus X, subsidiary burials, Tell el-Yahudiya ware paralleling types in Tell el-Dab'a, strata E/2-3 and E/3-F. (After Reisner, *Kerma* 4-5, fig. 264)

Egyptian manufacture (ill. 2). The general tendency of development is from shallow, unrestricted to deep, slightly restricted forms.⁴³ Those cups occur in large quantities in tombs as well as in settlement contexts and provide, as comparison with well stratified contexts shows, a good means of relative dating. But cups, singly or in pairs, are not sufficient evidence. One needs at least three, four or more examples per context to have a statistical basis for the variability of a time horizon. In this case the seriation proved to be accurate in so far as it could be controlled by stratigraphical positions and by the occurrence of other artifact types.

Assemblages of such cups, which cover the whole period of the Middle Kingdom and the Second Intermediate Period, have also been found in other Egyptian contexts. Two well dated assemblages came from the excavations of Dieter and Dorothea Arnold at the pyramid complex of Amenemhat III at Dahshur.⁴⁴ The earlier complex (no. 6) is from the reign of Amenemhat III, ca. 1859-1822/21 B.C.⁴⁵ or afterward. The range of indices from this assemblage is distinctly earlier than the earliest Tell el-Dab'a collection from stratum d/2 = H or before H. This means that the MB series of Tell el-Dab'a started after ± 1800 B.C. (1755 B.C., Krauss).

The second complex (no. 7) from Dahshur comes from the valley temple area. It is waste material dumped there after the mortuary cult had come to an end sometime after the beginning of Dynasty XIII,

and after a secondary installation there had been abandoned. Dorothea Arnold suggests a date for complex 7 between 1760 and 1650 B.C., most likely at ± 1700 B.C.⁴⁶

As complex 7 has the same index dates as stratum c = G at Tell el-Dab'a, a date of about the second half of the eighteenth century B.C. is indicated for c = G.

Comment on the stratigraphical seriation graph
(Ill. 2)

The statistics on the pottery index of drinking cups, based on stratigraphically controlled collections, clearly show a progressive limitation of variability and a development from more or less shallow to deep shapes. This trend is obvious despite the great difference in the sample size from the various strata. The strata pairs d/2 and d/1, G and c, b/1 and E/2 show almost identical values while the values of F and b/2 are similar. Strata d/2 and d/1 are successive and not contemporaneous. Their similar values may be explained by the very short duration of stratum d/1 (a palace) following directly upon stratum d/2. The other pairs of strata demonstrate, however, the contemporaneity of certain strata from the two excavation areas A/II and F/I. There seems to have been a hiatus between strata d/1 and c (G). The phenomenon of division of the drinking cups of stratum d/1 into two clusters cannot yet be explained.

When considered in their entirety the drinking cups of the earlier strata show considerable variability. Groups from a single context do, however, often show much less variability, and offer a distinct cluster which demonstrates clearly the precise position of a group within the overall sequence. The stratigraphical attribution and the position of the index cluster provide mutual controls on the reliability of this dating system.

Two well dated assemblages from Dahshur fit into this chronological framework perfectly. Here we also find a larger variability and higher values for the earlier assemblage, complex 6, and a more limited range and lower values for complex 7. Complex 6 from the end of Amenemhat III's reign clearly precedes the entire sequence of strata at Tell el-Dab'a. Complex 7, which develops a considerable time after the beginning of Dynasty XIII, has nearly identical values to stratum G (c) at Tell el-Dab'a. The chronological connection of both assemblages is further reinforced by the presence of the earliest examples of the Tell el-Yahudiya ware and other types of pottery. Thus this system seems to be a very fine tool for relative and absolute dating in Egypt. It becomes possible to link isolated assemblages to the Tell el-Dab'a sequence and also to incorporate well dated assemblages from other sites, provided that round bot-tomed drinking cups are present in sufficient numbers.

⁴³ Cf. also Dorothea Arnold, *MittKairo* 38 (1982) 51 fig. 14.

⁴⁴ Arnold (supra n. 43). I am indebted to Dorothea Arnold for providing me with the data from Dahshur and for consultation.

⁴⁵ After reducing the regnal years of Sesostri III from 36 to 19 years, the dates for Amenemhat III became higher by 17 years than

the conventional dates. According to R. Krauss, *GM* 70 (1984) 38, the reign of Amenemhat III may be newly assessed from 1818/17 to 1771/70 B.C.

⁴⁶ Arnold (supra n. 43).

The correlation of complex 7 with stratum G is also corroborated by early types of Tell el-Yahudiya ware with 3 to 4 horizontal zones of ornaments, the developed rims of the big chaff-tempered bottles, and the flat, horizontally trimmed rims of big marl clay vessels in both stratum G and complex 7. As stratum G represents still pure MB IIA material, there is little possibility of placing the transitional period of MB IIA-B (= stratum F of Tell el-Dab'a) back to 1750 B.C. or even to 1800 B.C.⁴⁷ It should be strongly emphasized that there is no chance for the high or even middle chronology, especially as the seriation suggests a time break between the palace stratum d/1 and stratum G. But again there is a theoretical possibility of dating stratum G even later, shortly before and around 1700 B.C., which cannot be ruled out according to the evidence. Within this phase of the discussion we are again using the highest possible range.

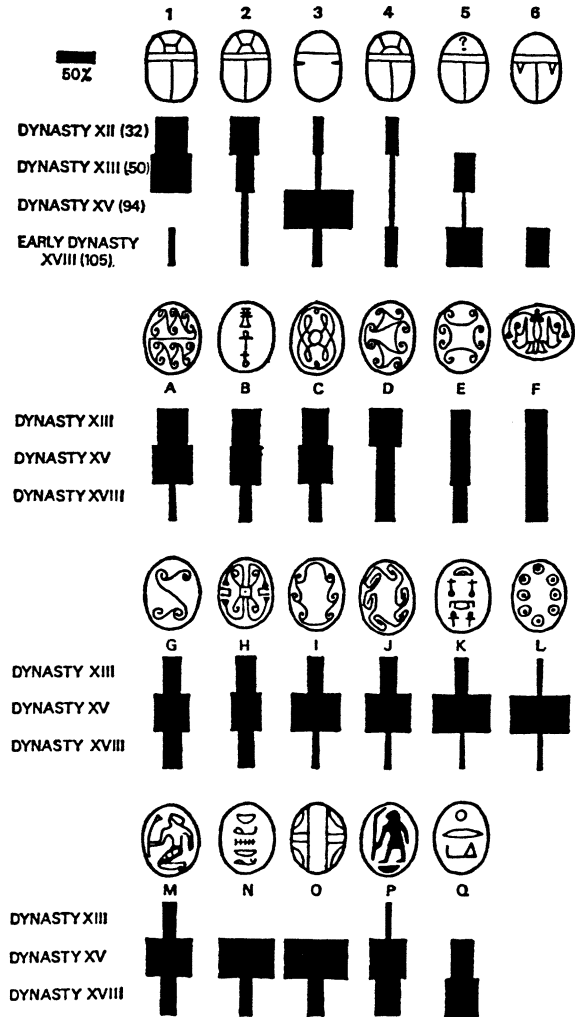
CHRONOLOGICAL EVIDENCE FROM SYRIA/PALESTINE

Results of our dating differ from chronological concepts used in Syro-Palestinian archaeology. To a certain degree such differences can be explained by the use of older chronological schemata ("high chronology"), which would make a difference of 25 to 30 years in placing the Hyksos Period and, when using the new very low chronology of Krauss, 45 to 50 years for the Middle Kingdom. Besides differences in the use of various absolute Egyptian chronologies, which could be easily overcome by agreeing to one specific concept, the main problem is the difference in the relative chronology, and in the character and development of the MB culture of the eastern Nile Delta and southern coastal Palestine in contrast to the rest of Palestine. Therefore, our attention is focused now on the correlation of the internal division of the Syro-Palestinian Middle Bronze Age culture in relation to Egyptian periodization.

Some scholars now correlate the Hyksos Period only with the later part of the MB IIB-C series, i.e., MB IIC.⁴⁸ The major evidence consists of scarabs with Hyksos names, but there is no agreement on the relative dating of the respective contexts (ill. 3).⁴⁹ Of special importance for the late correlation of the Hyk-

sos Period is a scarab with the Hyksos name Sheshi, placed early among the kings of Dynasty XV.⁵⁰ It was found in the late tomb group V (= MB IIC) in Jericho.⁵¹ There have also been other occurrences of Sheshi scarabs explained as being in a late context.⁵²

There is, however, no MB IIC material in the eastern Nile Delta, neither in Tell el-Dab'a nor any-



Ill. 3. Statistical graphs of chronological spans of scarabs of the Middle Kingdom and Second Intermediate Period. (After D. O'Connor, *World Archaeology* 6 [1974] fig. 13)

found under the levels of MB IIB wall foundations. Kempinski, (supra n. 12) 73 and 140-41, explains them, however, as foundation deposits. There is no proof for such an assumption. The scarabs most likely are older than those buildings, while tombs cutting into one of those buildings (LA) were still from the MB IIB-C period. Many other examples can be quoted.

⁴⁷ As, e.g., Dever (supra n. 4) still insists.

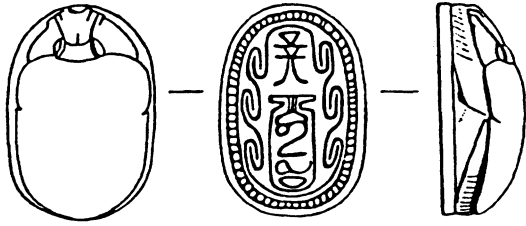
⁴⁸ Dever (supra n. 4) figs. 2 and 3; Kempinski (supra n. 12) correctly sees continuity throughout the MB IIB-C period. Therefore, he only uses MB IIB for both MB IIB and C and synchronizes the period of Dynasty XV with the late phase of MB IIB.

⁴⁹ E.g., the correlation of the tomb of Barqay with Megiddo, strata XII-XI by R. Gophna and V. Sussman, *'Atiqot* 5 (1969) 9, 13 (in Hebrew); Kempinski, (supra n. 12) 71, correlates it with strata XII-X. The contexts of two *Mj^c-jb-R^c* scarabs from Tell el-Ajjul can only be explained as purely MB IIB. They had been

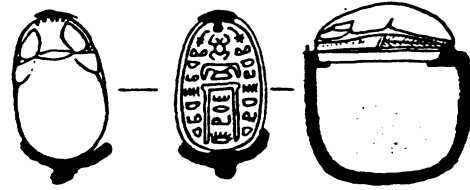
⁵⁰ Beckerath 133-35, 270.

⁵¹ D. Kirkbride, in K.M. Kenyon, *Jericho 2* (London 1965) fig. 301.2.

⁵² Kempinski (supra n. 12) 69.



Ill. 4. Jericho, early tomb group III, scarab of $M_3^c-jb-R^c$. (After Kirkbride in *Jericho* 2, fig. 291.7)



Ill. 5. Jericho, tomb group II, scarab of $Nbw-hpr-R^c$. (After Kirkbride in *Jericho* 2, fig. 286.13)

where else. We call the nearly complete Egyptianizing of stratum D/2 in Tell el-Dab'a a Delta variant of MB IIC,⁵³ while in Palestine this phase is characterized, among other things, by a predominance among the tomb goods of cylindrical juglets.⁵⁴

A closer inspection of the distribution of scarabs among the tomb groups I-V in Jericho reveals, however, a seal of the Hyksos $M_3^c-jb-R^c$ in an early grave of tomb group III (ill. 4).⁵⁵ He is considered to be identical with King Sheshi of tomb group V. His name on the seal is written within a cartouche in the same corrupt style as on many of his scarabs.⁵⁶ This may be the reason why his seal was overlooked. From tomb group III comes also a scarab of $H^c-htp-R^c$ (Sebekhotep V),⁵⁷ a king of late Dynasty XIII, ca. 50 to 60 years before Hyksos rule. This scarab should have raised questions about the exclusive correlations of the Hyksos Period with MB IIC.

Among tomb group II of Kenyon was found a scarab (ill. 5) bearing the name of $Nbw-hpr-R^c$ (Intef),⁵⁸ a king of the beginning of Dynasty XVII (ca. 1650 B.C.), which was contemporaneous with Dynasty XV of the Hyksos.⁵⁹ As the combination $nbw-hpr$ is not infrequent among scarabs with the so-called nfr -signs, covering the whole Second Intermediate Period including Dynasty XIII, it may be argued that the missing R^c was added by accident, not meaning the king. I would agree with adherents to the high chronology that this is a possibility. Close observation reveals, however, that this scarab has the correct chronological placement for this king. It has a tripartite pattern with the royal name flanked by $^c nr^c$ -signs. Besides the scarab itself, ill. 6 shows that the scarabs typical of Dynasty XV, particularly seals with tripartite patterns, $^c nr^c$ -signs, and with deeply cut human or animal representations, all start with tomb group

KENYON GROUP	KINGS	LOTUS BACK						$^c nr^c$	DEEPLY CUT HUMAN & ANIMAL FIG.		HATHOR ASTARTE		CORRESPONDING STRATA IN TEL DABA'
I		•	•	•			○	•					E/3
II	$Nbw-hpr-R^c$		•••••	•••••	•••••	•••••	○ ○ ○ ○ ○	•••••	A A A A H H	•			E/2-1
III	$M_3^c-jb-R^c$ $H^c-htp-R^c$		•	•••	•••••	•••••	○ ○ ○ ○ ○	•••••	A A A A H A H H H		H H		E/1-D/3
IV	$H^c-hpr-R^c$			•	•••••	•••••	○ ○ ○ ○ ○	•••••	A A A A A A A A A H H H H H H H	•	H A	•••••	D/2 ?
V	$H^c-nfr-R^c$ $\xi \xi j$			•			•••••	•••••	A A A A A A A A A A A H H H H H	• •	H		

Ill. 6. Jericho, tomb groups, distribution of Second Intermediate Period scarabs with the distinct appearance of Hyksos scarabs from group II onward. Royal scarabs of early Dynasty XVII appear in group II and of early Dynasty XV in early group III

⁵³ M. Bietak, "Avaris and Piramesse" (supra n. 1) 236.

⁵⁴ K.M. Kenyon, *Jericho* 1 (London 1960) 263-301; and *Archaeology in the Holy Land* (London 1960) 173; Kempinski (supra n. 12) 189.

⁵⁵ Kirkbride (supra n. 51) 618, fig. 291.7.

⁵⁶ For corrupt writings on scarabs of $M_3^c-jb-R^c$ with nb -signs see: W.M. Flinders Petrie, *Scarabs and Cylinders* (London 1917) pl. 21.1, 2, 7, 8; P.E. Newberry, *Ancient Egyptian Scarabs* (London

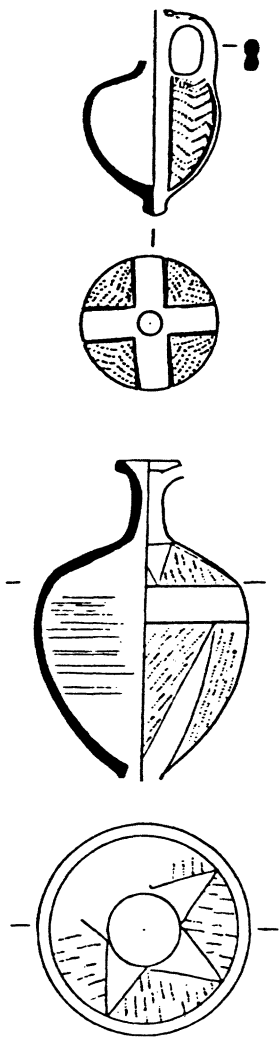
1905) pl. 21.2; F.S. Matouk, *Corpus du Scarabée Égyptien* 1 (Beirut 1971) 180.142, 143; Hornung and Staehelin, *Skarabäen* (supra Table 2, n. 6) 220, no. 148; pl. 14.

⁵⁷ Kirkbride (supra n. 51) 621, fig. 292.13.

⁵⁸ Kirkbride (supra n. 51) 606, fig. 286.13. See related composition in: Stock (supra Table 2, n. 6) fig. 70; Matouk (supra n. 56) 180.164.

⁵⁹ Beckerath 169-71, 221, 280-83.

II, while a scarab with lotus back,⁶⁰ typical for Dynasty XIII⁶¹ and of short chronological range (ca. 1750–1650 B.C.), is still found in tomb group I. Another type with a design like a bovine head flanked by two spiral patterns is also well known from Dynasty XIII and is present in tomb group I, appears in



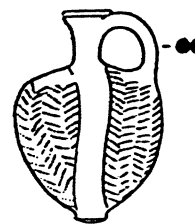
Ill. 7. Jericho, tomb group II, Tell el-Yahudiya juglets of Delta type (cf. Tell el-Dab'a strata E/1-2 and E/2-F). (After Kenyon, *Jericho* 1, fig. 122.14, 15)

⁶⁰ Kirkbride (supra n. 51) 596, fig. 282.7.

⁶¹ See supra, Table 2, n. 2.

⁶² Kirkbride (supra n. 51) figs. 282.2, 283.2, 285.19, 286.1, 292.3.

⁶³ G.A. Reisner, *Kush* 3 (1955) 26–29; see again O'Connor 1969



Ill. 8. Jericho, tomb group III, Tell el-Yahudiya juglet of Delta type (cf. Tell el-Dab'a, strata E/1-D/3). (After Kenyon, *Jericho* 1, fig. 142.5)

greater numbers in group II and has a single occurrence in early group III.⁶²

The scarabs cited with patterns typical for the Hyksos Period from tomb group II onward are unknown from contexts of Dynasty XIII, and there is no way to exclude this evidence as an *argumentum ex silentio*. Our evidence is not based on a single occurrence, but on appearance *en masse*, on the one hand, and total absence of those seal patterns, on the other, among hundreds of seals collected from the well dated Dynasty XIII fortress of Uronarti,⁶³ to give one of the best examples.

It would be an advantage to be able to correlate the tomb groups of Kenyon more closely to the Tell el-Dab'a stratigraphy. Despite the obvious differences in the material culture of the two sites, a constructive comparison is to some extent possible with tomb groups II and III, as there are Tell el-Yahudiya juglets in the tombs typical of the Delta Middle Bronze Age culture which are most likely imported from there to Jericho (ills. 7–8). In tomb group II we have a juglet with five standing and pendant triangles,⁶⁴ typical of strata E/3 and E/2, and a parallel to the juglet from Kerma tumulus X mentioned above, but slightly earlier typologically.⁶⁵ A second juglet from the same Jericho tomb 637 has four zones of vertical ornamentation filled with comb imprints.⁶⁶ This type occurs in strata E/2 and E/1 at Tell el-Dab'a. Therefore, tomb group II is approximately equivalent to the time of Tell el-Dab'a E/2-1, with emphasis on the former. This would leave tomb group I to be equated with stratum E/3 and a part of stratum F which covers a transitional period between MB IIA to B. In tomb

(supra Table 2, n. 5).

⁶⁴ K.M. Kenyon, *Jericho* 1 (London 1960) 322, fig. 122.15.

⁶⁵ Reisner (supra n. 29) 383, fig. 264.23.

⁶⁶ Kenyon (supra n. 64) 322, fig. 122.14.

group III of Kenyon was found another juglet with three vertical zones of ornamentation,⁶⁷ typical of strata E/1 and D/3 at Tell el-Dab'a, so tomb group IV would be equated approximately with stratum D/2, the final MB stratum in Tell el-Dab'a, while tomb group V may partially cover the time between

the expulsion of the Hyksos from Avaris and the beginning of the Late Bronze Age. (To be continued).

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The Cylinder Seal from Tell el-Dab'a

EDITH PORADA

(Pl. 65, figs. 1-3)

The Cylinder Seal

Tell el-Dab'a, 1979, Register no. 2995, Building Site: F I (Pl. 65, fig. 1.)

Hematite, broken, L. 1.85 cm., D. 1.1 cm., Stringhole 0.43 cm. Found on the pavement of the Middle Kingdom, Dynasty XIII palace.

The Seal Design

A Syrian weather god in smiting posture with a long curl projecting backward is seen in a powerful stride atop two mountains which have crisscross markings. In front of the god is a large goat falling head downward through the field. Above the goat appears a wing of a sun disk or of a bird with spread wings. The rest of that figure is eliminated by a break in the cylinder. Below the winged disk or bird is a sailboat in which two persons, indicated only by their heads, are rowing.

A secondary motif is formed by a bull with its head bent down and the forelegs close together in the position of attack. The animal is above a guilloche, below which is a seated lion over whose back is the figure of a bird. The lion extends one paw toward a serpent, which has its head close to the ground with

the body arching in an undulating movement above the platform.

Comments

The large stringhole suggests that the cylinder was recut. The style of engraving is, however, uniform, indicating that the engraving was done at only one time. Its approximate date may be determined on the basis of the ax held by the weather god—the fenestrated type of shaft-hole ax.¹ The longitudinal extension of the axhead and the horizontal lines indicating the openings suggest that a so-called duckbill ax is depicted.² The duckbill is a later type than the crescentic axhead most recently discussed and documented by P. Matthiae in connection with the two fenestrated axheads representing these two types which were found in the tomb of the "Lord of Goats" at Ebla.³ The best evidence for the date of the duckbill ax is the presence of a miniature axhead of that type at Mari, which was destroyed by Hammurabi about 1760 B.C.⁴

It must be mentioned, however, that the ax portrayed on the Dab'a cylinder does not have the precise appearance of an Asiatic duckbill type. Perhaps the engraver was not capable of giving the characteristic

⁶⁷ Kenyon (supra n. 64) 362, fig. 142.5.

¹ Fenestrated axes were discussed by P. Matthiae, "Sulle asce fenestrate del 'signore dei capridi'," *Studi Eblaiti* 3.3-4 (1980) 53-62, where he gives complete bibliographic references for axes in the early article by W. Greenwell, "On Some Rare Forms of Bronze Weapons and Implements," *Archaeologia* 58 (1902) 13-14 and to the remarks by P. Calmeyer on the fenestrated axes of Iran in *Datierbare Bronzen aus Luristan und Kirmanshah* (Berlin

1969) 44-46. To these bibliographical references can now be added J.N. Tubb, "A Crescentic Axehead from Amarna (Syria) and an Examination of Similar Axeheads from the Near East," *Iraq* 44 (1982) 1-12.

² This term was coined by C. Hillen, "A Note on Two Shaft-Hole Axes," *BibO* 10 (1953) 211-15.

³ Matthiae (supra n. 1).

⁴ A. Parrot, *Mission archéologique de Mari. Le palais: documents et monuments* (Paris 1959) pl. 33.999.