CYPRO-MINOAN IN PHILISTIA?

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ABSTRACT

In this paper, claims that Cypro-Minoan inscriptions have been found in Philistia are discussed and evaluated. First, an overview of Cypro-Minoan is presented, including discussions of Masson's division of the script into four varieties, the evidence for her divisions, the reasons for the scarceness of Cypro-Minoan clay documents, and the purposes for which the script was apparently used. The special problems posed by Cypro-Minoan paleography are then reviewed, and it is shown that the absence of a definitive Cypro-Minoan corpus, the lack of a comprehensive paleographic study of the script (or even a universally-accepted sign list), and the smallness and simplicity of the repertoire of known pre-alphabetic signs from early Philistia, all combine to make any demonstration of direct relatedness between Philistine pre-alphabetic writing and Cypro-Minoan quite problematic at this time.

RESUMEN

Este trabajo evalúa las propuestas defendiendo que algunas inscripciones encontradas en Filistea son chipriominoicas. La primera parte contiene un resumen sobre la escritura chipriominoica, incluyendo un análisis de la clasificación de la escritura por Masson en cuatro variantes, la evidencia de sus divisiones, las razones de la escasez de documentos chipriominoicos de arcilla y los usos aparentes de la escritura. En la segunda sección se revisan los problemas que la paleografía chipriominoica plantea y se demuestra que la ausencia de un corpus definitivo chipriominoico, la falta de un estudio paleográfico exhaustivo de la escritura (o incluso una lista de signos universalmente aceptada) y el exiguo repertorio de signos pre-

alfabéticos conocidos de Filistea antigua, no permiten demostrar, en estos momentos, una relación directa entre el chiprominoico y la escritura prealfabética de los filisteos.

INTRODUCTION

The recent identification by Maeir et al. (2008) of an Old Canaanite alphabetic inscription from an IA I/II Philistine context at Tell eṣ-Ṣâfi / Gath adds to a growing body of evidence that the Philistines began adopting the alphabetic writing-system of their Canaanite neighbors sometime around the turn of the first millennium B.C.E. The nature of Philistine writing *before* this point remains less clear—though there are indications that the Philistines may initially have used a writing-system of their own, one brought with them from their place of origin, or adopted (or adapted) soon after arrival in the Levant at the end of the Bronze Age. Specifically, several objects associated with early Philistia are inscribed with scripts that have been likened to the various linear scripts of the Bronze Age Aegean and Cyprus, especially the script known as Cypro-Minoan. A (pre-Philistine) potmark on a 13th-century B.C.E. amphora handle from Stratum XII at Aphek, for example, is described as a "possible Cypro-Minoan sign" (Yasur-Landau and Goren 2004). A cylinder- and stamp-seal found at Ashdod are inscribed with symbols that have been compared to Cypro-Minoan characters (Dothan 1972: 6ff.; Dothan and Dothan 1992: 166-7). Ashkelon has yielded an ostracon and 18 jar handles that are described as being "inscribed in the Cypro-Minoan script" (Cross and Stager 2006, 129).

For specialists in the archaeology of Israel, one of the barriers to a critical assessment of such claims is the relative lack of readily accessible, up-to-date reference material on the Cypro-Minoan script itself. This paper helps to remove that barrier by providing the reader with (1) a thoroughly referenced overview of Cypro-Minoan and its corpus of inscriptions, and (2) an explanation of the special problems posed by its paleography, problems which have a direct bearing on the identification of pre-alphabetic Philistine writing as Cypro-Minoan.

OVERVIEW OF CYPRO-MINOAN

Origins of the script

Cypro-Minoan ("CM") is an undeciphered Bronze-Age linear script[1] evidently designed for the indigenous language(s) of Cyprus. The CM script is clearly based on Linear A, the much older (and also undeciphered) writing system of the Minoans on Crete. One of the earliest inscriptions in CM is on a well-known clay tablet from Enkomi dated to ca. 1500 B.C.E. (and discussed later in this paper); the shape of the tablet resembles the shape of Minoan tablets rather than Near Eastern ones (Niemeier 1998: 38), and the script itself resembles Linear A so closely that relatedness is clearly indicated, not just influence (E. Masson 1987b: 368; Palaima 1989b: 40-41; Kanta 1998: 37). In fact, this early tablet was found together with Late Minoan I pottery at Enkomi, highlighting what must have been close cultural interconnections between the two islands (Kanta 1998: 37; Niemeier 1998: 38).

Cyprus was also part of a flourishing Near Eastern, Levantine and Egyptian trade network from at least the 16th through the 13th centuries B.C.E., and so there is naturally a strong Near Eastern influence on the island as well (Niemeier 1998: 38). It is unknown why the inhabitants of Cyprus chose Linear A as their model, rather than a Near Eastern script such as cuneiform, though the relative simplicity of the 65-sign Linear A syllabary may have recommended it over the more complex cuneiform system (Palaima 1989a: 161-2).

With somewhere around 100 signs, CM has too many signs for an alphabet, but too few for a logographic system, in which signs represent whole words. CM must therefore be a *syllabary*, like its parent Linear A, with a sign for each possible syllable in the language it expresses.

Masson's four varieties of Cypro-Minoan

CM inscriptions are typically classified according to the *variety* of CM that they contain. In the early 1970s, Masson published a classification of CM signs, in which she distinguished between four different varieties of CM: "archaic CM", "CM1", "CM2", and "CM3" (E. Masson 1974: 12-15,

[1] *Linear script*: a script whose symbols are written sequentially along a single baseline (as opposed to a hieroglyphic script, in which symbols can also be stacked vertically within the line).

figs. 1-4; see Figs. 3, 16, and 17 in this paper). The evidence for each of Masson's four subtypes of CM is outlined in the sections that follow.[2]

Objects containing "archaic CM" inscriptions

Masson distinguished an "archaic CM" on the very oldest inscribed objects, dating from the last half of the 16th century through the 15th century B.C.E. (E. Masson 1974: 11). The earliest secure CM document is a clay weight from Enkomi (ca. 1550 B.C.E.; Schaeffer et al. 1968: 266, fig. 3; Baurain 1980: 566-70; *ibid*. 1984, 155, fig. 22) containing six signs plus a word-divider (which appears as a single vertical stroke):

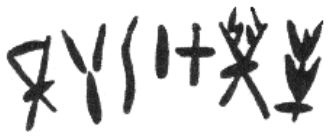

Fig. 1. Inscription on clay weight from Enkomi (ca. 1550 B.C.E.; after E. Masson 1979a: 135, fig. 1b).

The other major document of archaic CM is the Linear-A-like tablet mentioned earlier, Enkomi 1885 (ca. 1500 B.C.E.; O. Masson 1957b: 23, no. 264, pl. 6:25; E. Masson 1969: 64-77), containing 23 signs:

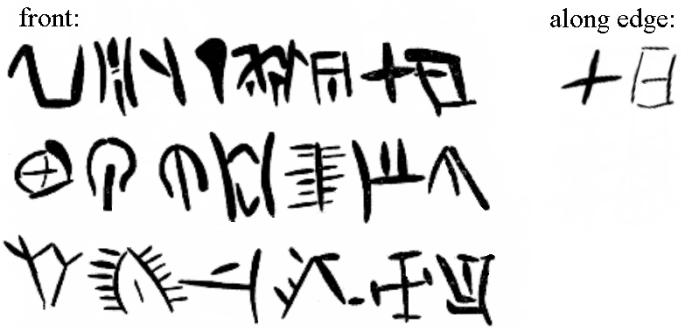

Fig. 2. Inscription on tablet Enkomi 1885 (ca. 1500 B.C.E.; after Godart and Sacconi 1979: 130, figs. 1-2).

[2] In the following sections, dates given for objects are the excavators' dates. Due to the nature of the excavations that produced the objects, many of these dates are problematic; assessment of these problems is beyond the scope of this paper.

Masson does not state a rationale for distinguishing this variety of CM other than the supposed age of the objects on which it is found, but it is worth noting that the signs on these objects do not tend to display the familiar cuneiform-style ductus[3] characteristic of later CM documents. Instead, the ductus resembles that of Linear A, in that the signs are composed largely of lines rather than wedges.

The remaining evidence for archaic CM is limited to just two objects: four signs on a cylinder seal from Enkomi, dated to Late Cypriot I (ca. 1550-1400; O. Masson 1957a: 7-8, no. 1, fig. 1; *ibid*. 1957b: 21, no. 241); and three signs on a jug from Katydhata (15th c.; O. Masson 1957b: 13, no. 46, pl. 2:3; E. Masson 1979a: 134-5, fig. 1c; Palaima 1989a: 181, fig. 14b). The entire body of attested archaic CM inscriptions thus consists of only 36 signs on four objects, from which Masson has extracted a list of 30 different signs:

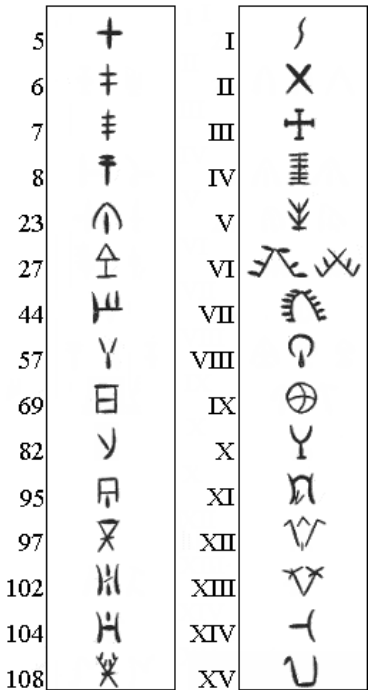

Fig. 3. Masson's "Archaic CM" signs (after E. Masson 1974: 12, fig. 1).

The 15 signs in the left column recur in other versions of CM, while the 15 signs in the right column, many of which resemble Linear A signs, are not attested in CM inscriptions after about 1400 B.C.E. (E. Masson 1974: 12).

[3] *Ductus*: in paleography, the appearance and order of the various strokes that make up a sign.

Objects containing CM1 inscriptions

Masson characterized CM1 signs as still retaining a very linear ductus, but one that is more "supple", and that lends a "certain elegance" to the aspect[4] of the writing (E. Masson 1974: 15). She assigned this variety to the majority of CM inscriptions, the largest of which is found on the clay cylinder Enkomi 19.10 (14th c.; 179 signs; Schaeffer et al. 1968: 267-8, fig. 5):

Fig. 4. Inscription on clay cylinder Enkomi 19.10 (14th. c. B.C.E.; after Palaima 1989a, 182, fig. 15).

In this document, the cuneiform ductus characteristic of later CM inscriptions is now beginning to become apparent, giving the writing an aspect reminiscent of Japanese *kana*.

Kalavassos-Ayios Dhimitrios has yielded five smaller, mostly fragmentary clay cylinders, dated to ca. 1275-1225 (South 1983: 98-100; *ibid*. 1984: 21, 23-5; E. Masson 1986: 181-3, fig. 2; Smith and Hirschfeld 1999: 130; Smith 2002: 20-25, fig. 5). Together, these five cylinders contain 167 signs. In addition, two fragmentary tablets containing CM1 signs have

[4] *Aspect*: in paleography, the overall "look" of a piece of writing, without regard to its individual letters or signs.

been found at Ras Shamra; they have been dated to the 13th century B.C.E., and so constitute important evidence for the presence of Late Bronze Age Cypriots in Ugarit. The tablets are RS 19.01, with eight signs, and RS 19.02, with 24 signs (O. Masson 1957b: 27, nos. 358, 359; E. Masson 1974: 20-23). Following is a sample from the inscription on RS 19.01:

Fig. 5. Part of inscription on tablet RS 19.01 from Ras Shamra (13th c. B.C.E.; after E. Masson 1974: 23, fig. 9).

In all, the clay cylinders and tablets contain 378 signs.

CM1 signs occur on a wide variety of other objects as well. A number of inscribed clay balls (dated ca. 1250-1075 B.C.E.) found at Enkomi, Kition and Hala Sultan Tekke provide almost as many signs as do the clay cylinders and tablets. So far, 83 of these clay balls have been published (Dikaios 1971: 881-91, pls. 318-19; E. Masson 1971: 28, 38 nn. 119-121; Karageorghis 1976a: 238, fig. 8; Öbrink 1979: 3, 43, 46, 89, fig. 286); on average, they contain three to five signs each, with the longest inscription containing eight signs. Together, the clay balls contain 359 signs (Palaima 1989a: 124).

Inscribed and painted pottery supplies a much smaller body of inscriptions, once the objects containing single signs are omitted.[5] The longest inscription (15 signs, not counting word-dividers) is found on a fragment of a clay offering-roaster from Enkomi, dated to the end of the Mycenaean period (ca. 1200 B.C.E.; E. Masson 1979c: 210-13, pl. 20). Figure 6 depicts a portion of the inscription:

Fig. 6. Part of inscription on offering-roaster from Enkomi (ca. 1150; after E. Masson 1979c: pl. 20:2).

[5] For *undeciphered* scripts, the convention is to limit the term "inscription" to sequences of two or more signs, and to refer to single signs as "potmarks" if on clay or ceramics, and "masons' marks" if on stone.

In all, the CM1 inscriptions on pottery contain a total of 100 signs:

Table 1. CM1 inscriptions on ceramic supports.[6]

	Site	Object	# of Signs
1.	Arpera	pithos fragment	6
2.		2 pot-handles + 1 handle fragment	6
3.	Kourion-Bamboula	vase	2
4.	Dhali	pot-handle	4
5.	Enkomi	fragment of offering-roaster	15
6.		crater	4
7.		vase	2
8.		3 pots	6
9.		2 pot-handles	5
10.		jug handle	6
11.		2 handle fragments	4
12.		pithos fragment	5
13.		pithos rim	9
14.		terracotta plaque (12^{th}-11^{th} c.)	2
15.		fragment of deep buff-ware bowl (ca. 1230-1190)	4
16.	Famagousta	figurine of a zebu-bull	4
17.	Katydhata (Tomb 11)	plain white-ware jug (15th c.)	4
18.	Pyla-Kokkinokremos	amphora base	2
19.	Myrtou-Pighades (sanctuary)	jug (late 13^{th}-early 12^{th} c.)	4
20.	Ras Shamra	hydria fragment	2
21.	(unknown)	2 pot-handles	4

Metal items supply an even smaller body of CM1 inscriptions containing a total of 83 signs:

[6] References for each row of the table: [1] O. Masson 1957b: 17, no. 174, pl. 3:7; Palaima 1989a: 181, fig. 14c; [2] O. Masson 1957b: 17, nos. 173, 176, 177; [3] *ibid.*: 15, no. 136; [4] *ibid.*: 16, no. 167, pl. 2:6; [5] E. Masson 1979c: pl. 20:2; [6] O. Masson 1957b: 20, no. 211, pl. 4:13; [7] *ibid.*: 22, no. 243; [8] *ibid.*: 20, nos. 203, 204, 205; [9] *ibid.*: 21, nos. 216, 236, pl. 4:16-17; [10] *ibid.*: 22, no. 250; [11] *ibid.*: 22, nos. 244, 246; [12] *ibid.*: 20, no. 214, pl. 4:14; [13] E. Masson 1979b: 560-61, fig. 2; [14] Caubet and Courtois 1986: 74-5, fig. 6, pl. 19:3; [15] Dikaios 1967: 80-84; Palaima 1989a: 182, fig. 16; [16] E. Masson 1973, 96; [17] O. Masson 1957b: 13, no. 45, pl. 2:2; Heubeck 1979: 56; [18] O. Masson 1957b: 18, no. 187; [19] *ibid.*: 15, no. 152; E. Masson 1972: 129-32, fig. 1; [20] O. Masson 1957b: 26, no. 342; [21] *ibid.*: 23, nos. 298, 299.

Table 2. CM1 inscriptions on metal supports.[7]

	Site	Object	# of Signs
1.	Enkomi	3 small votive copper ingots (12th c.)	11
2.		2 bronze fragments	6
3.		ploughshare blade and flat axe (12th c.)	6
4.		bronze jeweler's anvil	6
5.		silver bowl ('Enkomi 16.63', 13th c.)	4
6.	Evreti (east of Kouklia-Palaepaphos)	gold ring	2
7.	Hala Sultan Tekke-Vizaja	gold ring	4
8.		lead sling-bullet (12th c.)	2
9.	Kalavassos-Ayios Dhimitrios	2 gold rings (14th c.)	8
10.	Kition (earliest floor of Temple 2)	bronze votive liver	3
11.	Myrtou-Pighades (sanctuary)	2 bronze tripod support rings (12th c.)	6
12.	(unknown)	small bronze plaque	3
13.	(unknown; likely Enkomi or Kouklia)	3 bronze bowls	22

The number of CM1 inscriptions on stone is smaller still, yielding an additional 44 signs:[8]

[7] References for each row of the table: [1] O. Masson 1957b: 23, no. 297, pl. 7:26; *ibid.* 1971: 451-54; [2] *ibid.* 1957b: 23, nos. 293, 294; [3] E. Masson 1973: 93-4; [4] *ibid.* 1979b: 559-60; *ibid.* 1986: 190-1, fig. 7.2; *ibid.* 1987a: 201, fig. 8; [5] Palaima 1989a: 185, fig. 21; [6] O. Masson 1957a: 22-3, no 16; *ibid.* 1957b: 13, no. 38; [7] *ibid.* 1957a: 20-22, no. 15, fig. 15; *ibid.* 1957b: 18, no. 186; Palaima 1989a: 177, fig. 8; [8] Åström and Nicolaou 1980: 30, 32, no. 5; [9] Karageorghis 1976b: 82, color pl. V; E. Masson 1987a: 194-5, fig. 4; [10] Karageorghis 1976b: 82, pl. 10; E. Masson 1985: pl. B:8; [11] O. Masson 1957b: 15, nos. 153, 154; E. Masson 1973: 94; [12] O. Masson 1957b: 25, no. 315, pl. 7:30; [13] *ibid.* 1957b: 24, no. 307; *ibid.* 1968: 66-72, figs. 1, 3-4, pls. I-II; E. Masson 1973: 93; Palaima 1989a: 153 n.48.

[8] Palaima (1989a: 152) includes two additional cylinder seals in this list, one from Sinda and one from Toumba tou Skourou; but each of these seals contains only a single sign (Sinda: O. Masson 1957a: 14-15, no. 9, fig. 9; Toumba tou Skourou: Vermeule and Wolsky 1976: 72-5, no. 13, fig. 3). By consensus, a single sign is not considered an inscription; see Note 5.

Table 3. CM1 inscriptions on stone supports.[9]

	Site	Object	# of Signs
1.	Kition	stone block (graffito)	3
2.	Dhali	steatite spindle-whorl	3
3.	(unknown)	hematite seal (prob. 12th c.)	2
4.	Enkomi	3 cylinder seals (14th-13th c.)	8
5.	Kourion-Bamboula	cylinder seal (ca. 1400-1375)	5
6.	Hala Sultan Tekke-Vizaja	cylinder seal (ca. 1400-1200)	5
7.	Pyla-Verghi	cylinder seal (13th c.)	4
8.	Nicosia-Ayia Paraskevi	cylinder seal (13th c.)	4
9.	Ayia Irini	cylinder seal	4
10.	(unknown)	2 cylinder seals (prob. early 14th c.)	6

In addition, Dhali and Enkomi have each yielded one inscribed faience cylinder seal (O. Masson 1957a: 17-19, nos. 12, 13, figs. 12, 13; *ibid*. 1957b: 16, 22, nos. 169, 261), while three inscribed ivory objects were recovered from Kition Temple 4 (Room 38C, between floors III and IIIA, ca. 1190-1150 B.C.E.): a plaque of the Egyptian god Bes, an ivory bar, and an opium pipe (Karageorghis 1976a: 232-5, figs. 3-5; *ibid*. 1985: 116-17, nos. 4250, 4252, 4267; E. Masson 1985: pls. A-B; *ibid*. 1986: 180-82, 197, 199, fig. 11). In all, the inscriptions on ivory and faience objects contain 35 signs.

Thus CM1 occurs "sur des objects très varies" (E. Masson 1974: 12), yet this wide assortment of objects yields slightly less than 260 signs. With the 378 signs on clay cylinders and tablets, and the 359 signs on clay balls, the body of attested CM1 inscriptions amounts to just under 1000 signs on around 160 objects (83 of which are clay balls). From these inscriptions, Masson has extracted a list of 85 individual CM1 signs, as shown in the "CM1" column of Figs. 16-17 at the end of this paper.

[9] References for each row of the table: [1] E. Masson 1985: pl. A:4; Hitchcock 2003: 260, pl. 51a; [2] O. Masson 1957b: 16, no. 168; [3] *ibid.* 1957a: 23, no. 17; *ibid.* 1957b: 25, no. 316; [4] *ibid.* 1957a: 8-9,13-14, nos. 2, 7, 8, figs. 2, 7, 8; *ibid.* 1957b: 19-21, nos. 196, 210, 215; [5] *ibid.* 1957a: 10-11, no. 4, fig. 4; *ibid.* 1957b: 14, no. 54; [6] E. Masson 1976: 130-1; Porada 1976: 99-100, fig. 78; [7] O. Masson 1957a: 12-13, no. 6, fig. 6; *ibid.* 1957b: 18, no. 189; [8] *ibid.* 1957a: 15-17, no. 10, fig. 10; *ibid.* 1957b: 16, no. 164; [9] Pecorella 1977: 22, no. 3.17, fig. 32; [10] O. Masson 1957a: 9-12, nos. 3, 5, figs. 3, 5; *ibid.* 1957b: 24-5, nos. 313, 314a.

Objects containing CM2 inscriptions

In contrast to the "supple" ductus and "elegant" aspect of CM1 signs, Masson characterizes CM2 signs as "square and squat" (E. Masson 1974: 15). The evidence for this variety of CM is limited to just three clay tablets, all of which probably date to ca. 1220-1190 B.C.E. (Palaima 1989a: 155). The first tablet, Enkomi 53.5 (O. Masson 1957b: 22, no. 257; E. Masson 1986: 187, fig. 6), contains many repeated word-units, especially on side A, which (unlike side B) is divided into registers. Figure 7 shows a portion of the inscription on each side:

Fig. 7. Part of inscription on tablet Enkomi 53.5 (1220-1190 B.C.E.; after Palaima 1989a: 179, 184, figs. 10, 18).

From its appearance and layout, the tablet might contain a hymn, a medical text, or a genealogy (Palaima 1989a: 160).

The second tablet, Enkomi 1687 (O. Masson 1957b: 23, no. 263, pl. 6:24; Dikaios 1953: 233-7, figs. 1-2, pls. 4-5; Palaima 1989a: 183, fig. 17), contains no registers at all, and so might represent a letter or some other official text. Figure 8 depicts part of the inscription on side A:

Fig. 8. Part of inscription on tablet Enkomi 1687, side A (1220-1190 B.C.E.; after Dikaios 1971: pl. 318:3).

The third tablet is Enkomi 1193+20.01 (O. Masson 1957b: 23, no. 262, pl. 6:23; Dikaios 1971: 885-7). Figure 9 shows a portion of the inscription on the larger fragment:

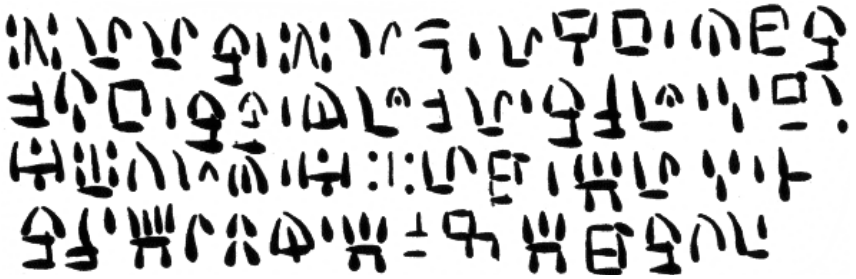

Fig. 9. Part of inscription on tablet Enkomi 1193 (1220-1190 B.C.E.; after Dikaios 1971: pl. 320:1).

Like Enkomi 1687, Enkomi 1193+20.01 lacks registers, and thus may be part of a letter or similar text.

Together, all three tablets contain about 1310 signs. Thus the body of attested CM2 inscriptions is actually about 300 signs *larger* than the body of CM1 inscriptions; and yet these 1310 CM2 signs come from just three objects.

From the CM2 inscriptions, Masson has extracted a list of 59 individual CM2 signs, as shown in the "CM2" column of Figs. 16-17.

Objects containing CM3 inscriptions

Masson distinguishes CM3 as a separate variety of CM used only at Ugarit, noting that this variety appears to include some signs not present in other varieties. According to Masson, CM3 inscriptions have an aspect that "differs" from those of the other varieties—she does not say how—while employing a ductus not entirely dissimilar to the more linear (and less cuneiform) ductus of CM1 (E. Masson 1974: 16).

As is the case with CM2, objects containing CM3 inscriptions are very few in number. The most important documents are two tablets from Ras Shamra: RS 17.06 (60 signs) and RS 20.25 (159 signs). The first is divided into registers, while the second is not. Figure 10 shows a portion of each tablet:

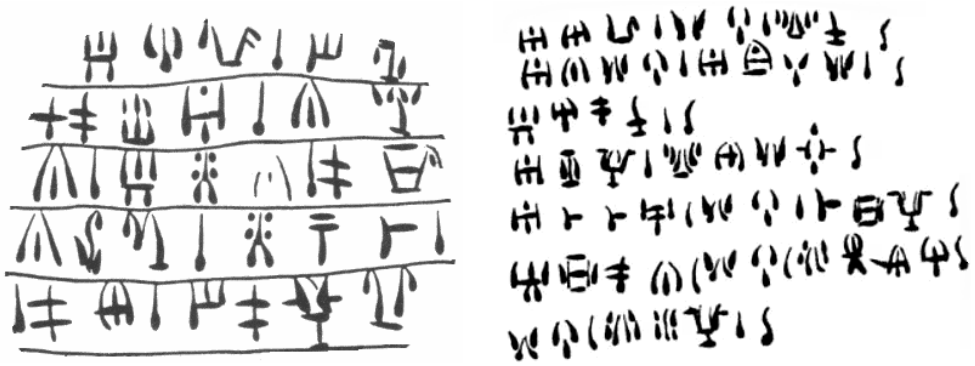

Fig. 10. Part of inscription on tablets RS 17.06, side B (left) and RS 20.25, side A (right) from Ras Shamra (1275-1200 B.C.E.; after E. Masson 1974: 26, 31, 33, figs. 12, 13, 16, 17).

RS 17.06 was found in a private library, together with a large number of texts in both Akkadian syllabic and Ugaritic alphabetic cuneiform; the library has been dated to ca. 1275-1200 B.C.E. With its convex surface and small (40mm x 43mm) square shape, RS 17.06 resembles the numerous small Akkadian tablets found at Ras Shamra (Schaeffer 1954: 39-40; *ibid*. 1956: 228-9; O. Masson 1956: 239-40, 245-6; *ibid*. 1957b: 26-7, no. 357; E. Masson 1974: 24-9, 59 n.63, figs. 12-13; *ibid*. 1986: 185-7, fig. 5). RS 20.25, on the other hand, has a shape and size (68mm x 58mm x 17mm) reminiscent of the oblong Ugaritic tablets found at the site; and from the layout of its text, it may contain a genealogy consisting of a list of names with patronymics (O. Masson 1957b: 27, no. 360; E. Masson 1974: 29-45, figs. 16, 17).

The remaining evidence for CM3 is restricted to three objects: a pithos rim (Courtois 1978: 280-82, fig. 29.1, 29.4; E. Masson 1986: 180-2, fig. 1) and a silver bowl (Schaeffer 1932: 22-23, pl. 16:1, fig. 15; *ibid*. 1956: 228 n.2; O. Masson 1957b: 25, no. 320; E. Masson 1974: 19-20, fig. 5; Palaima 1989a: 185, fig. 20a) from Ras Shamra, and a cylinder seal from Latakia, 10 km south of Ugarit (ca. 1400); these objects contain a total of nine signs (Buchanan and Masson 1968: 410-15; E. Masson 1974: 23-4; Palaima 1989a: 185, fig. 20). The body of attested CM3 inscriptions, then, consists of 228 signs on just five objects; and all the objects are from the area around Ugarit. From these inscriptions, Masson has extracted a list of 44 individual CM3 signs, as shown in the "CM3" column of Figs. 16-17.

The size of the Cypro-Minoan corpus

The entire body of attested CM inscriptions of all four varieties thus amounts to around 2570 signs, a much smaller number than for Linear A (7362 signs) or Linear B (57398 signs, and ca. 30000 at the time of its decipherment; Olivier 1989: 55, fig. 1; Palaima 1989a: 124). As CM was in use for over four centuries, we would expect more than just 2570 signs to have survived; yet the chief reason for the small size of the CM corpus becomes clear if we look instead at the reasons why the number of preserved Linear A and B signs is so much larger.

Most Linear A and B signs are on clay administrative documents, such as tablets and sealings. Minoan and Mycenaean sites were usually destroyed by intense fires that transformed the clay into a durable ceramic, thus preserving the writing. Importantly, few of these sites were subsequently rebuilt after their final destruction by fire. The pattern on Cyprus is different, however; the violent destructions that occurred throughout the eastern Mediterranean at the end of the Bronze Age do not seem to have been as prevalent or as devastating there. Several of the smaller settlements, such as Maroni, Alassa, Kalavassos-Ayios Dhimitrios, and Pyla-Kokkinokremos were simply abandoned early in the early 12th c., as their people moved to larger, more fortified cities. Of the largest population centers, Enkomi and Hala Sultan Tekke appear to have suffered at least some destruction during this period, but both cities were quickly rebuilt, only to be abandoned about a generation later as their harbors silted up to the point of being unnavigable. Similarly, Maa-Palaeokastro was destroyed but rebuilt, then abandoned a generation later. Kition and Kouklia-Palaipaphos also survived the destructions, but were never

abandoned; instead, they expanded as they absorbed the populations of the other centers, and were inhabited on into the Iron Age (Drews 1995: 12; Gates 2003: 156; Iacovou 2006: 325-6).

Thus none of these centers ended their lives in a final conflagration; all were either rebuilt, or abandoned to the elements. At sites that were rebuilt, any clay documents transformed into ceramic by the destructive fire would have been at risk of being disturbed, damaged, or simply cleared away as rubble during the process of rebuilding. At sites that were abandoned, clay documents would simply have remained clay, soluble in water, and would not have lasted long once exposed to moisture. As an illustration of the devastating effect that the dissolution of such documents must have had on the size of the CM corpus, we can consider the Minoan villa at Haghia Triada, repository of a large archive of Linear A administrative documents. If this single villa had not been destroyed by fire, thus baking and preserving its clay archive—or if the villa had been rebuilt, and the old archive cleared away—then the number of surviving Linear A signs would now be even smaller than that for CM.

The uses of Cypro-Minoan

It would thus be unwise to assume that because so few CM clay tablets survive, CM must have had few administrative uses—quite the contrary, as the surviving tablets must represent only a fraction of what once existed. Furthermore, many important survivals look administrative, such as the clay cylinders from Enkomi and Kalavassos-Ayios Dhimitrios; the latter set of cylinders, long interpreted as foundation deposits, have now been identified as economic records (Smith and Hirschfeld 1999: 130). As both Linear A and Linear B played important roles in administration, it would be least surprising if CM were used in this way as well, and so this possibility should not be discounted unless evidence is found that clearly indicates otherwise.

Yet CM is certainly present on some non-administrative documents too. Its use on objects such as the votive copper ingots from Enkomi, the votive liver from Kition, and the bull figurine from Famagousta (Masson 1973: 96) shows that the script had ritual uses, like its parent Linear A—but unlike Linear B, which seems to have been used solely for administration.

SPECIAL PROBLEMS POSED BY CYPRO-MINOAN PALEOGRAPHY

The lack of a definitive Cypro-Minoan corpus

Though the rather small number of surviving CM signs would seem a serious obstacle to decipherment, the existence of some very long inscriptions (such as Enkomi 1687 in Fig. 8) should make it possible to glean at least some information about the structure of the language that CM records. Yet the study of CM remains in its infancy, compared to (say) the study of Linear A, which is also undeciphered. Catalogues of Linear A sign-groups have been available for nearly forty years (see, for example, Raison and Pope 1971); but one searches in vain for catalogues of CM sign-groups, or indeed even for a sign-list upon which everyone agrees.

The reason is that CM, unlike the other Aegean scripts, still lacks an official, definitive corpus of inscriptions, such as Godart and Olivier's (1985) five-volume *Recueil des inscriptions en Linéaire A*. Instead, scholars of CM are forced to rely on hundreds of individual sources published over the last century. Many of these publications are obscure, difficult to find, and poorly printed; a great many contain inadequate descriptions, inaccurate transcriptions, imprecise drawings, and grainy photographs (Smith and Hirschfeld 1999: 129). As a result, much of the work that has been based on these sources is itself flawed; and the literature is now so confusing that after a century of study, scholars still cannot agree on a definitive sign-list. The number of CM inscriptions may be relatively small; but even if it were several times larger than it is, the script could never be deciphered while there is still disagreement about such basic issues as the number of signs in the syllabary.

The subjectivity of Cypro-Minoan paleography

The implication is that Masson's longstanding division of CM signs into four varieties was very much premature; and in fact, in an important and much-cited article, Palaima states that "the current classification into four subdivisions of writing... is *invalid*, being based on false paleographic assumptions" (Palaima 1989a: 121). His reference to paleography is an indirect reference to the lack of a definitive corpus, an important part of which is a paleographic study of each sign in the script. Following is an example based on Godart and Olivier's paleographic survey of Linear A:

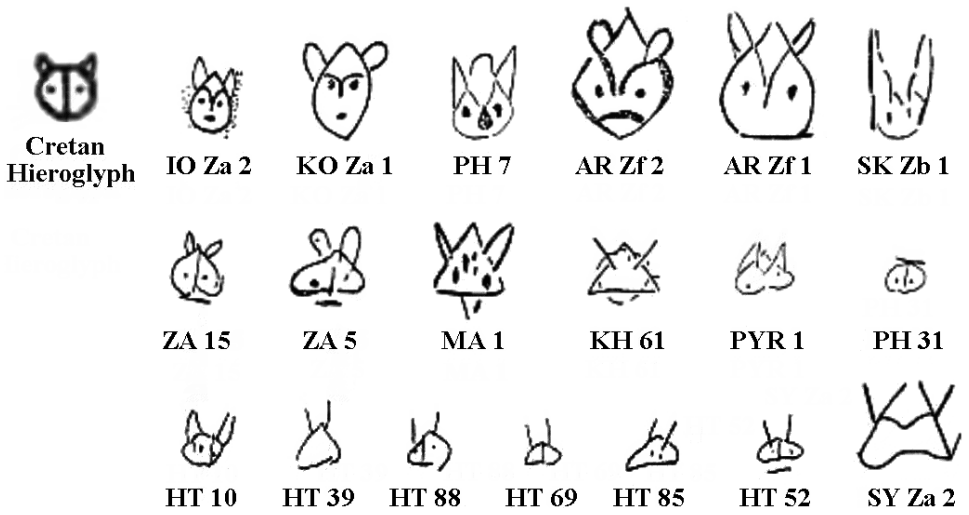

Fig. 11. Paleography of Linear A sign AB80 (after Godart and Olivier 1985: pl. 41).

A paleographic study such as this documents the regional and temporal variants of each sign, thus establishing the full acceptable range of variation for each sign. This enables scholars to interpret all the variants of a particular sign as the *same* sign, which is an essential prerequisite to decipherment.

Thus a truly definitive sign-list can be produced only through a paleographic study of the entire corpus; whereas with CM, Masson's four sign-lists were rather subjectively created (Palaima 1989a: 146) in the absence of such a study—and also in the absence of a definitive corpus, which is a prerequisite to such a study. With Masson's sign-lists, then, the cart is before *two* horses.

Palaima also provides evidence (and there is much of it) that something is seriously amiss with Masson's subdivisions. For example: whenever CM signs are incised into metal or into fired pottery, they are quite naturally incised with a linear ductus, simply because it is more difficult to incise wedge-shapes into hard surfaces. This remains true throughout the entire life of CM (Palaima 1989a: 154):

Fig. 12. Inscription on Enkomi buff-ware bowl (ca. 1230-1190; after Palaima 1989a: 182, fig. 16), and excerpt from Linear A tablet HT 117a (ca. 1490; after Duhoux 1989: 112, fig. 3).

The CM inscription on the buff-ware bowl from Enkomi is quite late; yet it is incised in a linear ductus similar to that of the much earlier Linear A tablet. This calls into question the validity of Masson's "archaic CM" script, whose distinguishing feature (aside from age) is its linear ductus—and also the validity of her division between CM1 and CM2, which is based almost entirely on how linear the ductus is.

Conversely, there are numerous examples of Linear A drawn with a cuneiform ductus, as on the gold ring from Knossos known as KN Zf 13. The ring is cast; but when the mold was incised, each sign was created by a number of jabs with a wedge-shaped stylus, no doubt because this is a much easier way of incising tiny letters into a soft medium. The resulting ductus is very similar to that found on the Enkomi clay balls:

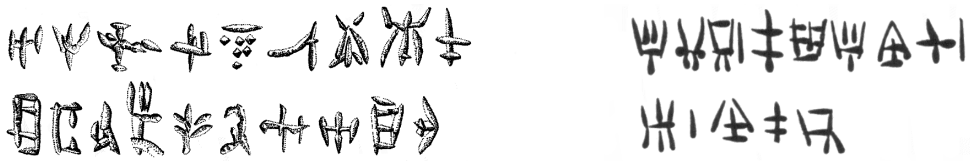

Fig. 13. Inscriptions on gold ring from Knossos (KN Zf 13, ca. 1750-1580; after Godart and Olivier 1982: 153) and on clay balls 1 and 2 from Enkomi (after E. Masson 1971: 11-12, figs. 1 and 2)

Thus Masson's separation of CM into varieties based on type of ductus is actually an arbitrary measure: as Figs. 12 and 13 show, ductus is heavily conditioned both by the *medium* and by the *scale* of the writing, and scribes tended to choose the ductus that suited both, regardless of which period (or region) they lived in. Palaima specifically makes this case against Masson's CM2 classification: CM2 is attested on just three tablets whose signs are uniformly tiny, such that most of the differences between CM1 and CM2 signs could have resulted solely from the smallness of the writing on the CM2 tablets (Palaima 1989a: 155-6). Masson's own sign-lists (in Figs. 16–17) enlarge the CM2 signs to the size of the CM1 signs, which makes

the problem more apparent, in that the two varieties of signs are revealed to resemble each other to a large degree.

In addition, many CM2 signs that Masson shows as having no CM1 analog actually do resemble attested CM1 signs. For example, consider Masson's signs 50 through 55:

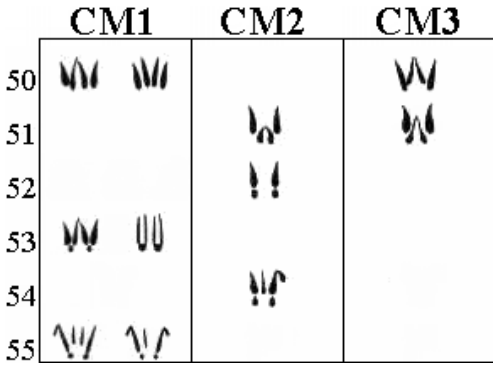

Fig. 14. Masson's CM signs 50-55 (after E. Masson 1974: 14).

CM2 signs 51, 52 and 54 are shown with no analog in CM1; yet they closely resemble CM1 signs 50, 53, and 55, which are shown with two variants each. Meanwhile, all 11 of these signs are descendants of the Linear A "cat face" sign whose widely-varying paleography was shown in Fig. 11. This raises an important question: if the parent sign in Linear A can vary so widely while remaining the same sign, then on what basis can any of these CM descendants be called "separate signs"? And by the same token: if signs in the parent script (Linear A) can display such a wide range of variation, then on what basis can CM1 and CM2 be called "separate scripts" at all?

Meanwhile, the rationale for CM3 seems no less arbitrary, and in fact appears to be mainly geographic (Palaima 1989a: 158), with only objects from Ugarit displaying this variety. Yet as with CM2, most CM3 signs are virtually indistinguishable from their CM1 and CM2 counterparts, as Figs. 16–17 show. Furthermore, CM1 inscriptions are also attested at Ugarit, and they are *contemporary* with the CM3 inscriptions. But now compare the inscriptions on the CM3 tablets from Ugarit (RS 17.06 and RS 20.25, in Fig. 10) with the inscription on the CM1 tablet from Ugarit (RS 19.01, in Fig. 5). It is easy to see that the differences, such as they are, are quite minor when compared to the degree of variation evident in Fig. 11, and in fact could simply be the result of individual scribal idiosyncrasies.

The sizes of the various sign-lists are also telling, when compared to the variety of objects yielding the signs. The CM1 sign-list contains by far the largest number of signs (85); but then, CM1 is attested on by far the

largest number of objects (ca. 160). The CM2 and CM3 sign-lists contain just 59 and 44 signs, respectively; but together, CM2 and CM3 are attested on just eight objects, and one CM2 object (Enkomi 53.5; see Fig. 7) contains many repeated sign-groups. Considering the rarity of some signs in the parent script (Linear A), it would seem naive to expect to glean anything like a complete CM syllabary from these eight objects alone; and the implication is that the varying sizes of Masson's sign-lists are (at least in part) artifacts of the process by which she has created the lists.

Finally: even if we put aside the problems inherent in dating any inscription by its paleography (see Maier et al. 2008), the apparent chronology for the various scripts suggests that something may be wrong with the classification system. A review of the evidence presented in this paper shows that the four CM scripts are reportedly attested during the following periods:

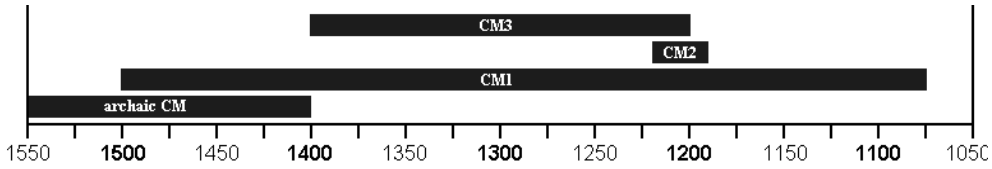

Fig. 15. Periods during which Masson's four varieties of CM are reportedly attested.

As can be seen, CM1 (which is found on the greatest number of objects) is attested for the longest period of time —indeed, for the entire known lifetime of CM except for the first fifty years. CM2 and CM3 simply seem to come and go; but during the periods when they are in use, CM1 *never ceases to be used alongside them*; and this (together with the similarity of their signs) makes it seem even more likely that all three varieties are in fact the same script. As for "archaic CM": it may very well be that some of the earliest CM documents do represent an initial period of experimentation; this would seem normal. But Fig. 11 shows that early Linear A looked very different from late Linear A, while remaining the same script; and the inscription on the late buff-ware bowl from Enkomi (Fig. 12) demonstrates the dangers of distinguishing scripts by their ductus without reference to a comprehensive paleographic study.

The hazards of identifying Cypro-Minoan in Philistia

"We need a unified and standardized corpus of Cypro-Minoan inscriptions that will allow us to see the whole script and its various classes of inscriptions—not subsystems of the script itself—in a clear historical context," says Palaima. "Until this is done, we shall continue to be plagued by piecemeal readings, guesses, and speculation" (Palaima 1989a: 162). The implications of this statement for the identification of CM in Philistia are clear: without a definitive inventory of CM signs, it is unsafe to assume that one particular sign is a variant of another even in Cypro-Minoan itself. Thus, in the absence of a "unified and standardized corpus" of CM, identifying a *Philistine* sign as a variant of a CM sign can never amount to more than conjecture, no matter how good the intentions of the epigrapher. As for the notion that the Philistine objects are actually inscribed with CM itself: no matter how many pre-alphabetic Philistine inscriptions are found, this idea can never convincingly be assessed until we have both a definitive CM sign-list against which to compare the inscriptions, and a solid picture of the acceptable degree of variation for each sign; and these things must await the compilation of a CM corpus, with its attendant paleographic study.

Fortunately, the wait may be relatively brief. In 1996, Joanna Smith and Nicolle Hirschfeld founded the *Cypro-Minoan Corpus Project*, whose aim is to "further the study of the script by means of a complete and widely disseminated corpus—in the form of an electronic database and a printed publication—containing accurate line drawings, photographs, descriptions, and archaeological and epigraphical discussions of all the evidence" (Smith and Hirschfeld 1999: 129). Though still incomplete, the project has already borne fruit, in the collection of studies published by the AIA as *Script and Seal Use on Cyprus in the Bronze and Iron Ages*.[10] The compilation of the corpus (which will include objects with single signs) and the completion of the paleographic study are mammoth undertakings, and may not be available for some time; but when they do become available, we will then have the tools necessary for objectively assessing the degree of similarity between CM signs and Philistine pre-alphabetic signs.

[10] Smith wrote in 2002 that the corpus would "soon appear" (Smith 2002: 29-30); it has not yet. Work on the corpus has been impeded to some extent by the fact that Smith and Hirschfeld are now based in different cities; but the project still continues, and over the past year, the two scholars have been discussing ways of completing it (Smith, personal communication 18-Dec-2008). In the meantime, both scholars recommend Ferrara (2009) as the best currently available source on the CM corpus and its paleography.

However, the creation of these tools will not signal the end of problems in identifying the script(s) from which the Philistine signs were derived, as demonstrating direct relatedness to *any* script will require a great deal more Philistine material than has been found to date. Table 4 at the end of this paper illustrates the problem by presenting a compendium of most of the known or suspected pre-alphabetic signs from early Philistia, including 30 signs from objects found at Ashkelon, Aphek and Ashdod; the table also includes an additional 18 signs from the Deir ʿAlla tablets, though the identification of this latter script as Philistine is far from certain (see Maeir et al. 2008). A few signs in the table are attested at more than one site. For each sign, the table displays the most similar sign in nine other non-alphabetic Bronze Age scripts: Linear A, Cypro-Minoan, Linear B, Cretan Hieroglyphic, Anatolian hieroglyphs, Egyptian hieroglyphs, Proto-Cuneiform, Proto-Elamite, and the Indus script. If a script contains nothing resembling a particular Philistine sign, the corresponding cell has been left empty.

It is plausible that some of these scripts, particularly the Aegean and Cypriot ones, might be related to Philistine pre-alphabetic writing, while other scripts (such as the Indus script) are almost certainly not related; yet as the table shows, each of these scripts contains identical counterparts to some Philistine signs, close approximations of others, and distant approximations of still others, while lacking even approximations for at least some Philistine signs. Notice how the simpler shapes are much more likely to recur in the same form in multiple scripts. Naturally, each script also contains scores or hundreds of signs that are not attested in Philistia at all, and when this fact is considered together with the table as a whole, the problem becomes apparent: in terms of morphological similarity to Philistine writing, CM does not really fare much better than the other scripts. Most of the similarities between Philistine signs and CM involve simple shapes that are employed by many scripts, while similarities involving more complex shapes are much rarer. Furthermore, many Philistine signs, including some of the most complex ones, have their closest counterparts in an impossible array of scripts: Linear A (signs 25 and 29 in the table), Proto-Cuneiform (signs 15 and 38), Linear B (sign 21), Egyptian hieroglyphs (sign 39), Proto-Elamite (sign 27), and so on. These are all clear indications that the repertoire of Philistine signs is simply not yet large and complex enough to enable us to determine the pedigree of the signs based on their shapes alone.

Thus a demonstration of direct relatedness between pre-alphabetic Philistine writing and CM must await not only the creation of a definitive list of CM signs and their variants, but also the discovery of a substantial number of *distinctively* CM signs (not new variants!) on Philistine objects. In the meantime, publications of Philistine inscriptions should draw comparanda from specific CM inscriptions rather than from Masson's tables, while considering comparanda from a range of other scripts as well; and for the time being, scholars should regard with skepticism any claims that Philistine inscriptions are written in Cypro-Minoan, or in a directly-related script. Given the current evidence, CM *influence* on pre-alphabetic Philistine writing remains a tantalizing possibility; but at the moment, that is all that can reliably be asserted.

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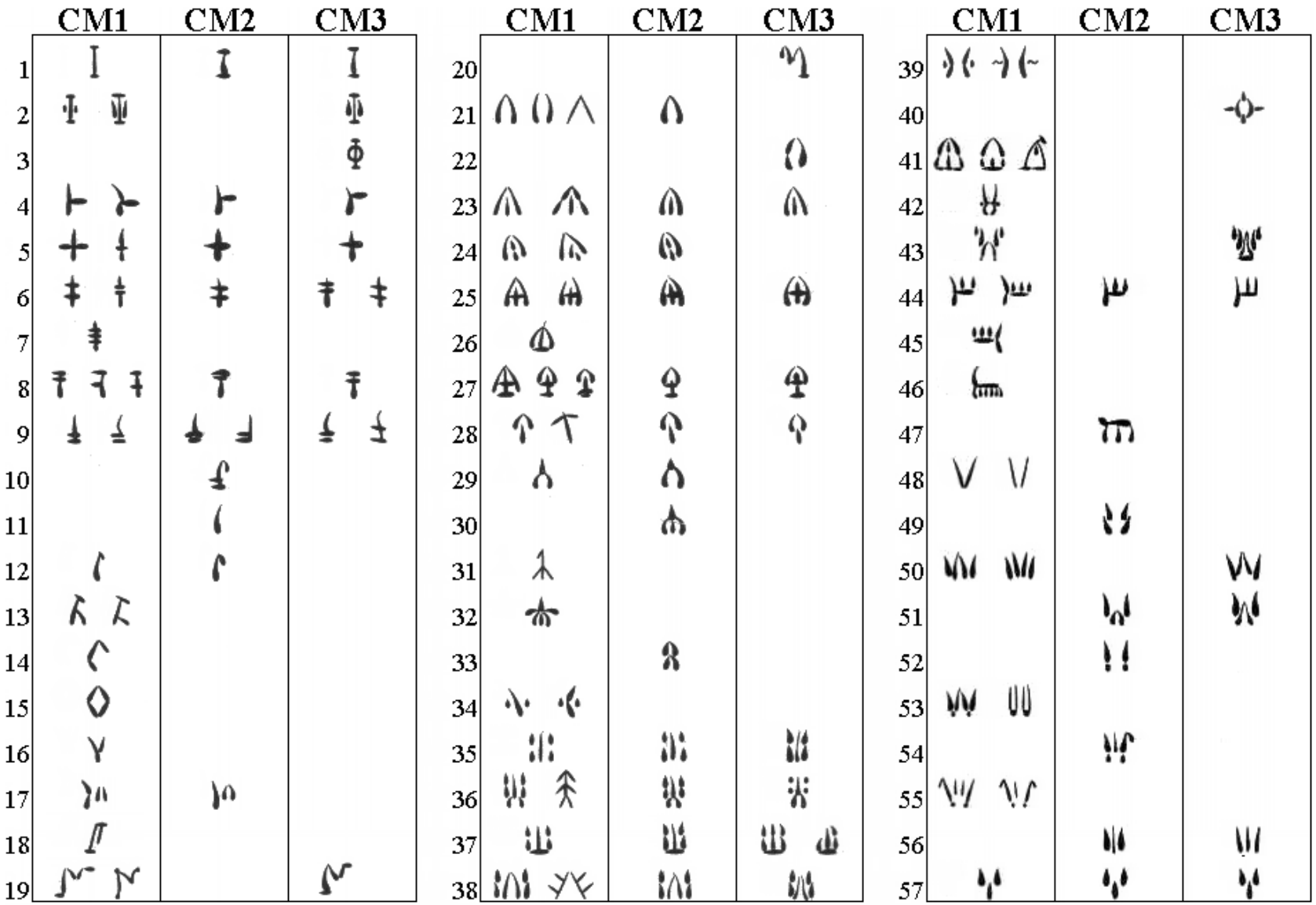


Fig. 16. Masson's CM signs 1-57 (after E. Masson 1974: 13-15).

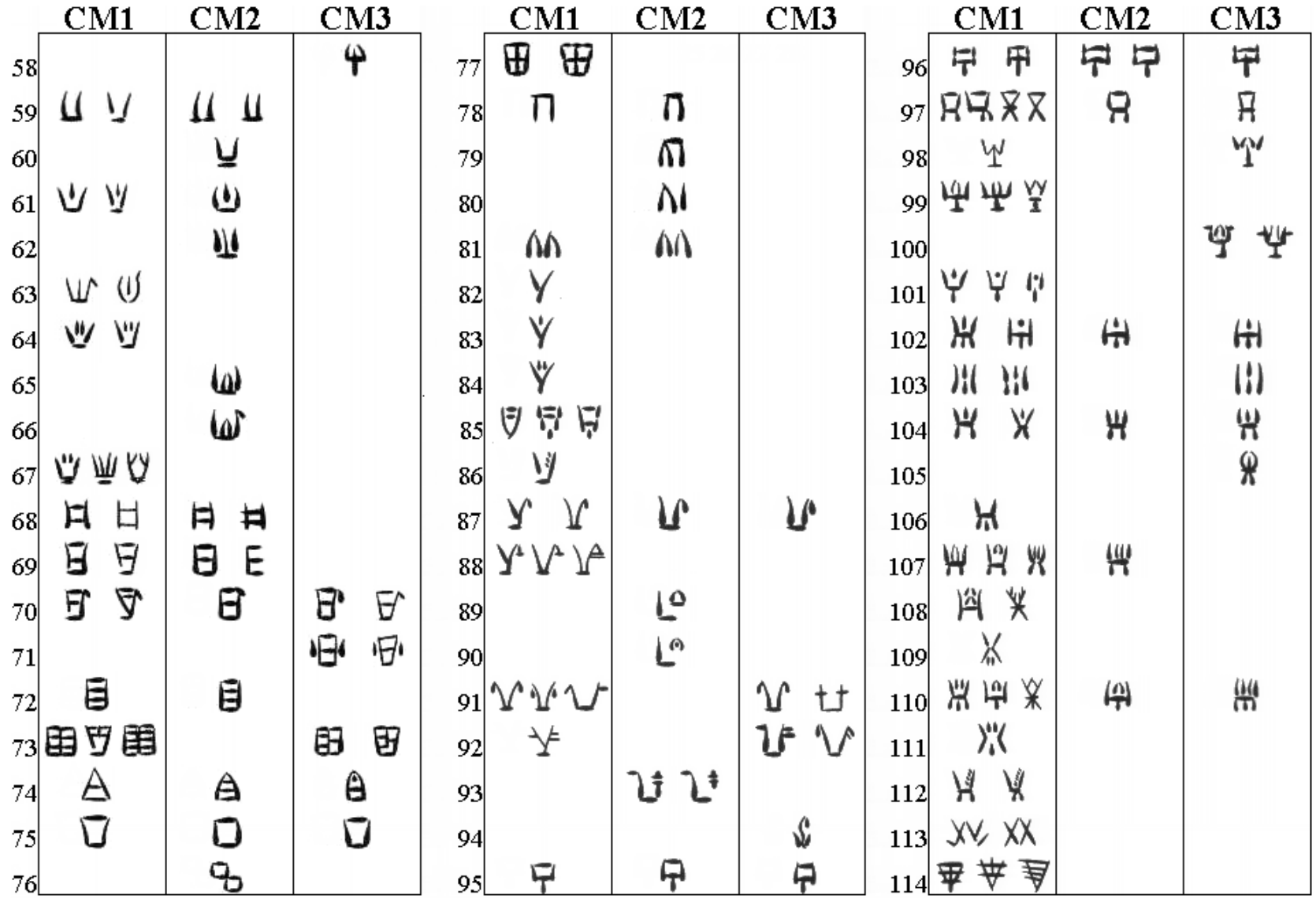
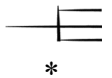
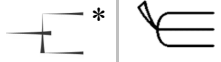
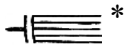


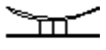
Fig. 17. Masson's CM signs 58-114 (after E. Masson 1974: 13-15).

Table 4. Pre-alphabetic signs from early Philistia and Deir ʻAlla, with comparanda from other non-alphabetic Bronze-Age scripts.[1]

Source	No.	Sign	Linear A	Cypro-Minoan	Linear B	Cretan Hieroglyphs	Anatolian Hieroglyphs	Egyptian	Proto-Cuneiform	Proto-Elamite	Indus script
Ashkelon inscription 4.5 (Cross and Stager 2006, 131-4, fig. 1)	1.								 *	 *	 *
	2.								 *	 *	
	3.					 *	 *		 *		 *
	4.							 *	 *	 *	
	5.									*	
	6.						*		*	*	
	7.		*		*				*	*	
Ashkelon handle 1 (*ibid.*: 135, fig. 5)	8.							*		*	
Ashkelon handle 2 (*ibid.*: 135-6, fig. 6)	9.							*		*	
Ashkelon handle 3 (*ibid.*: 136-8, fig. 7)	10.										
Ashkelon handle 4 (*ibid.*: 138, fig. 8)	11.							*	*	*	
Ashkelon handle 5 (*ibid.*: 139, fig. 9)	12.		*			*		*	*	*	*
Ashkelon handle 6 (*ibid.*: 140, fig. 10)	13.								*		
Ashkelon handle 7 (*ibid.*: 140-41, fig. 11)	14.			*		*	*		*	*	*

[11] Comparanda with asterisks have been rotated. Cypro-Minoan comparanda for signs from the Ashkelon objects are those suggested in Cross and Stager 2006. The pot handle from Aphek is pre-Philistine; see Yasur-Landau and Goren 2004. The identification of the Deir ʻAlla inscriptions as Philistine is far from certain; see Maeir et al. 2008.

Source	No.	Sign	Linear A	Cypro-Minoan	Linear B	Cretan Hieroglyphs	Anatolian Hieroglyphs	Egyptian	Proto-Cuneiform	Proto-Elamite	Indus script
Ashkelon handle 8 (*ibid.*: 141, fig. 12)	15.										
Ashkelon handle 9 (*ibid.*: 142-3, fig. 13)	16.										
Ashkelon handle 10 (*ibid.*: 143-4, fig. 14)	17.										
Ashkelon handle 11 (*ibid.*: 144, fig. 15)	18.										
Ashkelon handle 12 (*ibid.*: 144-5, fig. 16)	19.										
Ashkelon handle 15 (*ibid.*: 147, fig. 19)	20.										
Ashkelon handle 18 (*ibid.*: 150, fig. 22)	21.										
Aphek pot handle (Yasur-Landau and Goren 2004: 23, fig. 1)	22.										
Ashdod block seal (after Dothan and Dothan 1992: pl. 10)	23.										
	24.										
	25.										
	26.										
Ashdod cylinder seal (*ibid.*: pl. 11)	27.										
	28.										

Source	No.	Sign	Linear A	Cypro-Minoan	Linear B	Cretan Hieroglyphs	Anatolian Hieroglyphs	Egyptian	Proto-Cuneiform	Proto-Elamite	Indus script
	29.								 *	 *	
	30.		 *		 *						 *
Deir ‘Alla tablet 1440 (Franken 1964: 378, pl. 1)	31.									 *	
	32.							 *		 *	
	33.									 *	
	34.			 *					*		
	35.									*	
	36.								*	*	
	37.						*	*			
	38.							*	*		*
	39.							*	*		*
	40.									*	
	41.										
	42.								*	*	
	43.		*	*	*	*	*	*			*
	44.										
	45.						*	*			

Source	No.	Sign	Linear A	Cypro-Minoan	Linear B	Cretan Hieroglyphs	Anatolian Hieroglyphs	Egyptian	Proto-Cuneiform	Proto-Elamite	Indus script
	46.										
Deir ‘Alla tablet 1449 (*ibid*.: 379)	47.										
	48.										
Aphek tablet 47111.1 (Singer 2009a, 405; ibid. 2009b, 474)	49.										
	50.										
	51.										
	52.										
	53.										
	54.										
	55.										
	56.										
	57.										

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