The Origin of the Alphabet:
An Examination of the Goldwasser Hypothesis

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Summary: The Origin of the Alphabet

Since 2006 the discussion of the origin of the Semitic alphabet has been given an impetus through a hypothesis propagated by Orly Goldwasser: the alphabet was allegedly invented in the 19th century BCE by illiterate Semitic workers in the Egyptian turquoise mines of Sinai; they saw the picturesque Egyptian inscriptions on the site and borrowed a number of the hieroglyphs to write their own language, using a supposedly new method which is now known by the technical term acrophony. The main weakness of the theory is that it ignores the West Semitic acrophonic syllabary, which already existed, and contained most of the letters of the alphabet. Twenty-two propositions from Goldwasser's publications are examined critically.

Keywords: Protoalphabet – Acrophony – Syllabary – Consonantary

Resumen: El origen del alfabeto

Desde el 2006, la discusión sobre el origen del alfabeto semítico ha recibido un impulso a través de la hipótesis propagada por Orly Goldwasser: el alfabeto fue aparentemente inventado en el siglo XIX a.C. por trabajadores analfabetos semíticos en las minas egipcias de turquesa en Sinaí. Ellos vieron las inscripciones pictóricas egipcias en el sitio y tomaron prestadas un número de jeroglíficos para escribir su propio lenguaje, usando un supuesto nuevo método que es ahora conocido con el término técnico de acrofonía. La principal debilidad de la teoría es que ignora la acrofonía del silabario semítico occidental, que ya existía, y que contenía la mayoría de las letras del alfabeto. Veintidós proposiciones de las publicaciones de Goldwasser son examinadas críticamente.

Palabras clave: Protoalfabeto – Acrofonía – Silabario – Consonantario

Introduction

In 1916 Alan Gardiner published his hypothesis regarding the origin of the alphabet, plausibly proposing that the original letters of the alphabet, as displayed in the Semitic inscriptions from the turquoise mines of Sinai, had been borrowed from the Egyptian store of hieroglyphs, and by the application of the acrophonic principle a consonantal script had been created.[1]

In 2006 Orly Goldwasser went further, surmising that illiterate Semitic workers at the Sinai mines had actually invented the alphabet to write their own language, employing the Egyptian pictorial signs they saw in the stela inscriptions at the site, but with no understanding of the Egyptian writing system; and in the process they created the idea of acrophony.[2]

Goldwasser has briefly stated her case thus:

> *"I believe that the inventors of the alphabet did not know how to read Egyptian. When they looked at the Egyptian sign [N35] (**N** in Egyptian) they recognized the picture of water. In Canaanite (their language) the word 'water' might have been **mem** or **maim**. From this word they took*

[1] Gardiner 1916. Two useful manuals containing information on the study of the early alphabetic inscriptions are: Sass 1988 and Hamilton 2006. For an attempt to trace the course of the alphabet from Sinai to Hellas, see Krebernik 2007. Note that Sass, Hamilton, and Krebernik follow the Albright table of the supposed characters and sound-values of the original alphabet, as presented in Albright 1966: Fig. 1, and replicated, for example, in Cross 1980: 16. This differs in several details from my paradigm, in Colless 2010: Fig. 5, and reproduced in this article; it is based on more evidence than is customarily invoked, and proceeds along the reliable path laid down by Butin 1932: 137–159. Puech 1986: Fig. 8 diverges from the Albright system and his identifications are closer to the Colless version: D is a door not a fish; S is a fish; G is a boomerang; P is a mouth, not a corner; but his Tet, Sadey, and Qof are different from my choices. Albert van den Branden 1979 taught me that the best identification of Sadey is a tied bag, but Albright thought this figure-8 character was Qof. Butin (1932: 139) constructed an excellent table (flawed by his confusion of Y and K), which recognized the true Sadey and had none of the deviations that Albright and his successors unwisely pursued.

[2] Goldwasser 2006, entitled "Canaanites Reading Hieroglyphs". Note that I prefer to use a word "Canaanian" (as a counterpart to "Phoenician") since the term "Canaanite" has bad connotations from its usage in the Bible; "West Semitic" is another way of referring to the languages and scripts of Canaan (Syria-Palestine). Incidentally, in my opinion the frequently used terms "Protosinaitic" and "Protocanaanite" are now obsolete; the former was a subset of the latter, and yet it is incorrectly applied to all protoalphabetic inscriptions, even though it is obviously applicable only to the Sinai examples.

> *the first sound alone – M; which became the letter **mem** in*
> *the Canaanite scripts, and finally the English letter M.''*[3]

We will here examine twenty-two points made by Goldwasser in the presentation of her thesis,[4] and confront them with findings from my own research on the same subject.[5]

1. THE ALPHABET WAS INVENTED IN SINAI, BEFORE YEAR 13 OF AMENEMHET III

This means that the invention (or innovation) took place around 1840 BCE (This dating is achieved, dubiously, by means of her interpretation of Sinai Egyptian Stela 92; see section 22 below). It is true that the protoalphabet[6] is represented in inscriptions in Sinai in the Middle Kingdom period, but there is no explicit evidence that it was invented there rather than elsewhere. A scribal school in some city of Canaan or Egypt would be a more likely setting,

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[3] This is Orly Goldwasser's reply to a correspondent (Bonnie Long) who was wondering how the Egyptian hieroglyph for *N* became the letter *M*. It has to be asked whether the Egyptian N clearly represents ripples of water (it could be a range of mountain peaks); knowledge of its usage would presumably be required before it could be employed in a new script. Certainly, polychrome inscriptions colour this sign blue, but Goldwasser's Semitic workers were presumably looking at plain inscriptions; in any case, my view is that we must also consider the use of the sign in the West Semitic syllabary, which preceded the consonantary (the protoalphabet), and which shows clear understanding of the Egyptian system in its hieroglyphic and hieratic forms.
[4] Goldwasser 2012: 12–14 (entitled "The miners who invented the alphabet") contains the most succinct statement of her thesis ("the gist of my hypothesis"), and almost all of the propositions being considered here are taken from there; see also Goldwasser 2006: 130–156; 2011: 263–296.
[5] Colless 1988; 1990; 1991; 2010. Goldwasser (2006: 157) includes Colless 1988 and Colless 1990 in her bibliography, and she refers to Colless 1990 and Colless 1991 as "the latest effort" to read the inscriptions (Goldwasser 2006: 134, n. 82), but she does not engage with my work.
[6] Note that I use the informal term "protoalphabet" or "proto-alphabet" to describe the West Semitic prototype of the alphabet (Colless 1990: 6, 1996: 67, as noted by Hamilton 2006: 4, referencing Colless 1988; 1990; 1991). Technically speaking, the protoalphabet was an acrophonic consonantary, a consonantal script with no vowels represented, as also in Egyptian writing; moreover, according to my interpretation of the evidence (Colless 1988: 65; 1990: 5; 2010: 88–91), and again like the Egyptian system, it was a logo-consonantary (it had logograms, in that its letters could also be used for the whole word they represented) and a morpho-consonantary (it had what I call rebograms, whereby the signs could be used as rebuses); if the protoalphabet was in fact influenced by the Egyptian system it is not unlikely that it also included these features, though they are not present in the later Phoenician consonantal alphabet.

but the place and time are still a mystery. Nevertheless, it is quite possible that the *oldest-known* protoalphabetic inscription has been found in Sinai (perhaps **349=22**).[7]

2. All Hieroglyphic Prototypes for the Letters of the Alphabet Clearly Exist in the Hieroglyphs of the Sinai Inscriptions of this Period

This assertion may be true (excepting the signs that do not have an Egyptian model, namely W, Z, T̲, T, in my view; see section 14 below) but it is not "clearly" substantiated by Goldwasser, as her tables of protoalphabetic signs with presumed Egyptian counterparts ("Graphemes of the Protosinaitic Script") have only 21 items (though she knows it must have had several more).[8] Her identifications of half of the signs on her table are faulty, in my opinion. Het and Tet are not registered, but they occur in the Sinai Semitic texts, and their prototypes are present in the Egyptian inscriptions at the site. She singles out the letter He as a "special link": it depicts a man standing with his arms raised (each forming a right angle, at either side of the head) and it will ultimately become the Greek and Roman letter E; in her opinion the sign (a version of hieroglyph A28, be high or joyful) probably represents a local title related to the expeditions, since it is rare in Egypt; in that context I think it indicates a "superior", one who is high, rather than denoting jubilation, which is a better option for the origin of He (see my discussion of H in section 12 below).

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[7] With regard to the numbering system used for the Sinai inscriptions: the Egyptian texts are catalogued from **1** onwards; the Sinai Semitic inscriptions are included in the same collection, beginning with **Sinai 345**. My supplementary numbering runs from 1 to 44 (**372=19,** for example) and allows easier reference to my drawings (Colless 1990: 8–11) and my descriptions (Colless 1990: 12–47), and so a footnote does not need to be provided every time a Sinai inscription is mentioned. Also, Sass (1988) and Hamilton (2006) arrange their illustrations and descriptions of the inscriptions numerically from **345** to **375d**, and any particular item can easily be found in their handbooks.

[8] Goldwasser 2006: 153–156. Compare and contrast my table (attached to this article, **Fig. 1**) with drawings of signs, and proposed hieroglyphic prototypes. The progress of my understanding of the origin and development of the components of the alphabet is traceable in the successive tables I have published: Colless 1988: 34; 1990: 7; 1991: 21; 1996: 74; 1998: 34–35; 2010: 96.

Of course, given that the objects depicted by the protoalphabetic charac-
ters are derived from the real world (sky, landscape, living creatures, and
human culture), it should be asked whether the Egyptian hieroglyphs needed
to be involved as intermediaries. My considered opinion is that in the forma-
tion of the West Semitic syllabary and its derivative consonantary (the pro-
toalphabet) the Egyptian hieroglyphs and their current cursive forms were
taken into account. Proof of this hypothesis can be found in the use of such
distinctive signs as *nefer* [F35]*, djed* [R11], *ʻankh* [S34], and *raʻ* (sun) [N5,
N6] (examples in sections 15 and 19 below; exceptions in section 14).

3. About 30 Protosinaitic Inscriptions Were Found in the Area of Serabit el-Khadem and this Must Have Been Where the Alphabet was Invented

It should be added that one inscription (Sinai **348=9**) was found in the
Magharah area (probably NK, not MK) but it is now lost, though two copies
have survived; and my tally is 44, not merely 30. This substantial number of
items is used as a questionable argument for the origin of the protoalphabet in
Sinai: "The only reasonable explanation for such a 'boom' in this kind of writ-
ing in Sinai is that Sinai was the site of its invention."[9] However, other possi-
bilities exist: stone was readily available at this site, for writing Egyptian and
West Asian inscriptions, and they have survived, albeit damaged by weather-
ing; but texts on perishable material, in Sinai and elsewhere, would have van-
ished. Moreover, there is no dearth of protoalphabetic and syllabic inscrip-
tions from Egypt and Canaan, and beyond (see sections 5 and 6).

4. All but One of the Texts Show Very Early Paleographical Stages of the Script, and Were Probably Produced During a Short Span of Time

The one exception she adduces is "Sinai 375c" (**381=41** in my numbering
scheme), attributed to the New Kingdom; but others must also be NK. Gordon
Hamilton has two main categories in his chronological scheme for the Sinai

[9] Sinai is thus presumed to be the locus of the invention of the alphabet because of the relative
abundance of inscriptions: Goldwasser 2006: 132–133. See also Goldwasser 2012: 1; 2012: 21,
notes 70–73. For a larger number than 30 texts, see Colless 1990: 8–11 (drawings of the 44
items) and 51 (table of the texts and their provenance).

texts: *earliest* (ca 1850–1700), and *typologically developed* (ca 1700–1500);[10] by this criterion Goldwasser's "short span" is impossible, needing to encompass the centuries from the 19th to the 16th; there are numerous examples from the 12th Dynasty (Middle Kingdom, 19th century BCE) and also from the 18th Dynasty (New Kingdom, 16th century BCE); and the pictorial aspect is constant throughout.

5. In Egypt Only Three Such Inscriptions Are Known

To arrive at this total, Goldwasser takes the Wadi el-Hol inscription[11] as two items (but it is a single continuous text, in my reading of it);[12] and she adds the ostracon from the Valley of the Queens (which should be NK; see section 12 below). However, there are considerably more protoalphabetic consonantal inscriptions, plus several syllabic texts. Flinders Petrie brought many of them to light: Sass has depictions (figures 282–285) of three items from Kahun/Lahun in the Fayyum (presumably but not certainly MK): an ostracon, a stamp seal, and a heddle-jack (this has a syllabic inscription, in my view). Sass (1988) and Hamilton (2006) have overlooked the six limestone tablets from southern Egypt (presumably from Thebes), which Petrie published in 1912; they are from the New Kingdom period; one of them is syllabic; the three most important of them comprise two inventories of the letters of the protoalphabet (they are not texts).[13]

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[10] Hamilton 2006: 289–311. Notice that Hamilton is accepting (rightly, in my view) that the Sinai inscriptions date from both the MK and the NK, but there has long been an either-or debate; see Sass 1988: 135–144.

[11] Darnell *et al.* 2005 (the Wadi el-Hol graffito is understood as "Two early alphabetic inscriptions").

[12] Colless 2010: 91, and 95, Fig. 4; and also: http://cryptcracker.blogspot.co.nz/2009/12/wadi-el-hol-proto-alphabetic.html. In my view it marks the site of celebrations for the goddess 'Anat.

[13] Petrie 1921 for the three Kahun/Lahun objects; Petrie 1912, Frontispiece, for photographs of the six tablets from Qurneh/Thebes in southern Egypt; they are presented upside down, except the one in the bottom right corner, on which see: http://cryptcracker.blogspot.co.nz/2006/07/alphabet-when-young-above-is.html. The syllabic piece (top left) is studied in Colless 1997: 48–50; 1999: 31–33. For an examination of the three inscriptions comprising two "abgadaries" (inventories of the protoalphabetic letters, not in any particular order, though both documents have similar clusters of signs) together with a criticism of Hamilton's proposed identifications of the protoalphabetic signs (Hamilton 2006), which are not entirely supported by this neglected evidence, go to http://cryptocraker.blogspot.nz/2007/10/gordon-hamiltons-early-alphabet-thesis.html.

From the Nile Delta a collection of five inscribed terracotta objects found their way to an antiquities dealer in Melbourne, and eventually passed into oblivion; but the inscriptions on the three lamps are syllabic (each begins with the word *niru* "lamp"); the two statuettes have consonantal inscriptions, apparently.[14] There is a tiny amulet from Deir Rifa (in the extreme south of Middle Egypt) with a West Semitic inscription that could be consonantal or syllabic.[15] These objects would presumably date from the time when "Asiatics" (the Hyksos) ruled northern Egypt (15th Dynasty, 17th–16th centuries BCE), between the Middle Kingdom (12th Dynasty) and the New Kingdom (18th Dynasty).[16]

An inscription on a statue in the far south of Egypt (near Elephantine) could be consonantal or syllabic, and Middle or Late Bronze Age.[17]

Notice that in these three periods in Egypt (MK, Hyksos, NK) protoalphabetic and protosyllabic inscriptions are found together, and they are difficult to distinguish (especially if a reader is only versed in the consonantal system), because they have much in common.

6. ONLY A HANDFUL OF EARLY ALPHABETIC INSCRIPTIONS ARE KNOWN FROM CANAAN, DATING FROM THE 18TH TO THE 13TH CENTURY BCE

Actually, besides fragmentary and minimal texts, there are more than a dozen that make a statement, all on non-perishable materials.[18] None are extant on papyrus or parchment, though such must have existed; the argument from silence is certainly not valid, as absence of evidence is not evidence of absence; in the Iron Age the situation is similar, since the writings of the

[14] The three lamps are studied in Colless 1997: 50–55; the objects have different legends, but each lamp (*niru*) is described as "nice" (*tb* or *n'm*). The drawings of the inscriptions on the two figurines remain unpublished. An unpublished and unprovenanced (possibly from Syria) bowl-lamp (the Frederick O. Waage bowl, Dept of Classics, University of North Carolina at Chapel Hill) also has a significant inscription: *niru nugahuta*, "bright lamp."
[15] Hamilton 2009; http://cryptcracker.blogspot.co.nz/2011/09/from-deir-rifa-gordon-hamilton-has.html.
[16] On the Semitic ("Asiatic") presence and hegemony in the Nile Delta region, see the large collection of essays in Oren 1997.
[17] Goedicke 2006. It includes a sequence G'N (consonantal), or GASHINA (syllabic, Goshen?).
[18] Protoalphabetic inscriptions from Canaan: Colless 1991: 19–20 listed; 22–24 illustrated; 20–62 examined; Puech 1986: 172–187; Sass 1988: 51–75; Lemaire 2000: 110–114; Hamilton 2006: 390–400.

Phoenicians are lost, but we know they kept records (see also sections 20 and 21 below).

Goldwasser's supposition is that the protoalphabet was not widely used, and was the lowly person's writing system; but the examples from Canaan are from temples (on paraphernalia such as bowls, an incense stand, and a ewer), from factories (on pottery), and from a tomb that did not belong to a pauper (on a dagger).

A surprise has come from Babylonia, in the form of Canaanian signature inscriptions on cuneiform tablets from the First Sealand Dynasty (16th century BCE); the letters have the forms current in early Phoenician inscriptions of the Iron Age.[19]

West Semitic syllabic texts are also found in many diverse places:[20] Egypt (as noted in section 5 above), Byblos,[21] Tuba (Umm el-Marra in Syria),[22] Megiddo,[23] Trieste,[24] Norway,[25] and elsewhere.[26] A remarkable seal with syllabic writing, possibly from Byblos, depicts a royal family in the style of Akhenaton and Nefertiti, and presumably dates from the Amarna period (14th century BCE).[27]

[19] Four West Semitic graffiti on Babylonian clay tablets: Colonna D'Istria 2012: 61–63.

[20] Colless 1998: 29, a list of 20 syllabic inscriptions.

[21] Dunand 1945; Mendenhall 1985; Colless 1993; 1994; 1995; 1997.

[22] Schwartz (2010) discusses the inscriptions on four small broken cylindrical objects (funerary talismans, I suggest); but he misses the connection with other West Semitic syllabic writing, and fails to see the significance of the dating, perhaps ca. 2350 BCE, in the Early Bronze Age, demonstrating the antiquity of the syllabic script. See also: http://cryptcracker.blogspot.co.nz /2007/03/oldest-west-semitic-inscriptions-these.html

[23] The Megiddo signet ring from a Late Bronze Age tomb, Colless 1997: 45–46; 1998: 33; https://sites.google.com/site/collesseum/megiddoring. My reading: "Sealed, the sceptre of Megiddo" (*nukhutama shubṭu sha magaduda*) assists in confirming Mendenhall's decipherment.

[24] Colless 1998: 30–31; an inscribed plaque, discovered in a cave near Trieste, published in 1973, and acknowledged by Giovanni Garbini (2006: 63–66) as a genuine Semitic "pseudo-hieroglyphic" inscription; before 1985, when Mendenhall published the key, West Semitic syllabic fakes could not easily be made.

[25] Kongsberg, in Norway, at a silver mine which has a syllabic and a consonantal inscription: http://cryptcracker.blogspot.co.nz/2013/09/phoenicians-in-scandinavia.html

[26] Unprovenanced artefacts: scaraboid seal (Asia Minor?) Colless 1998: 30; stone stamp: http://cryptcracker.blogspot.co.nz/2010/03/inscribed-west-semitic-stone-seal-this.html. A disc reportedly from the Amuq Valley in Syria, depicting a mare and a foal, with an inscription saying "the foal (*'uwalu*) brings (*yibi*) a gift (*zabuda*)". Other inscribed objects are known to me, but omitted here.

[27] Garbini *et al.* 2004. I think the seal may have had a funerary purpose.

7. The Inventors Were Illiterate, Unable to Read or Write Egyptian

Of course, when they had invented the new script for writing their own West Semitic language they would have become literate. But Goldwasser is assuming that they had no knowledge or understanding of writing, including the Egyptian system (and, it must be added, their own acrophonic syllabary, from which a majority of the letters arguably derive; see section 8). As we progress through her propositions we will see reasons for doubting this claim; a notable example is the use of the *nefer* hieroglyph (F35) for Tet in the protoalphabet, an icon that is rather opaque and not self-explanatory (see section 15 below).

Another aspect is the social status of the Semitic workers at the Sinai mines. Goldwasser usually refers to them as "illiterate miners," but this overlooks the metalworkers, the "sons of the furnace" (*bn kr*), whose "equipment" (*'nt*), notably the "melt-furnace" (*kbšn mš*), features strongly in the inscriptions, and the remains of such metallurgical apparatus have been found on the site.[28] W. F. Albright may have misinterpreted the inscriptions, particularly in his misreading of Sadey in favour of Qof to produce his phantom word *nqbn* for "miner" ("piercer" or "hole-borer"), and his distortion of *m'hb b'lt* ("beloved of Baalat", which had been a vital point in the decipherment process) into "Swear to bring a sacrifice"; but he did well in directing our attention to the details of the Beni-Hasan depiction of a party of thirty-seven male and female Asiatics: "asses, weapons, musical instruments, and portable bellows for use in working copper" (he compares Genesis 4:21–22, referring to Jubal the ancestor of all those playing "the lyre and the pipe", and Tubal Qayn connected with "forging copper and iron").[29]

Evidence from the Iron Age copper mines at Timna indicates that the metalworkers were considered to be specialists and were accorded high social status; and ethnographic studies have shown that this was the case in such sites in other times and places.[30] Accordingly, the image we should have of

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[28] The significant details of the Sinai protoalphabetic inscriptions are summarized in Colless 1990: 2, 6, 12. For a thorough report on the metallurgical evidence from Mine L and Mine G, see Beit-Arieh 1985.

[29] Albright 1968: 98, 200.

[30] Sapir-Hen and Ben-Yosef 2014, with ample bibliography. One indicator of higher status was the consumption of the better cuts of meat. In Sinai Mine L, Capra bones were found but not analysed with these criteria in mind (Beit-Arieh 1985: 113).

the Sinai Semites is of competence and professionalism, which could well involve literacy.

8. Their Illiteracy Motivated them to Formulate New Relations of Sound and Icon, and to Discover a New Solution, Namely Acrophony

In fact the acrophonic principle was already established for them in their West Semitic syllabary, dating back to the Old Kingdom in the Early Bronze Age.[31] This significant fact alone would invalidate Goldwasser's basic hypothesis. The acrophony ("summit sound") principle was apparently a modification of the rebus principle, and it was the mechanism for constructing the syllabary and subsequently the consonantary.[32] In the syllabary, a picture of a door evoked the word *daltu* (door) and acrophonically this yielded the syllable DA; in the consonantary (the protoalphabet) it was D. In one case there was a monosyllabic word: the picture of a mouth said *pu* and subsequently became alphabetic P.

The Mendenhall decipherment of the Byblos syllabic inscriptions has been rejected or ignored, mainly on the insufficient grounds that his translations are "cryptic".[33] However, much research has been undertaken since his book was published in 1985;[34] but for our purposes it suffices to show that the majority of the consonantal letters of the Phoenician alphabet already existed in the syllabic inventory, and this can be seen in the BS (Byblos script) column on the table of signs supplied with this article (**Fig. 1**).[35]

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[31] On the antiquity of the West Semitic syllabary, its use of acrophony, and its influence on the formation of the protoalphabet, see: Mendenhall 1985; Hoch 1990; Isserlin 1990; Colless 1992; 1998; and also https://sites.google.com/site/collesseum/westsemiticsyllabary.

[32] On acrophony as modified rebus writing, see Colless 1996; and the idea is also broached here: https://sites.google.com/site/collesseum/alphabetevolution.

[33] This facile opinion is paraded here: http://en.wikipedia.org/wiki/Byblos_syllabary.

[34] Hoch 1990; Colless 1992; 1993; 1994; 1995; 1997; 1998.

[35] See also Colless 1998: 34–35, for a comparative table of the syllabic and consonantal signs, with corresponding Egyptian hieroglyphs.

9. THE SINAI ALPHABETIC INSCRIPTIONS CONSISTENTLY SHOW THE WRONG DIRECTION OF WRITING ACCORDING TO EGYPTIAN RULES

This is the first of a number of alleged indications of the illiteracy of the inventor or inventors of the protoalphabet.

Egyptian scribes arranged their texts either in blocks of horizontal lines or in sets of vertical columns, and in both cases the preferred direction was from right to left. With regard to horizontal *lines* of writing, Egyptian scribal practice was to run the characters from right to left (sinistrograde, as in Hebrew and Arabic practice), but sometimes from left to right (dextrograde, as in English writing). Egyptian signs with fronts and backs (such as birds and human heads) must look backwards to the beginning of a horizontal line of writing. Most of the Sinai Semitic inscriptions run down in columns; only one of them has a block of inscribed lines: Sinai **349=22** (now mutilated by weathering) has the bovine and human heads facing towards the end of the line (that is, they are looking where they are going); the direction of writing on 349 is sinistrograde (running from right to left), and this is in agreement with the Egyptian tradition, but the animals (ox, snake, human) are facing the wrong way. Inscription **357=32** has a vertical column leading into a dextrograde line (left to right); the latter has the heads facing rightwards; this is opposite to Egyptian practice.

When an Egyptian text is arranged in vertical *columns* (with the text running from top to bottom in each line, and the columns moving from right to left) fronts and faces are regularly turned to the right; but in the previously mentioned vertical section of protoalphabetic **357=32** the oxen, the snakes, and the fishes look leftwards, as do the animals on the two columns of **351=23** (with a picture of the god Ptah facing leftwards, that is, in the direction of the columns of writing, the opposite of the depiction of Ptah on Sinai Egyptian Stela 92, a document which is central to Goldwasser's thesis)[36]. These three texts (349, 351, 357) are from Mine L; they are carefully inscribed and may be some of the oldest on the site. They are deviant according to Egyptian rules, but here is the important point: they are actually faithful to their own West Semitic tradition of writing, which goes back to the time of the Old Kingdom; the syllabic texts from Gubla (Byblos on the coast of Lebanon) have bees and birds looking left along sinstrograde lines (Texts A, C, D) and

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[36] Goldwasser 2012: 14–18, on Sinai Stela 92 as "The Link" (see section 22 below).

looking left in columns (Text G).[37] Note that there is at least one West Semitic syllabic inscription from the turquoise region of Sinai (**526**); it moves from left to right, and the signs face that way, contrary to the Egyptian style.[38]

What we have in these significant Semitic inscriptions from Sinai is the work of scribes who were apparently well acquainted with their own two writing systems (syllabary and consonantary), and it is likely that they were always bringing the protoalphabet with them from elsewhere, rather than inventing it on the spot on one of their Sinai expeditions.

However, absolute consistency in orientation (note the word "consistently" in Goldwasser's statement) is hard to find in the rest of the collection: on the block statuette from the temple (**346=4**), the one fish and the two human heads look one way while the three snakes face in the opposite direction; the fish and the ox on **363=16**, **352=28**, and **358=35** are looking in different directions. Moreover, the heads on **356=29** (from Mine L) are actually in conformity with the Egyptian convention (whether by accident or design). The writing on the bilingual votive sphinx from the temple (**345=3**) is interesting: the two horizontal Semitic lines are uncharacteristically dextrograde (the ox and the dancing man are not obviously looking where they are going, but the snake is pointing away from the direction of the writing); the Egyptian text is characteristically sinistograde (the Horus bird is looking rightwards). Some of these cited inscriptions (notably this sphinx inscription, with its NK Qof [hieroglyph V25] having two strokes at the top) would be from the New Kingdom period, and would not be relevant to the question of the beginnings of the protoalphabet.

In summary, the writers of the protoalphabetic inscriptions (as also the syllabic texts) show a fairly consistent tendency to observe their own long-standing custom of writing from right to left, which was possibly something they imitated from Egyptian practice; but they usually had letters facing forward, in the direction of the line, which is (whether accidentally or intentionally) the opposite of Egyptian practice.

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[37] Drawings of the Gubla syllabic texts, showing the direction of writing: Colless 1993: 4 for document D; 1994: 60 for C; 1994: 73 for A; 1997: 42 for G. For photographs, see Dunand 1945: 72–81.

[38] For Sinai 526 (a syllabic inscription) see Colless 1997: 47–48.

10. Letters in One and the Same Inscription May Show Different Stances

As examples, Goldwasser cites **357** (inside Mine L) and **358** (inside Mine M, which is joined to Mine L), both of which have already been mentioned here; in each case, the two instances of the letter L are in a lying position on the one hand, and standing obliquely on the other; this is an interesting observation; a possible explanation is that the two instances are considered to be in different sorts of lines (horizontal versus vertical), but inspection of the whole set shows that this is not a general rule in the system; there is a wide variety of stances for that letter. On the block statuette from the temple (**346=4**), the text may have had more than one writer (front and side); there are two different kinds of head (R) and three variant styles of house (B). No such variation would normally be permitted in the work of a trained Egyptian scribe (but see the remarks on Sinai **28** and **53** in section 15 below), but perhaps the Semitic writers are simply showing their individuality, not their ignorance.

Incidentally, in Israel in the Iron Age I (1200–1000 BCE) the few available inscriptions exhibit various stances and shapes for each letter in each text, leading to the suspicion that the signs were being used syllabically (with vowels a, i, u, as in the original syllabary). This hypothesis will be explored and tested as more documents are brought to light; in the mean time a preliminary survey is accessible.[39]

11. In Most Cases, the Writers Do Not Follow any Order in Writing

Again, Goldwasser's generalizing is too sweeping. Her prize trophy is the jumble of letters on one side of the block statuette (**346=4**, probably MK): the line of writing meanders. "No Egyptian scribe would ever produce such an inscription." But it alerts us to the need to take meandering and clustering into account when reading some of the inscriptions: **365=8**, **363=16**, **361=13**. Two examples of the line taking a sharp turn are **357=32** and **358=35**; each begins as a vertical column and then runs sideways. This is untidy, but sometimes the surface of the wall might be to blame for such irregularities. Also, mining tools were used for the task; this is stated in **376=1** ("The pickax has

[39] Colless 2013.

engraved…"); its four columns are in boustrophedon style ("as the ox ploughs": 1 down, 2 up, 3 down, 4 up) starting on the left; a large fish is standing on its tail to fit into column 3 (certainly a "different" stance); the bovine and human heads are facing right so we know which direction the text is taking (left to right). These apparent anomalies have their own artistry and attractiveness (like Arabic calligraphy), and generally the writers have aimed at setting their texts down in orderly lines or columns.[40]

12. Different Hieroglyphs May Be Used as Prototypes for a Single Letter

Goldwasser rightly adduces *N* (snake), which is found as a viper (I9, *f*) and as a cobra (I10, *ḏ*); but she does not show an example of the viper; the ideal cases are the two similar inscriptions: **360=14** (Mine K) has a viper, and **361=13** (Mine N) has a cobra in the corresponding position in the sequence of signs. But both are snakes.

R is a human head, and she suggests that it is based not only on the profile hieroglyph (D1 *tp*) but also the frontal form (D2 *ḥr*), which is possibly but not certainly evidenced on **364=37**, **365=8**, and **367=17**.

H (a man with upraised forearms, the forerunner of the letter E in the alphabet) could be cited in this connection: Goldwasser has assumed that this is a high officer shouting Hey or Hoy, but the more likely link is a person exulting or jubilating (*hillul* celebration, already used in the syllabary for HI). A28 (man with both forearms raised) is more refined (and clothed) than the simple stick figures in the Semitic texts, but as the determinative marker for high and joy it provided the semantic basis for HI and H in the West Semitic scripts. The character for H is also found in an inverted stance (standing on hands, as in hieroglyph A29) at the end of **358=35**; and it occurs on the Valley of the Queens ostracon in Egypt;[41] there it could be taken as an inverted K, but as H it produces the word *ʾmht* (maidservants), and this goes with the reading of the word below it as *ʾšt* (women, though *ʾtt* is the expected form in the Bronze Age) with the letter Shin as the NK form of the sun with a single

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[40] Note the comments of Albright (1966: 8–9) on the arrangement of lines; he points to one peculiarity: "the lineation is not precise, so that a text may run down and then go back up slightly and even circle around, very much as in later North-Arabian graffiti".

[41] Valley of Queens ostracon: Goldwasser 2011: 308, Fig 3a; Sass 1988: Fig. 286.

uraeus serpent and a tail (N6). Furthermore, on the Wadi el-Hol inscription in Egypt, one of the three instances of H (fifth in the vertical line) has only one forearm raised, and Goldwasser tries A1 (seated man) and A17 (seated child with hand to mouth); but the man is obviously dancing for joy, as with hiero-glyph A32, likewise denoting jubilation (but if he is kneeling, then A8 could be invoked, being yet another jubilation sign).

Rather than demonstrating ignorance of the Egyptian system, this evi-dence indicates knowledge of its contents on the part of the Semitic users of the protoalphabet.

13. In Some Cases New Iconic Readings Are Given to Egyptian Signs

This statement is baseless, in my view. Goldwasser plays with possible ori-gins for the letter Waw (oar, mace, toggle-pin) but disregards the fact that *waw* means "hook" or "nail" (WA in the syllabary, W in the consonantary);[42] in the protoalphabet it was a circle on a stem, and then in the Phoenician alphabet the circle was opened up at the top, and this was an inverted version of the form it had in the syllabary. This object had no counterpart among the hieroglyphs, and so it leads into the next point.

14. Some Letters Have their Origin Outside the Egyptian System

Refer to my table of signs to see the forms (and the BS column shows the syl-labic forerunners attested at Byblos, and elsewhere):

W (*waw*) would fit here, as just noted.

Z (*ziqq* fetter) not an Egyptian character, as far as I can see.

T (*taw*, + or x, meaning a mark or signature) has no Egyptian counterpart.

T (*tad* breast): a female double breast has no Egyptian prototype.[43]

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[42] Hamilton (2006: 90–92) creates unnecessary difficulties about *waw* and its "hook" or "nail" meaning; he insists with Albright that it is a mace; he expects it should have become *yaw* (but presumably its usage as the letter name would maintain its initial *w*); he surmises that the shape of the letter caused *waw* to be used for the hooks from which the temple curtains were hung; his motive for this unnecessary hypothesis seems to be the desire to find an original Egyptian hieroglyph for every single letter of the protoalphabet.

[43] Regarding Thad/Shad (breast) in the protoalphabet (Th) and in the syllabary (SHA), and Shimsh (sun, generating SHI and Sh) refer to the table of signs (Fig. 1, though this lacks the circle as a representation of the sun); also section 19 below for clarification; and see further

Goldwasser puts two signs into this category: hand and bow. The bow (composite bow, *ṯann, the supposed source of Ṯh and/or Sh) is a phantom, seen only in speculation.[44]

K as a hand finds little to compare with hieroglyph D46 (but fingers can be shown in this character, to compare with the upright hand on **349=22**; but it has two different precursors in the syllabary (see section 16).

15. Lack of Standardization

B With regard to the letter Bet, Goldwasser declares that there is a plethora of house forms in the Sinai Semitic inscriptions, but she goes too far when she includes houses with multiple rooms, such as the one with two rooms and a rounded courtyard in **380=11** at Mine G; this is actually the sign for Het.

Ḥ Other examples of Het are: the two-part dwelling in text **360=14** at Mine K, and the three-section mansion in **361=13** at Mine N. These are based on Canaanian mansions, the relevant word being *ḥaçir*, and comparing this to hieroglyph O6 (mansion) is legitimate, given the similarity to the Semitic forms in examples in Sinai Egyptian inscription **28**.[45]

Ḥ The original hieroglyph (V28) is one of the single-consonant signs, representing Egyptian Ḥ but Semitic Ḥ. It is a hank of thread, or a wick, shaped like a double helix. Sinai inscription **53** (dating from year 44 of Amenemhet III)[46] is a splendid piece of Egyptian calligraphy (and it has a host of hieroglyphs that are prototypes for the letters of the alphabet, though eleven of them are missing by my calculation); but it shows inconsistency, having some cases of this sign with the standard three loops (lines 1, 4, 7) and others with only two loops (lines 4, 8). In the Sinai protoalphabetic texts the form with three loops is found once (**376=1**) and the remaining few instances have two loops.

Likewise on Sinai **53**, hieroglyph F35 (*nfr*) shows variation: it has one stroke at the top of its stem in lines 1 and 15, and two strokes in line 6. Its

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Colless 2010: 90 and 92, and n. 48. Sh and Ṯh both occur in the Wadi el-Hol text, for example, and neither character resembles the composite bow (*ṯann*) of Albright's scheme.

[44] Hamilton (2006: 235–237), in his quest for completeness, provides hieroglyph T10 for the composite bow, unnecessarily in my view; Colless 2010: 92, and n. 48.

[45] Semitic forms of hieroglyph O6 (mansion) in Sinai 28: Goldwasser 2006: 126, Fig. 6; 144, Fig. 22.

[46] Photograph and drawing of Sinai inscription 53: Sass 1988: Figs. 291, 292.

equivalent (as Tet) in Sinai **351=23** has only one stroke, though in the syllabary it could have two strokes (see the BS column on my table of signs).

Ṭ Tet only appears once in the Sinai corpus, in **351=23**, but it was clearly a borrowing of the Egyptian *nefer* hieroglyph, which stands for goodness and beauty, and Semitic *ṭab* (good, beautiful) provides the acrophone (also ṬA in the syllabary). As this hieroglyph does not readily yield up its meaning (the heart and the windpipe perhaps expressing emotional reaction to goodness) knowledge of the Egyptian symbol would be required, contrary to Goldwasser's assumption of the inventor's ignorance.

16. Two Icons Competing for the Representation of a Particular Sound

Again the accusation is lack of standardization.

D Goldwasser sets up a false opposition for the letter D: *dalt* (door, which is still visible in the Roman form of D) versus *dag* (fish), though she knows that the fish sign could be (and surely is, I would say) Samek.[47] So there are two origins for **S** (*samk*): fish and spinal column (see the table of signs). The fish occurs in the south; the northern form is the spine, as also in the syllabary (for SA).

Two more possible instances can be offered; both come out of the syllabary.

K kapp (palm of the hand, KA) and *kipp* (palm branch, KI).

M horizontal waves (water, MU) and vertical wavy line (rain, MI).

Incidentally, these examples (D, K, M) show that the formation of the protoalphabet was basically a matter of choosing phonograms from the Canaanite syllabary, and using them as consonantograms; but preference was given to signs with the –a vowel.[48]

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[47] The fish sign as D (erroneous opinion, properly S) alongside the door sign: Goldwasser 2006: 135–137; Hamilton 2006: 61–75; Sass 1988: 113–114. The fish and the door are both found in Sinai **376=1**, and this should settle the matter: they must represent different consonants.

[48] A connection between the syllabary and the consonantary was proposed long ago, but the idea remains neglected: Mendenhall 1985: 23–25 ("From Syllabary to Alphabet"); Colless 1992: 96–99 ("the relation of the proto-alphabet to the Byblian signary"); Colless 1998: 34–35 (comparative table of syllabic, protoalphabetic, and hieroglyphic signs).

17. The Acrophonic Script Shows no Signs of Contamination from the Complex Egyptian Ideographic System

Goldwasser asserts that "its complicated semiotic mechanism escaped them." On the contrary, its workings had been understood by their scribes since the time of the Old Kingdom, when the West Semitic *logosyllabary* was constructed.[49] In the new acrophonic script, the protoalphabet, which was a *logo-consonantary* (possibly conceived because the Egyptian system was known and comprehended), each sign could also function as a *logogram* (for example, house icon as *bayt*), and as a *rebogram* (the consonants of the word that goes with the picture could be employed to express homophones, or act as components in another word). Examples have been collected and presented elsewhere.[50] Such extended usage of the letters seems to have been still operating in the early Iron Age, in the text of the Izbet Sartah ostracon.[51] It is detectable in the Wadi el-Hol text.[52] Strangely, Goldwasser allows a "classifier" sign into this inscription (letter 5 on the vertical line);[53] in my interpretation it is a dancing man and a logogram (*hillul* "celebration"); she wants it to be a human male classifier preceding a male personal name, but the name following it is ʿAnat, the goddess who is pictured beside the name.

18. No Clear Case of Borrowing from the Monoconsonantal Repertoire

This is true, but eight of them do turn up in the inscriptions, with different sound-values, of course: *B (*Egyptian *h) Ḫ (ḥ) Y (ʿ) K (d) M (n) N (f) N (ḏ) P (r).*

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[49] Hoch 1990.

[50] Colless 2010: 82–83, 88–89, 91.

[51] https://sites.google.com/site/collesseum/abgadary.

[52] Colless 2010: 91, and 95, Fig 4; also http://cryptcracker.blogspot.co.nz/2009/12/wadi-el-hol-proto-alphabetic.html.

[53] Goldwasser 2006: 146–150. Her interpretation of the inscription as a name with a title and a toponym ("The besieger [*mktr* encircler] *ʿwt*. El's trickle [*pkʾl*]") is unlikely to be what the writer intended; I regard it as a statement identifying the drinking-place (*mšt*) where celebrations for the goddess ʿAnat were held (see the preceding note for references). Goldwasser's K (the "two hands" grapheme) is the Egyptian *k3* hieroglyph (D28), but it is actually a sun-sign (*š*) as described in section 19 below; she invokes a scarab from Tell el-ʿAjjul (Fig. 32) showing a form of this character, where the "hands" are small circles; but the correct identification is there at the top of the text, obviously the sun with the serpent; incidentally there is a correspon-

19. No Hieratic Signs Mixed with Hieroglyphs

If stylized "hieratic" signs (in which the original image is almost obliterated) were borrowed for the protoalphabet, this would require literacy as a precondition, and she insists that the inventors "interacted only with the pictorial meanings of the signs".[54] However, others disagree with her, she acknowledges.

Obviously, Goldwasser would eschew the discredited idea that the letters of the Phoenician alphabet were newly made from hieratic characters, instead of being stylized versions of the original pictophonograms.[55] However, the characters of the Canaanian syllabary are related to Old Kingdom hieratic as well as hieroglyphic.[56]

This is an opportunity to point out that the users of the protoalphabet did take note of current Egyptian symbols and the fashion changes that occurred in the hieroglyphic script. For the sun-sign (which functioned as *ši* in the syllabary and *š* in the consonantary) the hieroglyph for sun (*rʿ* N5) was employed: in the syllabary it was a circle, with or without its central dot; but the circle (the sun-disc) is not attested in the consonantary (though it is known in the derivative cuneiform alphabet); instead we have variations of N6, depicting the sun-disc with one uraeus serpent (New Kingdom) or two serpents (N6B, found in the MK and NK periods); the double-serpent sign is obviously the prototype for the Sinai version of *š* (with the sun disc omitted).[57] Another N6 variant is found twice in the Wadi el-Hol text; it has the

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ding sun-sign on the "Saint Louis cylinder seal" or "Grossman seal" (Hamilton 2006: 397); see Colless 1991: 24 (drawing No 30), 58–60; at that time I did not recognize the correct value for that sign (Colless Sadey, Hamilton Qof), and it can now be seen as another document containing both Sh (sun) and Th (breast), like the Wadi el-Hol inscription.

[54] Goldwasser 2011: 273–274 ("The Unnecessary Hypothesis of Hieratic Sources").

[55] Goedicke (2006: 126–127) still argues that the alphabet derives from Egyptian hieratic (cursive) signs, and this "can be fully demonstrated", on his Fig. 6 ("Parallel table of hieratic letter > alphabetic letter including their names"); the names were given later (not when the signs were created); for example, the name *resh* "head" was given to the character for R because it resembled a head; Goldwasser and myself accept that acrophony was applied to the image of a head and the sound *r* emerged from the word for head, in the beginning; but I would add that it was already RA in the syllabary.

[56] Hoch 1990, and this connection with the Egyptian Old Kingdom is one argument for the invention of the syllabary in the Early Bronze Age, before 2200 BCE.

[57] This point was kindly clarified to me by Stefan Wimmer (2010: 5), where he recognizes that I had shown the sun-sign connection in Colless 1988: 50–51; N6B with the two serpents was

sun-disc and the serpent, but it lacks the tail that is part of the N6 form in the New Kingdom; [58] examples of this version can be found on inscriptions in Sinai (**85** and **87**, year 4 and 5 of the reign of Amenemhet III) which relate to Khebded, a literate member of the Reṯenu ruling family (and a candidate for identification as the deviser of the alphabet) who has played an important part in Orly Goldwasser's research; it occurs as a representation of the sun in the pictures on each stela, not as a hieroglyph in the text, but it matches the protoalphabetic sign.

20. Not Used by Any Institution or State for Administrative Purposes

This is an argument from silence, which ignores the possibility of lost documents; state administration records were written on papyrus, which usually only survives in the dry Egyptian climate. But it would be fair to say that a large number of the Sinai protoalphabetic documents on stone were official, under the authority of the Egyptian government. Without being able to give a coherent and comprehensive interpretation of the corpus of inscriptions, Orly Goldwasser makes generalizations like this: it allowed the peripheral sectors of society to write their names or the name of a god, or to present a short prayer. This is true as far as it goes, but in the Semitic inscriptions at the Sinai turquoise mines there are official texts as well as private statements, though all are open to public gaze.

Four are concerned with a man named Asa: **376=1** records "the sickness (*dwt*) of Asa"; **345=3** is the votive sphinx from the temple, with his signature on the left shoulder above the dedicatory line, "This is my offering (*nqy*) to Baalat"; **358=35** inside Mine M is his obituary, "Asa has done (*pʿl*) his work (*mlkth*)"; **363=16** is on his burial site, "This grave (*knkn*) is the resting place (*nḫt*) of Asa". The block statuette from the temple (**346=4**) bears a prayer to

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also clearly the prototype for the character on the Timna inscription, which we both studied (Wimmer 2010; Colless 2010). Incidentally, in a West Semitic logo-syllabic inscription from Thebes (New Kingdom) there is a case of the sun syllabogram (which was normally a simple circle) with a combination of serpent and disc, instead of one or the other (Colless 1997: 48–50; 1998: 31–33); also at Timna (Colless 2010: 94, Fig. 2).

[58] Wimmer (2010: 5) accepts that this is a sun-sign, and rejects the proposed connection with a composite bow; but Goldwasser (2006: 142, No 19) follows Hamilton (2006: 241–244) in the supposition that *ṯann (a double bow?) is the source of the letter Shin; it is true that the sign for *ṯ* became Shin, but it was the human breast, *ṯad* (Colless 2010: 90, 92).

Baalat "for increase (*lsg*) of pasture (*mrʿt*)" (for the donkeys and goats, pre-sumably).

The official announcements relating to Mine L, for example, were inscribed in steliform (stela-shaped) panels on rock outside the mine. It is rea-sonable to suppose that these were posted at various times and relate to dif-ferent expeditions to Serabit el-Khadim. Officers are mentioned in them: "the chief prefect" (*rb nçbn*) appears in **349=22**, and on the statuette **346=4**; "the prefect of the expedition" (*nçb wṭ* = Egyptian *wd̠ʿ* "expedition") is on **351=23**, and possibly on **350=27**.[59]

The inscriptions concerned the equipment (*ʾnt*) for the metalworking (making and remaking the copper tools for the mining operations) by the "sons of the furnace" (*bn kr*), and also the vessels (*ʾnt* "equipment", *kd* "water vessel", *ʾb* "water bag") for watering the vegetable garden (*gn*). In other places I have provided a full account of the information and instructions in the inscriptions.[60] However, in our attempts to decipher these enigmatic docu-ments, we must constantly keep in mind that the only one who really knew what an ancient alphabetic inscription meant was the person who wrote it.

21. **The Cuneiform Alphabet Was a Sophisticated Reworking of the Protoalphabet**

Goldwasser accepts that the cuneiform signs of the alphabet that was used for various purposes at Ugarit (and in other places) were based on the pictorial characters of the consonantary. However, she surmises that the protoalphabet was a despised script, which now achieved respectability in new raiment. Let us not forget that the reason we have so much written material from Ugarit is that it was preserved on clay, unlike the lost royal records of Byblos and Tyre. Clay tablets are far less fragile and perishable than papyrus rolls. If the scribes of Ugarit had chosen to write their documents on papyrus, we would have at

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[59] Albright 1966: 42 (glossary) reads the Sadey (Ç) as Qof ; and so he has *nqb* as **naqbu*, "mine, tunnel" (from root *nqb* "pierce, bore a hole"), and *nqbn* as *naqbân*, "miner", which in his view has a plural in *m* (mimation); he can find the sequence *rb nqbnm* ("chief of the min-ers") in **349**, but in **346** the mimation is lacking, so he helpfully and authoritatively provides it, as *rb nqbn(m)*. My reading, *rb nçbn* ("chief of the prefects") has nunation for the plural of *nçb*, "prefect, foreman", a word attested in Hebrew (1 Kings 9:23).

[60] For my first attempt at a comprehensive analysis of the Sinai protoalphabetic inscriptions, see Colless 1990; more recently I have placed several new articles concerning the main texts on this website: http://cryptcracker.blogspot.co.nz/

our disposal an adze with a name and a title, another adze with the same title (*rb khnm*, chief priest), and a cylinder seal with a personal name on it.[61] Consequently, someone would be asserting that this insignificant cuneiform script was only used for writing owners' names on their property.

Fortunately some official documents have survived on stone and metal at Byblos (Gubla) to show that the West Semitic syllabary was used there in the Bronze Age.[62] Early in the Iron Age (11th century BCE) Wen Amon reported that Zakar-Baal of Byblos brought out the official records of his forefathers and had them read out to reveal past dealings with Egypt (was the writing syllabic or consonantal?).[63] At Megiddo the syllabic script is found on an official signet ring ("Sealed: the sceptre of Megiddo") from the Late Bronze Age.[64] At Beth-Shemesh a scribe had made himself a copy of the cuneiform alphabet,[65] and an ostracon speaks (slurringly) of carousing in a wine tavern.[66]

It is thus clear that all three West Semitic writing systems (syllabary, consonantary, cuneiform script) were operating around 1200 BCE at the end of the Bronze Age, and the syllabary and the consonantary had flourished side by side for many centuries.

22. The Egyptian Stela 92 is the Link

This monumental inscription includes a portion by an important Semitic personage, Khebded the brother of the Prince of Reṯenu, who participated in the expeditions during the long reign of Amenemhet III in the 19th century BCE[67]

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[61] See Goldwasser 2011: 292–293. This cuneiform consonantary (with three syllabograms: 'a, 'i, 'u) is represented beyond Ugarit (sometimes in a reduced form, a "short alphabet"): Dietrich and Loretz 1988; Puech 1996. For the three brief inscriptions not on clay tablets, see Gordon 1965: 257 (inventory) and 159 (transcriptions). For my demonstration of the origin of the cuneiform alphabet in the signs of the protoalphabet, go to: https://sites.google.com/site/collesseum/cuneiformalphabet

[62] Mendenhall 1985: 32–143; Colless 1993; 1994; 1995; 1997.

[63] Breasted 1905: 106–107 ("journals"); Lichtheim 1978: 226–227 ("daybooks"); presumably papyrus.

[64] Megiddo gold signet ring: Colless 1997: 45–46; 1998: 33; the word "sceptre" is a logogram (with hieroglyph S44 as its prototype); see n. 23 above.

[65] Sass 1991; Puech 1986: 197–213; Dietrich und Loretz 1988: 277–296.

[66] Beth Shemesh ostracon: Colless 1990: 46–49; https://sites.google.com/site/collesseum/winewhine.

[67] Goldwasser 2012: 14–17. Her essay is in response to Christopher Rollston, whose arguments are reproduced there: he suggests that the evidence she presents actually supports the opposite

Goldwasser finally allows that some of the Semites on the Egyptian expeditions to Sinai were officials who could read Egyptian writing; but they did not invent or use the alphabet; they would have learned about it from the workers at Mine L. Khebded's Egyptian inscription uses a square for the house sign, and also a closed rectangle. The square would have been borrowed from the protoalphabetic script at Mine L, where it represented a house, to go with the word *bayt* and to stand for the letter B; that is Goldwasser's "link" between Stela 92 and Mine L; and therefore, she presumes, the alphabet had already been invented by that time, Year 13 of the reign of Amenemhet III (see section 1, above). This is not necessarily so.

Here is a more likely connection (refer to my table of signs, for B in the Sinai, Canaan, and BS columns): Khebded would have known his own West Semitic syllabic script; one form of the BA sign was related to an Old Kingdom cursive sign for "house" (*pr*), with the base line of the square moved up diagonally to touch the top corner;[68] but the closed square *and* rectangle were also options for the house sign and BA; and, as happened with so many of the syllabic characters, all three forms were passed on to the consonantal protoalphabet. That is how Khebded came to be employing rectangles and squares for "house" in his Egyptian hieroglyphic inscription: he was already doing so in his Semitic syllabic writing.[69]

A new "link" is thus made; the "house" built by Orly Goldwasser collapses; her hypothesis is refuted.

SUMMATION

If we think in evolutionary terms, the consonantal protoalphabet was not so much an invention as a mutation of the previous syllabic system. In this regard, Mendenhall speaks of "the evolution from syllabary to alphabet".[70] By

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of her case. Goldwasser (2010, 46) has a photograph of Stela 92 and its depiction of Khebded, with the surprising editorial caption: "Was he the Canaanite who invented the alphabet?" Perhaps he was.

[68] Hoch 1990: 116, 119; he also raises the question of a possible relationship between the syllabary and Egyptian "group writing".

[69] Dunand (1945: 103) indicates the inscriptions where the square and upright rectangle are attested; but relates them to the Egyptian *p* hieroglyph (Q3, seat); he recognizes the possibility that the square with its base as a diagonal line is a *beth* (100–101); significantly, inscriptions with this sign (C and D) do not have the closed rectangular form. See further Mendenhall 1985: 26; Hoch 1990: 118–120; Colless 1992: 62.

[70] Mendenhall 1985: 23.

the same token, the cuneiform alphabet was a modification of this consonantary, representing its pictorial signs with clusters of wedges (as had happened in the development of the Mesopotamian cuneiform logosyllabary). Research on the signs of any one of these three systems must always take the other two into account (as seen in the discussion of *š* as the sun, in section 19 above).

In the creation of the West Semitic scripts, evolution is the process; simplification is the driving force; acrophony is the creative technique, an offshoot of the older rebus principle; there is room for human intervention, but the move from syllabary to consonantary was not a new start with a new invention (acrophony) by a humble artisan who was ignorant of his own culture, as Goldwasser believes. The bulk of the letters of the protoalphabet were already functioning in the syllabary; and 18 of the 22 letters in the Phoenician alphabet of the Iron Age had an ancestor in the Canaanian syllabary of the Bronze Age (in my view, the exceptions were Het, Lamed, Sadey, Zayin). The reader should pause for a moment and ponder over this striking fact. The relevant signs are presented in the BS column of my chart (**Fig. 1**), and even if it is retorted that this script is not generally acknowledged as having been deciphered, the comparisons and resemblances are striking, and this would appear to be the obvious place for the protoalphabetic characters to be found. It seems significant that the initial syllables with the vowel *–a* predominate overwhelmingly in the acrophonic protoalphabet (refer to the Sinai/Egypt column of the table). Note further that Sadey has not been detected in a syllabic text yet, and if the tied bag (V33) was used, then it will be 19 out of 22. A number of new signs were added to the protoalphabet (which had more consonants than the syllabary) to bring the total of consonants to 27.[71]

The consonantal aspect of the Egyptian system had long been known to educated Semites, but it could well be that in the Middle Kingdom period, when many Canaanians ("Asiatics") were living in Egypt and were welcomed by the rulers, the motivational influence was there to promote further simplification in their writing, and to produce the most compact system the world had seen. They might not have called this unique species of script a consonantary (or a vowelless syllabary), but they knew how to operate the device. Its "genetic code" or "genome" contained not only letters (pictophonograms, specifically consonantograms, one of which was a double helix, incidentally) but also some lingering benign viruses, namely logograms and rebograms. In

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[71] Colless 2010: 92. But some sounds had more than one sign to represent them (see section 16 above).

this regard, it is not necessary to suppose that the Semitic scribes focused on the Egyptian monoconsonantal signs as a model, since their letters would also function as biconsonantal and triconsonantal phonograms when acting as rebograms. The use of alternative signs for particular sounds is a phenomenon arising from *syllabary options* (ka or ki for K, mi or mu for M, showing that the signs with –a were not always given preference) and *hieroglyph choices* (for hi and H [*hillul* jubilation] three joy signs [A28, A29, A32] were available and were employed).

Ultimately Orly Goldwasser's hypothesis was a good one, because it was falsifiable. Somebody needed to try this idea, but unfortunately it has proved to be deeply flawed speculation, groundless rather than groundbreaking, perilously conducive to flights of fancy. Of course, the possibility remains that the protoalphabet was indeed conceived at the Sinai mines, but not on a basis of ignorance and illiteracy.

Goldwasser was striving to cause a paradigm shift in this field of study, where the consensus was certainly in need of a shake-up. When the West Semitic logosyllabary generated the logoconsonantary (the protoalphabet) there was a species of paradigm shift, and now that the process and its results are perceptible (starting with Mendenhall's evolution insight and then the realization that the signs in both systems could also function as logograms and rebograms) we have a different approach to reading protoalphabetic inscriptions, and a fresh paradigm in the grammatological sense, that is, a table of signs and sounds to replace the statutory stone tablet that was promulgated by William Foxwell Albright. Orly Goldwasser was likewise misguided by the chart from which the Albright school would not deviate; she also gave credence to his questionable readings of the Sinai inscriptions.[72] Nevertheless, the things Goldwasser has achieved through the publication and defence of her thesis are laudable.

I have personally been stimulated to go back to all the Egyptian inscriptions from Serabit and Magharah, and simultaneously look for dating criteria to apply to the protoalphabetic and syllabic inscriptions, apparently with some success. An example appears in the next paragraph.

Goldwasser's colourful popularising article in *Biblical Archaeology Review*[73] was enriched by helpful illustrations, notably photographs of the

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[72] Sass (1988: 49–50) concludes that Albright's 1966 study cannot be regarded as a decipherment, and he offers **349** and **352** as examples of Albright's excessive rewriting of the texts.
[73] Goldwasser 2010.

bilingual sphinx (**345**, with "beloved of Hathor" in Egyptian hieroglyphs, and "beloved of Baalat" in the West Semitic script) which paradoxically would seem to undermine her belief that the Semitic workmen could not read Egyptian writing, but it is obviously from the New Kingdom not the Middle Kingdom (for Q it has a very clear 18th Dynasty form of the cord wound on a stick, that is, V25 not V24) and so it is not relevant to the question of origins; that same article showed the Serabit temple ruins with many of the monumental inscriptions still standing (notably Khebded's Stela 92), and it displayed a reconstruction of this sanctuary; it opened up the subject to the public, and a large amount of correspondence was received by the editor; scholarly response was opposed to her ideas, notably from Anson Rainey before his death, and then Christopher Rollston (her 2012 publication, which has been scrutinized here, was a reply to him).

One correspondent, namely James E. Jennings of the University of California (Los Angeles), begged to differ on the grounds of what he had been taught by "the brilliant linguist J. Ignace Gelb": "The Canaanites did not invent the alphabet." I will accept that assertion, if the emphasis is placed on the word "invent" (it was a mutational innovation rather than an invention); but his next point is not (as Mendenhall, Hoch, and myself say) that they drew the signs out of their existing syllabary, which had already employed Egyptian hieroglyphs acrophonically for a new Semitic purpose, but this: "they extracted 22 signs from the already existing 24 uniliteral signs found in Egyptian hieroglyphic writing" (and the acrophonic principle had no part in this, according to Gelb); they produced a script that can be described as "open consonantal uniliteral writing" (whereby the sign represented a consonant plus an unspecified vowel or no vowel, and this is what I was hinting at when I mentioned "a vowelless syllabary" earlier).[74] The figure "24" for the Egyptian monoconsonantal signs is slightly suspect (24 is the number of sounds but there are alternative signs for *y, w, m, n, s, t*), and I have already said that only eight of the "uniliteral" or "monoconsonantal" hieroglyphs found their way into the protoalphabet (in section 18 above).

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[74] See also Helmut Satzinger 2002, "Syllabic and Alphabetic Script, or the Egyptian Origin of the Alphabet"; "syllabic" refers to the Gelb idea of the alphabet as an economical syllabary, not to the West Semitic syllabary that generated the alphabet; he speculates (entirely contrary to the Goldwasser hypothesis) that the inventors must have had a profound knowledge of the Egyptian hieroglyphic system, and they may have been Egyptian scribes (not non-Egyptian miners). Note also the speculative studies of Ludwig Morenz (2011; 2012) on the early alphabet and its genesis; he follows the Albright scheme.

The great irony, as I see it, is that Gelb was one of the decipherers of hiero-glyphic Hittite (the Luwian syllabary), but he did not realize that it had been constructed acrophonically, presumably following the pattern provided by the West Semitic logosyllabary. These days Gelb's most faithful follower is Barry Powell, and in his book entitled *Writing* (2006) he has a chapter on the origins of West Semitic writing, in which he dismisses the "discredited" acrophonic principle as a factor.[75] This is quite easily done, by withholding Occam's razor (entities should not be multiplied) and regarding the "undeciphered" epigraphic material (such as our Sinai and Wadi el-Hol inscriptions) as examples of other experiments in creating scripts, and thus divorcing them from the Phoenician alphabet, as evidenced around 1000 BCE when there were no picture-signs. But at that time they would be saying, so to speak, "D is for Door (Dalet)", whereas at the start it was "Door [*dalt*] is for D", that is, practising acrophony.

Ultimately, this is the great boon that Orly Goldwasser has bestowed on her readers: people have learned that the alphabet was indeed formed by means of the acrophonic principle.[76]

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[75] Powell 2006: 153–186, on West Semitic writing.

[76] It needs to be added that doubt still remains whether the Egyptians knew the acrophonic prin-ciple through their single-consonant signs. Goldwasser (2012: 19, n. 1) says that these particu-lar signs represented monosyllabic words and "did not acquire their phonetic value, as far as we know, by the use of an acrophonic procedure". However, Jacques Freu (2000: 98), after sur-veying the development of ancient hieroglyphic writing, concludes that the Egyptians actually invented the alphabet, since the monoliteral signs were the precursors of the Phoenician alpha-bet. Freu maintains (2000: 94–95) that there was an Egyptian consonantal alphabet from the beginning, and it was constructed by the application of the principle of acrophony: for example the *f* of the viper sign was derived from the word *ft* meaning "viper", and *ḏ* from the cobra, *ḏt*; the water sign supplied *n* from *nt*, water; **nine** of the signs fit this model, and **five** are not clear (m, g, w, k, s); the remaining **ten** would fit the pattern of being monosyllabic words. It is dif-ficult to deny that acrophony was at work here, and this principle could have been noticed by the practitioners of West Semitic writing in the Bronze Age. At the same time, this does not necessarily nullify my idea that in the evolution of West Semitic scripts, the acrophonic syl-labogram and then the acrophonic consonantogram were extensions (or reductions) of the rebus principle; and these Canaanian signs continued to function as full rebograms and logograms; in this regard, Freu (2000: 95) reminds us that most of the single-sound hieroglyphs kept their ideographic value, and this could be another connection between the Egyptian and Semitic systems. Incidentally, in my estimation, only one of the protoalphabetic signs goes with a monosyllabic word, namely P (*pu*, mouth). Finally, it is important to remember that Charles Lenormant, as long ago as 1838, thought and taught that "Phoenicians" had borrowed from Egyptians the alphabetic principle and the acrophonic method (*méthode acrologique*), taking a selection of hieroglyphs and applying new sound values to them; and he gave as exam-ples, the ox for 'alep, the house for B, and the eye for 'ayin (Lemaire 2000: 105–106).

BIBLIOGRAPHY

ALBRIGHT, W.F. 1966. *The Proto-Sinaitic Inscriptions and their Decipherment*. Cambridge, MA, Harvard University Press.

ALBRIGHT, W.F. 1968. *Archaeology and the Religion of Israel.* Baltimore, MD, Johns Hopkins Press.

BEIT-ARIEH. I. 1985. "Serabit el-Khadim: New Metallurgical and Chronological Aspects". In: *Levant* 17, pp. 89–116.

BREASTED, J.H.1905. "The Report of Wenamon". In: *The American Journal of Semitic Languages and Literatures* 21/2, pp. 100–109.

BUTIN, R.F. 1932. "The Proto-Sinaitic Inscriptions." In: *Harvard Theological Review* 25, pp. 131–203.

COLLESS, B.E. 1988. "Recent Discoveries Illuminating the Origin of the Alphabet". In: *Abr-Nahrain* 26, pp. 30–67.

COLLESS, B.E. 1990. "The Proto-alphabetic Inscriptions of Sinai". In: *Abr-Nahrain* 28, pp. 1–52.

COLLESS, B.E. 1991. "The Proto-alphabetic Inscriptions of Canaan". In: *Abr-Nahrain* 29, pp. 18–26.

COLLESS, B.E. 1992. "The Byblos Syllabary and the Proto-alphabet". In: *Abr-Nahrain* 30, pp. 15–62.

COLLESS, B.E. 1993. "The Syllabic Inscriptions of Byblos: Text D". In: *Abr-Nahrain* 31, pp. 1–35.

COLLESS, B.E. 1994. "The Syllabic Inscriptions of Byblos: Texts C and A". In: *Abr-Nahrain* 32, pp. 59–79.

COLLESS, B.E. 1995. "The Syllabic Inscriptions of Byblos: Texts B, E, F, I, K". In: *Abr-Nahrain* 33, pp. 17–29.

COLLESS, B.E. 1996. "The Egyptian and Mesopotamian Contributions to the Origins of the Alphabet". In: G. BUNNENS (ed.), *Cultural Interaction in the Ancient Near East, Abr-Nahrain Supplement Series* 5, pp. 67–76.

COLLESS, B.E. 1997. "The Syllabic Inscriptions of Byblos: Miscellaneous Texts". In: *Abr-Nahrain* 34, pp. 42–57.

COLLESS, B.E. 1998. "The Canaanite Syllabary". In: *Abr-Nahrain* 35, pp. 28–46.

COLLESS, B.E. 2010. "Proto-alphabetic Inscriptions from the Wadi Arabah". In: *Antiguo Oriente* 8, pp. 75–96.

COLLESS, B.E. 2013. "The Lost Link: The Alphabet in the Hands of the Early Israelites". In: *The ASOR Blog.* http://asorblog.org/the-lost-link-the-alphabet-in-the-hands-of-the-early-israelites/

CROSS, F.M. 1980. "Newly Found Inscriptions in Old Canaanite and Early Phoenician Scripts". In: *Bulletin of the American Schools of Oriental Research* 238, pp. 1–20.

DARNELL, J.C., F.W. DOBBS-ALLSOPP, M.J. LUNDBERG, P.K. MCCARTER, B. ZUCKERMAN, and C. MANASSA. 2005. "Two Early Alphabetic Inscriptions from the Wadi el-Hol". In: *The Annual of the American Schools of Oriental Research* 59, pp. 67–124.

DIETRICH, M. and O. LORETZ. 1988. *Die Keilalphabete: Die phönizisch-kanaanäischen und altarabischen Alphabete in Ugarit.* Münster, Ugarit-Verlag.

COLONNA D'ISTRIA, L. 2012. "Épigraphes alphabétiques du pays de la Mer". In: *N.A.B.U.* 3, pp. 61–63.

DUNAND, M. 1945. *Byblia Grammata: Documents et recherches sur le développement de l'écriture en Phénicie.* Beyrouth, Impr. Catholique.

FREU, J. 2000. "Les signes monolitères égyptiens, précurseurs de l'alphabet". In: R. VIERS (ed.), *Des signes pictographiques à l'alphabet. La communication écrite en Méditerranée*. Paris-Niza. Édtions Karthala et Association Alphabets. pp. 87–102.

GARBINI, G., M.M. LUISELLI and G. DEVOTO. 2004. "Sigillo di età armaniana da Biblo con iscrizione". In: *Rendiconti dell'Academia Nazionale dei Lincei* IX, 15, pp. 377–392.

GARBINI, G. 2006. *Introduzione all'epigrafia semítica.* Brescia, Paideia.

GARDINER, A.H. 1916. "The Egyptian Origin of the Semitic Alphabet". In: *Journal of Egyptian Archaeology* 3, pp. 1–16.

GOEDICKE, H. 2006. "A *Bama* of the First Cataract". In: *Timelines: Studies in Honour of Manfred Bietak.* Vol 2, Leuven, Uitgeverij Peeters, pp. 119–127.

GOLDWASSER, O. 2006. "Canaanites Reading Hieroglyphs". In: *Ägypten und Levante* 16, pp. 121–160.

GOLDWASSER, O. 2010. "How the Alphabet Was Born from Hieroglyphs". In: *Biblical Archaeology Review* 36/2, pp. 40–53.

GOLDWASSER, O. 2011. "The Advantage of Cultural Periphery: The Invention of the Alphabet in Sinai (Circa 1840 B.C.E)". In: R. SELA-SHEFFY and G. TOURY (eds.), *Culture Contacts and the Making of Cultures*. Tel Aviv, Tel Aviv University, pp. 255–321.

GOLDWASSER, O. 2012. "The Miners Who Invented the Alphabet: A Response to Christopher Rollston". In: *Journal of Ancient Egyptian Interconnections* 4/3, pp. 9–22.

GORDON, C.H. 1965. *Ugaritic Textbook*. Rome, Pontificium Institutum Biblicum.

HAMILTON, G.J. 2006. *The Origins of the West Semitic Alphabet in Egyptian Scripts.* Washington, D.C., Catholic Biblical Association of America.

HAMILTON, G.J. 2009. "A Proposal to Read the Legend of a Seal-Amulet from Deir Rifa, Egypt as an Early West Semitic Alphabetic Inscription". In: *Journal of Semitic Studies* 54, pp. 51–79.

HOCH, J.E. 1990. "The Byblos Syllabary: Bridging the Gap between Egyptian Hieroglyphs and Semitic Alphabets". In: *Journal of the Society for the Study of Egyptian Antiquities* 20, pp. 115–124.

ISSERLIN, B.S.J. 1990. "The 'Pseudo-Hieroglyphic' Inscriptions from Byblos and their Relation to Early Alphabetic Writing". In: *Semitica* 38, pp. 179–185.

KREBERNIK, M. 2007. "Buchstabennamen, Lautwerte und Alphabetgeschichte". In: R. ROLLINGER, A. LUTHER and J. WIESEHÖFER (eds.), *Getrennte Wege? Kommunikation, Raum und Wahrnehmung in der Alten Welt.* Frankfurt am Mein, Verlag Antike, pp. 108–175.

LEMAIRE, A. 2000. "Les 'Hyksos' et les débuts de l'écriture alphabétique au Proche-Orient". In: R. VIERS (ed.), *Des signes pictographiques à l'alphabet. La communication écrite en Méditerranée.* Paris-Niza, Édtions Karthala et Association Alphabets, pp. 103–133.

LICHTHEIM, M. 1978. *Ancient Egyptian Literature, Volume II: The New Kingdom.* Berkeley, CA, University of California Press.

MENDENHALL, G.E. 1985. *The Syllabic Inscriptions from Byblos.* Beirut, American University of Beirut.

MORENZ, L.D. 2011. *Die Genese der Alphabetschrift. Ein Markstein ägyptisch-kanaanäischer Kulturkontakte.* Würzburg, Ergon Verlag.

MORENZ, L.D. 2012. *Schriftentwicklung im Kulturkontakt. Das erste Jahrtausend der Alphabetschrift. Thot. Beiträge zur historischen Epistemologie und Medienarchäologie 1.* Berlin, EB-Verlag.

OREN, E.D. (ed.) 1997. *The Hyksos: New Historical and Archaeological Perspectives.* Philadelphia, PA, University Museum.

PETRIE, W.M.F. 1912. *The Formation of the Alphabet.* London, Macmillan.

PETRIE, W.M.F. 1921. "The Alphabet in the XIIth Dynasty". In: *Ancient Egypt* 6, pp. 1–3.

POWELL, B.B. 2006. *Writing: Theory and History of the Technology of Civilization.* Chichester, Wiley-Blackwell.

PUECH, É. 1986. "Origine de l'alphabet: documents en alphabet linéaire et cunéiforme du IIe millénaire". In: *Revue Biblique* 93/2, pp. 161–213.

SATZINGER, H. 2002. "Syllabic and Alphabetic Script, or the Egyptian Origin of the Alphabet". In: *Aegyptus* 82, pp. 15–26.

SAPIR-HEN, L. and E. BEN-YOSEF. 2014. "The Socioeconomic Status of Iron Age Metalworkers: Animal Economy in the 'Slaves' Hill', Timna, Israel". In: *Antiquity* 88, pp. 775–790.

SASS, B. 1988. *The Genesis of the Alphabet and its Development in the Second Millennium B.C.* Wiesbaden, Harrassowitz.

SASS, B. 1991. "The Beth Shemesh Tablet", In: *Ugarit Forschungen* 23, pp. 315–326.

SCHWARTZ, G. 2010. "Early Non-Cuneiform Writing? Third-Millennium BC Clay Cylinders from Umm el-Marra", In: *Opening the Tablet Box.* pp. 375–395. Leiden, Brill.

VIERS, R. (ed.) 2000. *Des signes pictographiques à l'alphabet. La communication écrite en Méditerranée. Actes du Colloque, 14 et 15 mai 1996.* Paris, Éditions Karthala et Association Alphabets.

WIMMER, S.J. 2010. "A Proto-Sinaitic Inscription in Timna/Israel: New Evidence on the Emergence of the Alphabet". In: *Journal of Ancient Egyptian Interconnections* 2/2.

Hypothetical Origins of Alphabet Letters

Egyptian hieroglyphs (F1 et cetera)
West Semitic acrophone (*'alp* et cetera)
Hebrew and Greek names of letters
See also **Fig. 1**: Chart of Alphabet Evolution

> ***'A** 'alp* (ox, bull) Alep (Alpha) F1
> ***B** bayt* (house) Bet (Beta) O1 O4
> ***G** gaml* (boomerang) Gimel (Gamma) T14
> ***D** dalt* (door) Dalet (Delta) O31
> ***H** hillul* (exultation, celebration) He (Epsilon) A28 A29 A32 (cp A8)
> ***W** waw* (hook, nail, peg) Waw (Upsilon)
> ***Ḏ** ḏayp* (eyebrow) D13
> ***Z** ziqq* (fetter) Zayin (Zeta)
> ***Ḥ** ḥaçir* (mansion) Het (Eta) O6
> ***Ḫ** ḫayṭ* (thread) Hbr *ḥuṭ* (thread, cord) V28
> ***Ṭ** ṭab* (good) Tet (Theta) F35
> ***Ẓ** ẓil* (shade) Hbr *çel* (shade, shadow) S35
> ***Y** yad* (hand, forearm) Yod (Iota) D36
> ***K** kapp* (palm, hand) *kippat* (palm branch) Kap (Kappa) (D46)
> ***L** lamd* (Hbr *malmad* ox-goad) Lamed (Lambda) S39 (crook) V1 (rope)?
> ***M** maym* (water) *mu* (water) Mem (Mu) N35
> ***N** naḥaš* (snake) Nun (Nu) I10 (cobra) I9 (viper)
> ***S** samk* (fish) K1 K3
> ***S** samk* (spinal column) Samek (Xi) R11
> ***'** 'ayin* (eye) Ayin (Omikron) D4
> ***Ġ** ġinab* (grape) M43
> ***P** pu* (mouth) Pe (Pi) D21
> ***Ṣ Ç** çirar* (bag) Çade/Sadey (San) V33
> ***Q** qaw* (cord, line) Qop (Qoppa) V24 V25
> ***R** ra'š* (head) Resh (Rho) D1
> ***Š** šamš* (sun) N6 N6b
> ***Ṯ** ṯad* (breast) Shin/Sin (Sigma)
> ***T** taw* (mark) Taw (Tau)

Fig. 1. Chart of Alphabet Evolution
(For an enlargement see
https://sites.google.com/site/collesseum/ABTEVNTBL.jpg)