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The Case for Euphratic

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ABSTRACT. It will be argued that the cuneiform writing system, the Sumerian and Akkadian lexicon, and the place names of Southern Mesopotamia preserve traces of an early Indo-European language, indeed the earliest by more than a millennium. Furthermore, this evidence is detailed and consistent enough to reconstruct a number of features of the proposed Indo-European language, Euphratic, and to sketch an outline of Euphratean cultural patterns. © *2008 Bull. Georg. Natl. Acad. Sci.*

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The Sumerian Question

For more than a century now a controversy has raged on and off around the question as to the ethnic identity of the population of Southern Mesopotamia in the 4th millennium B.C, a time when a revolutionary innovation, writing, was just beginning to have an impact on the city-states of the land we traditionally know as Sumer. In recent years, the debate has focused in particular on the language behind the first texts, the proto-cuneiform tablets of the Late Uruk period (ca. 3350-3100 B.C. in conventional, non-calibrated, dates). This is known as the Sumerian Question (Whittaker 2005).

The key issues of the Sumerian Question are:

❖ From what period on are Sumerians present in Southern Mesopotamia?

❖ Are they the original inhabitants of Southern Mesopotamia or did they enter an already populated land?

❖ If not autochthonous, which society (or societies) preceded them?

Landsberger's provocative (1944, rev. 1974) essay addressing these issues was the first to argue on linguistic grounds that the Sumerians were preceded by speakers of an unrelated, and non-Semitic, language. The consensus of opinion among Assyriologists then and now, however, holds that the Sumerians were the original population and points to continuity in the archaeological record to buttress this opinion. Nevertheless, archaeologists have long been aware that continuity says little about the actual nature of an ethnic landscape. Sumerians and Akkadians of the 3rd millennium B.C. shared Mesopotamian culture to such an extent that it has not been possible to distinguish the remains of the one from the other, except through their written records, so there is little reason to be confident that the situation was significantly different a millennium earlier.

Those such as Englund (1998: 81), the foremost expert on proto-cuneiform writing, who argue that the archaic texts of Uruk provide little or no evidence for the presence of the Sumerian language in the 4th millennium are largely ignored or dismissed without careful consideration and discussion of their arguments. Those who do take issue in print with the concept of a pre-Sumerian

population, such as Rubio (1999, 2005), tend to pour scorn on the very idea without proper - in particular, unemotional - discussion of the evidence. It is widely seen as an assault on the integrity, dignity and achievements of the Sumerians to entertain such notions.

And yet conservative Assyriologists who have lent their voices in dismissal of the Sumerian Question are inconsistent in their stance. Thus, Michalowski (2005: 178), Rubio (1999: 6), and Edzard (2003: 4) suggest that a number of place names and deity names may well be of non-Sumerian origin, failing to recognize what this implies about the ethnic landscape of Southern Mesopotamia at this early date. Indeed, the major flaw in the standard view (defended vehemently by e.g. Steiner 2005, Wilcke 2005) is the assumption that at the dawn of history Southern Mesopotamia was home to a pristine and pure population of Sumerians and that, if any evidence at all for the presence of the Sumerian language can be discerned in the archaic tablets of Uruk, all arguments for the presence of other languages and ethnic groups are demolished. This flies in the face of all that we know about the ethnic history of Mesopotamia down to the present day. The land has always been a crossroads of civilization and throughout the entire span of recorded history it has been home to a variety of ethnic groups living side by side. Why should it have been different in the 4th millennium?

Given the fact that Rubio himself, despite his polemical stance against any attempt to identify a non-Sumerian, non-Semitic element in early Mesopotamia, casts caution aside and declares "all" brewing terms in Sumerian to hail from such an element (1999: 6; no rationale or examples supplied), and the fact that the equally dismissive Michalowski insists that "most of the toponyms in Southern Mesopotamia are neither Sumerian nor Semitic" (2005: 178; here, too, without any rationale or examples), there must be some cause for doubt with regard to the supposed ethnic purity of 4th-millennium Sumer. Linguistic and epigraphic data can be expected to be crucial in resolving this ongoing controversy. It is, therefore, imperative that a discussion of the Sumerian Question not be avoided or rejected out of hand.

Like Landsberger (1944, 1974), who proposed a "Proto-Euphratic" substrate to explain morphologically opaque place names, deity names and technical terms, Oppenheim (1977 [1964]: 33-34) conjectured that

"a considerable section of the Sumerian vocabulary bearing on the material culture of Mesopotamia contains terms and designations that do not seem to be Sumerian and do not belong to any early Semitic (proto-Akkadian) language. These words may conceivably echo one or more much older language substrata and thus relate to the previous carriers of what we propose to term Euphrates Valley civilization."

In a series of recent articles (Whittaker 1998, 2001, 2004, 2004/2005, 2005), evidence based on both lexical and epigraphic data has been put forward suggesting that one major ethnic group contributing to the culture of the Uruk period was Indo-European in speech. This language, which manifests itself in all the areas suspected to have been influenced by a 'foreign' element, has been dubbed Euphratic, a term chosen for convenience to be similar to, but at the same time distinct from, those used by Landsberger and Oppenheim both in form and meaning. Traces of this language can be found preserved primarily in the technical and elite vocabulary of Sumerian and, to a lesser extent, Akkadian, and attest to a prolonged period of intensive contact. It is worth noting that two of the three leading theories on the location of the Indo-European 'homeland,' those of Gamkrelidze and Ivanov (1995 [1984]) and of Renfrew (1987), envision Indo-Europeans in a zone flanking the northern and western reaches of Northern Mesopotamia, namely Transcaucasia and Eastern Anatolia respectively.

Civil (1996; 2002) has argued that Sumerian is basically monosyllabic in its lexemic structure and demonstrated that many of the relatively few polysyllabic terms in Sumerian are of Akkadian, or other Semitic, origin. An examination of the proportion of polysyllabic lexemes in Sumerian literary texts (Whittaker 2005: 412-414) established that in one text from the mid-3rd millennium, the Ninmešarra of Enheduanna, only 54 polysyllabic lexemes out of a total of some 864 words occur. And if proper nouns and known Semitic loanwords are excluded, these 54 are reduced to a mere 28. Thus, Civil's contention seems valid. As we shall see, many of the remaining polysyllabic terms in Sumerian betray an Indo-European origin. But, if language contact between Sumerians and speakers of an Indo-European tongue can be detected, what evidence might be brought to bear on the question as to where this contact took place - within Mesopotamia, or in an outlying region traversed by the Sumerians on their passage into the Land of the Two Rivers? Fortunately, there are several factors conducive to a solution.

In his famous overview of Mesopotamian civilization, Oppenheim (1977 [1964], 49) already hinted at the extent to which an early non-Semitic population of Mesopotamia might have influenced Sumerian language, culture and society:

"It is quite likely that the Sumerians had adapted for their own use an already existing system and technique of writing. This seems to have been the creation of a lost and earlier, either native or alien, civilization, which may or may not

have had some relation to the foreign elements in the Sumerian vocabulary, the topographical names of the region, and, possibly, the names of the gods worshiped there. The Sumerians were only one of several ethnic groups ...”

A 'foreign' or 'alien' element in the writing system would indeed argue for influence on Sumerian culture either in Southern Mesopotamia itself or in a neighbouring region. Such an element in the place names of Sumer, however, would necessarily situate this influence directly in Southern Mesopotamia itself.

Euphratic values in the cuneiform writing system

Among the earliest signs in the proto-cuneiform inventory are a number that depict clearly recognizable items. Since many of the signs in the inventory can be identified on the basis of their position in sign lists and thematic ("lexical") lists copied and adapted from the Uruk period down to the end of Mesopotamian civilization, the main question revolves around the manner and sequence in which sign-value accretion takes place, that is, the question as to how individual signs acquire additional values over time. A primary value may name the item depicted or be connected to it semantically in some fashion. Further values may relate to this primary logographic value semantically or phonetically. However, in a good many instances there is no discernible relationship between the primary value or values in the Sumerian system of the 3rd millennium and the item depicted. In such cases the question arises as to whether an original logographic value has been replaced by one that is phonetically (but not semantically) similar to the original one, a pattern which we see when a writing system is borrowed by a new speech community, for example, in Mesopotamia by speakers of Akkadian. When systems with a high percentage of logographic signs are taken over and adapted, for example the Chinese system by a Japanese elite, the following phenomena can often be observed:

❖   a logographic value, that is, its linked phonetic and semantic values, in Language 1 are borrowed (as a loanword connected to writing) into the system of Language 2

❖   a logographic value equivalent to that in Language 1 is added from Language 2

❖   the pronunciation, that is, phonetic value only, of a logogram in Language 1 influences the selection of a new value or values in Language 2

❖   a phonetic, semantic, or logographic value of a sign in Language 1 is dropped or replaced by a new one in Language 2.

In the Japanese system, the high proportion of borrowed logographic values, alongside equivalent values from the language of the adopters, can be attributed in no small part to the powerful influence of writing as an instrument of prestige. In the Mesopotamian system, the same phenomena are at work. Not only has Akkadian borrowed a large number of phonetic, semantic, and logographic values (loanwords) from Sumerian, but also Sumerian itself would seem to have borrowed in its turn from a linguistically unrelated community, that of the Indo-European-speaking Euphrateans.

Among the earliest signs are a number of faunal logograms with values surprisingly similar to their Indo-European equivalents, beyond what might be expected from coincidence. These include:[1]

• **ku**$_6$ 'fish' : *(**d**^{h})**ǵ**^{h}uh- 'fish' (IEW 416-417; Mallory and Adams 2006: 147). See Kuara below at the discussion of place names for an adjective derived from this word.

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[1] Sumerian words and morphemes are cited as given in the Assyriological literature (see e.g. PSD, ePSD, MesZL, CAD, ETCSL). Directly represented in the syllabary used by Akkadian and Sumerian scribes to indicate Sumerian pronunciation are the vowels /a/, /e/, /i/, and /u/, which occur in both languages. Because the syllabary was largely developed by, or in close interaction with, speakers of Akkadian to meet the needs of the latter, only those phonemes in Sumerian that also occur in Akkadian are unambiguously represented in the system. Sumerologists have speculated that Sumerian may have had one or two further vowels. It has been suggested by Lieberman (1979), for example, that in one Old Babylonian tradition /o/ and /u/ may have been distinguished by the choice of **u** grapheme, but there seems to be no consistent pattern here. It has been argued elsewhere (Whittaker 1998, 2001, 2004, 2005) that **a** and **u** graphemes may both be used for /o/, and that, in the various scribal traditions, specific words may acquire standard spellings with either graphemic type. More telling are variant spellings with both **a** and **u** graphemes, as, for example in **la-ah** and **lu-uh** for /loh/ 'wash, cleanse.' On the basis of such variants as **iri/uru** ~ **iri**$_{11}$ ~ **uru**$_{11}$ 'city' some scholars have argued for an /ü/ phoneme as well. In the above-named articles I have proposed regarding a fluctuation between the choice of a, **u** and **i** grapheme as an indication of a more central vowel, /ə/, phonemically equivalent to the previously proposed /ü/. Thus, **sa/sa**$_5$ ~ **si-i** ~ **su**$_4$**/su-u** 'red, brown' suggest /sə/. In Massachusett, an Algonquian language of North America, the phoneme /ə/ could be written with any and all of the five English vowel graphemes, though with a preference for **u** and **i** (Goddard 1990: 228). A final note: in closed syllables there is no graphemic (and phonemic?) distinction between **e** and **i** in Sumerian.

• **peš** 'be wide' ≠ ***peǰsk-** (or ***peǰsk'-)** 'fish' (IEW 796; cf. EIEC 604; Mallory and Adams 2006: 146). The Sumerian value has no connection with the item depicted. Of interest is the fact that this, like many other parallels to Indo-European, betrays a strong lexical affinity to that area of the IE dialect continuum from which the Western (or Northwestern) languages emerged. See, for example, **nerah** below. By this, it is meant that in the dialect continuum of the so-called Indo-European homeland, the area from which Indo-European expanded in the 4th and 3rd millennia B.C., there was already a degree of at least lexical differentiation, such that a sub-area in or towards the west of this continuum already had many of the lexical features attributed to the later language families of the (North-) Western group.

• **hu** '(phonetic value)' : *$h_2au̯$-i- [2] 'bird' (IEW 86). The entry **u₁₁** 'bird' occurs once in a lexical list. Words borrowed at an early point, such as this sign value, tend over time to lose their 'laryngeal'-like **h** at morpheme boundaries, especially in initial position. Their structure often shows a high degree of assimilation to Sumerian phonotactics. Loans that are recent at the time of phonetic attestation tend more often to be characterized by polysyllabic structure, a lower degree of assimilation to Sumerian phonotactic patterns, and Neo-Sumerian **h** at word boundaries, but such terms exhibit erosion in the course of time. Thus, in the Old Sumerian (OS) of the Early Dynastic period and later we find **hirin**ₓ ~ **hu-ri₂-in** 'cedar' (< *h_1l-en- 'cedar, juniper'; IEW 302-303; Mallory and Adams 2006: 161; Whittaker 2004: 409), which develops into vowel-harmonized Neo-Sumerian (NS) NS **eren** ~ **erin** (Civil 1983: 3-4; cf. MSL 14 56). An **I** ~ **r** interchange, as here, is an occasional feature of Sumerian. To illustrate the effect of time on loan values, compare the process of reduction evident in the forms **šukud/r** > **šu-ku** > **šu-ug,** Akk. *šuku(s)su,* 'subsistence holding' (vowel-harmonized from IE *$seǵ^h$-os 'holding'). Moreover, the sign values **šakar, šahar,** and **šar/sar** of WRITE

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[2] Throughout this article all vowels will be rendered as 'coloured' by neighbouring laryngeals, that is, with the phonetic effect of these laryngeals visible, reflecting the situation in Late Proto-Indo-European. This is in contrast with usual Indo-Europeanist practice (an exception: IER, which usually leaves laryngeals unrepresented). Ablaut is obscured somewhat by this, but the result is closer to the original phonetic shape of the IE terms encountered by Sumerian. To find these words in the standard Indo-European dictionaries (IEW; IER), one should remove the laryngeals and lengthen any vowel immediately followed by a laryngeal.

(SAR; cf. IE ***sker-** 'cut') suggest a progressive assimilation of a **šk**-cluster via **šh** to **š**. Thus, **peš** (above) can be regarded as an old loan, whereas NS **iškila** 'shell; river pebble' (from ***skel-)** is recent.

A further indication that **hu** ~ Un originally meant 'bird' can be seen in its occurrence as the embed in Akk. ***huhäru** 'bird trap' (CAD 6 224), which must be a loan from Euphratic via Sumerian. Sum. ***huhar,** the intermediate source of the term, was lost and replaced by **har-mušen-na** (**har** 'ring,' **mušen** 'bird'), lit. 'ring/fitting (snare) of the bird.' Note that the required order of the latter's components in Sumerian contrasts with Indo-European compounding order. The ultimate Euphratic source was probably *$h_2au̯i$-h_2or-o-, lit. 'bird fittings (snare),' from IE *$h_2au̯i$- 'bird' and *h_2or-o-from *h_2ar- 'fit together' (cf. Sum. **har** 'ring; fitting (of a plough, etc.)'). Sum. **hu** ~ Un must come from an earlier ***hawi** in the same manner as NS **u₈** 'ewe' comes from OS **u₃-wi** (from IE *$h_3ou̯$-i- 'sheep').

• **lik** '(phonetic value)' : *$u̯lk^u$-o- 'wolf' (IEW 1178-1179; de Vaan 2008: 353). An orphaned phonetic value with no motivation in Sumerian. The sign is the logogram for DOG (Sum. **ur;** cf. **ur-bar-ra** 'wolf,' lit. 'outer dog'). In the Sumerian cryptography known as UD.GAL.NUN the sign KU substitutes for DOG (Krebernik 1998: 300; cf. *$cWö(n)$ 'dog').

• **lib** ~ **lub** '(phonetic value)' : *$u̯lp$-eh1 (or ***WLp-i-)** 'fox' (IEW 1179; de Vaan 2008: 353, 688). Again a phonetic value with no motivation in Sumerian. The sign is the logogram for FOX (Sum. **ka₅** 'fox').

Further faunal names are:

• **irib₂** '(unidentified animal listed right after a series of words for the ewe)' (Gong 1993: 21) : *$h_1éri$-b^ho- 'ram; kid' (IEW 326). Cf. **eštub** from *h_1r-s-n-b^hó- below.

• **sah₂** ~ **šah** 'pig' : *$s(e)uh$- 'pig' (IEW 1038-1039; de Vaan 2008: 603). The vocalism is difficult; derivation from the expected IE ***suh-** should lead to Sum. ***suh.** If the Sum. c is original, it must come from an earlier **š** before e. Alternatively, if the variant with **š** is late, **sah** may represent */soh/* or */səh/* with vowel harmony from a following, now lost, final vowel (depending on the case suffix of the borrowed form).

• **gilim** ~ **gilin** ~ **kilim** 'mongoose,' OS 'rat' (Ebla) : *glh-i-m (acc.) 'mouse or weasel sp.' (IEW 367; de Vaan 2008: 264; cf. Lat. *glīs* 'dormouse,' Greek *galéē*

'weasel,' Skt. *giri-* 'mouse'). The Sum. term, written with the RAT logogram, occurs compounded with **nin** 'lady' in the name of a deity. Note that in Indo-European languages the weasel is sometimes similarly named, as, for example, in Italian *donnola* 'weasel,' lit. 'little lady.'

• **hurin** '(myth.) eagle' : $*h_3or$-$(e)n$- 'eagle' (IEW 325-326; Kloekhorst 2008: 301-302; Mallory and Adams 2006: 143-144). Both this word and the term for 'cedar' are written in Old Sumerian with initial **h,** later without.

• **nerah ~ nirah,** ES **cerah** 'snake, adder' : $*neh_1$-tr-ah_2 'snake, adder; Nerah (snake deity)' (IEW 767; de Vaan 2008: 402). The correspondence of Emegir (EG, the main dialect) **n** to Emesal (ES, a prominent sociolect and literary dialect; see Whittaker 2002) **š** indicates palatalization before */e/.*

• **durah** 'fallow deer (Civil)' or 'ibex' : $*(d)i̯ork$-ah_2 'deer sp.' or 'gazelle' (cf. IEW 513; Schrijver 1995: 61). The initial dental cluster may be reflected in the Greek forms *zorks* and *zorkás,* which, however, can come from either *di̯* or *i̯.* Alternatively, one might reconstruct Euphratic $*dork$-ah_2 as a variant of $*i̯ork$-ah_2 (the latter found only in Celtic) influenced by the verb *derk'*- 'see, look, gaze' (LIV 122), an explanation that has been offered independently for Greek variants *dorks, dorkás,* etc. (cf. the English expression 'doe-eyed'). For a fuller list of *-ah_2*-stems appearing as loans in Sumerian see below.

A well-known faunal sign with no obvious resemblance to the animal it names is:

• **u₈, us₅,** OS **u₃-wi** 'ewe' (Ebla) : $*h_3o\underset{\cdot}{u}$-i-s 'sheep' (IEW 784; see Kloekhorst 337-338 for the identification of the IE laryngeal as h_3). The form with final **s** occurs only in the NS compound **usduha** 'sheep and goats,' where it is non-final. Except in words with the final sequence **sis,** a conservative or perhaps assimilated variant of **zir,** IE final *s* regularly becomes Sum. **d/r** where retained.

The OX sign **(GUD)** is a prime example of a multivalent sign with values only partially understandable in connection with Sumerian. Among these are logographic **gud** 'bovine, ox' and **eštub** 'carp,' and the following unglossed values apparently lacking Sumerian motivation: **gara₄, gugarid, gidim ~ gudma ~ gadma, dipar(a) ~ dapar** (SG: 477-478). If we examine these in the light of Indo-European, a pattern can be discerned that is obscured in the Sumerian system:

• **gud** 'ox, bull' : $*g^u\bar{o}\underset{\cdot}{u}$-$s$ 'bovine,' with regular correspondence of **d/r** to IE s in final position (IEW 482-483).

• **gara₄** '(phonetic value)' : $*g^uo\underset{\cdot}{u}$-$ró$- 'bovine; (by extension:) shining, reddish, etc.' (cf. IEW 482-483; attested in Indo-Iranian). This is probably related to the second element in **Indag(a)ra,** wr. **GUD** and **NINDA₂xGUD,** the name of the bovine son of the moon god.

• **eštub ~ aštub** 'carp' (wr. BOVINE+FISH, **GUD^{ku6}**), Akk. *ersuppu ~ arsuppu* 'carp' : $*h_1\underset{\cdot}{r}$-s-$\underset{\circ}{n}$-$b^hó$- 'steer' (cf. Skt. *r̥sabhás* 'steer'; IEW 336-337). This is one of many fish species named in Sumerian after an animal (on the basis of some characteristic of the latter).

The following are preceded by the DIVINE classifier but unglossed:

• **gugarid** : $*g^uo\underset{\cdot}{u}$-$k^{(u)}ol$-i-s 'herdsman' (cf. IEW 483). The Akkadian rendition of **gugarid** is *gugalita*[3] (MSL 15 34), which preserves the original liquid. For the suffix on $*g^uou$-$k^{(u)}ol$-i-s see Schrijver (1995: 266-267).

• **gidim ~ gudma ~ gadma** : $*(d)k'\underset{\circ}{m}tom$-$g^u\underset{\cdot}{u}$-$ah_2$- 'sacrifice of a hundred oxen' (IEW 483). The Sum. forms represent /gaðəma/, with vowel harmony from an earlier $*/(də)g\acute{ə}doma/$.

• **dipar(a) ~ dapar** : $*di(h)p$-ro-, $*di(h)p$-rah_2- 'sacrificial animal; cattle' (IEW 222)

A further sign of interest is EYE **(IGI).** Its primary logographic value in Emegir is **igi** 'eye(s), face, front,' corresponding to **ibi** (i-bi₂) in the Emesal dialect. It has long been recognized by Sumerologists that the **g - b** interchange, both between dialects and within Emegir, reflects a labiovelar or perhaps a *gb* coarticulation (Civil 1973). A curious aspect of this sign is that it sometimes occurs as the first element in a sign group representing words unrelated semantically to its own domain. One such example is the group EYE+PEG/NAIL **(IGI.GAG)** used for a series of sharp or tapering objects. There is no obvious relationship, phonetic or semantic, between the Sumerian word for 'eye' and any of the values in this group. If, however, we replace the Sumerian value with the Indo-European word for the same, $*h_3ok^u$-s 'eye, face,' $*h_3ok^u$-$ih1$ (dual) 'eyes,' we arrive at a phonetic shape that can be related to one of the items in the group. The logographic values are:

• **ubri(m)** 'lance, spear' : $*h_2oc(u)$-ri-m (acc.) 'sharp

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[3] The Akkadian version, not published until 2004, was unknown to me when I first proposed this equation with Indo-European three years earlier (Whittaker 2001: 43, fn. 40; see also 2004: 391).

point, sharp edge' (IEW 18-22)

• **šukur** 'lance, spear' : *sek-uh-r- 'axe' < *sek- 'cut' (IEW 895-896). The Sum. form with initial c shows palatalization before /e/ in an earlier */śekur/, prior to the effect of vowel harmony on the first syllable.

• **dal(l)a₂** 'thorn, pin, needle' : *d^holg-o- 'thorn, pin, needle' (IEW 247) with regular Sum. reduction (or assimilation) of a medial liquid + stop cluster to the liquid.

By combining EYE as a phonetic indicator with PEG/NAIL, a semantic indicator (or classifier), it was possible to represent a term for 'lance' unambiguously. Here, as throughout the cuneiform system, further values have been added over time, some for phonetic reasons, others, as in the case of **šukur** and **dala2** (joining **ubrim),** on semantic grounds. Unfortunately, no concerted attempt has yet been made in Assyriology to work out the diachronic relationships among the values of a sign or sign group.

Behind the sign group EYE+TABLET **(IGI.DUB)** we find a possible compound:

• **agrig,** a pre-form of which was borrowed into Akk. as *abarakku,* 'steward, house- keeper (of a temple or palace)' : *h_3ok^ui-$h_3reĝ$- (or *h_3ok^uo-$h_3reĝ$-) 'one who directs the eye, overseer' (IEW 775-777, 854-857). The compound is not attested in Indo-European, although other constructions based on 'eye' occur with the meaning 'overseer.'

The sign group EYE+POLE/PLANT **(IGI.DIM)** indicates an additional value of EYE, *h_2ant-s 'front; forehead,' employed as a phonetic indicator in:

• **henzir** 'infant, baby; (low social class)' : *h_2ns-i-s < *h_2ms-i-s 'offspring' (cf. Luw. *hamsa/i*- 'grandchild' < *h_2ms-$ó$-s; Kloekhorst 2008: 323-324). Note that a parallel form, **ganzir** 'entrance to the underworld' (cf. *$ĝ^han$-os, *$ĝ^han$-es-os 'yawning gap'; IEW 411; and perhaps also **ganzir₂** 'flame'[4] < *$ĝ^hlan$-s- 'spark'; IEW 429-434) has a variant, **gansis,** preserving the final s, which after Old Sumerian becomes, as a rule, **d/r** when final. Thus, we may suspect a development **henzir** /hənzir/ < *hensis /hənsis/.

A rare use of the sign group EYE + PEG/NAIL **(IGI.GAG)** in place of the usual GRAIN + PEG/NAIL **(ŠE.GAG)** provides one more example of *h_2ant-, *h_2nt- as a phonetic indicator:

• **hanbur**ₓ ~ **henbur**ₓ '(green) shoot, stalk; growth of rushes' : *h_2and^h-r 'flower, plant' (cf. IEW 40-41). The presumed heteroclitic noun in Euphratic corresponds to

an s-stem in Sanskrit and Greek. The **a** of the first syllable is attested also in the Akkadian loan from Sumerian, *habburu,* while the Sum. variants **henbur**ₓ and, once, **hubur** indicate the effects of the pervasive tendency towards vowel harmony, i.e. /hanbər/ to /hənbər/. As for the shift from a dental to labial stop before final /r̥/, compare **tibir** 'hand, cupped hand' <*d^hen-r 'palm of the hand' (IEW 249; a special term beside normal Sum. **šu** 'hand'), and **ubur** 'udder, teat; breast' < *$h_1(o)uh$-d^h-r 'udder' (IEW 347; de Vaan 2008: 636 on Lat. *ūber).*

A derivative of the EYE sign, the so-called *gunû* (hatched) variant **SIG₇**, has, among other things, the values **igi₂, sig₇ ~ seg₇,** and **ugur₂ ~ ukur₅**. The second value, used for Sum. **sig₇** '(a class of worker),' is reminiscent of IE *sek^u- 'follow; see (i.e. follow with the eyes).' The third value is again suggestive of *h_3ok^u-:

• **igi₂** 'eye(s), face' (as above for IGI) : *h_3ok^u- 'eye,' *h_3ok^u-ih_1 (du.) 'eyes'[5] (IEW 775-777)

• **sig₇ ~ seg₇** (phon. value) : *sek^u- 'follow; see (follow with the eyes)' (IEW 897-898)

• **ugur₂ ~ ukur₅** '(a pot)' : *$h_2óuk^u$-r, *$h_2úk^u$-n-es 'cooking pot' (IEW 88). The Euphratic heteroclitic noun corresponds to n-stem nouns in other IE languages.

• **samag₆ ~ simig₆ ~ sumug₆** 'wart, mole, birthmark' : *smh_1-$tlah_2$ 'smear, spot' (cf. Lat. *macula* 'stain, spot'; or from an extended root *$smeih_1k$-, *$smeih1g$-; IEW 966-967; de Vaan 2008: 357-358). The Sumerian variants indicate a pronunciation /samək/ or /saməg/.

The sign group EYE+FORM **(SIG₇.ALAN)** delivers two further examples:

• **uktin** 'appearance, form, facial features' : *h_3ok^u-ti-m (acc.) 'appearance, sight, expression' (IEW 775-777)

• **ulutim₂ ~ ulutin₂** 'appearance, form, facial features' : *$ueÍ$-ti-m (acc.) 'appearance, facial features' (IEW 1136-1137; LIV 675). This term is parallel to **ulutim ~ ulutin, ES ilkiden,** 'written notice, notification of intentions' < *$ueÍh_1$-ti-m (acc.) 'wish(es)' (IEW 1137-1138; LIV 677-678). Note that in the latter instance the laryngeal is indirectly attested in the velar of the ES form.

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[4] A semantic correlation between **ganzir₂** 'flame' and **ganzir** 'entrance to the underworld' has been suggested by Veldhuis (2003: 3, see also footnotes 5 and 11), who regards both as nuances of a single term.

[5] Possibly a vowel-harmonized taboo loan. Cf. **tibir** 'hand, cupped hand' < *d^hen-r 'palm of the hand'; **ubur** 'udder; teat; breast' < *$h_1(o)uhd^h$-r 'udder'; **arhuš** 'womb; compassion' < *$ursh$-os- 'breast' (IEW 1165; Mayrhofer 2005: 71, 89). Given the final c, **arhuš** must come from a non-neuter stem, unlike its Indic cognate. Its semantics ('breast' > 'womb' as a source of compassion) can be compared with a development in Romance: Lat. *sinus* 'fold, inlet; lap; breast, bosom' > Fr. *sein* 'breast, bosom; womb.'

Feminine gender in Euphratic

Among the Indo-European loans in Sumerian are several sets with well-known derivational suffixes, such as -ti- above. Evidence for inflection, indeed for masculine and neuter gender, are found in adjectives and nouns ending in d/r from IE -s (nom. masc.) and in am/b ~ um/b from -om (nom./acc. neuter, or acc. masc.). These have been discussed elsewhere (Whittaker 2004). Of greater interest are the cases in which the suffix -ah$_2$, attested but only indirectly in Anatolian, occurs. A selection of these terms follows (see also **nerah** and **durah,** discussed above). The first item, a colour term, provides clear evidence that -ah$_2$ was already a marker of the feminine gender in Euphratic, since adjectives agree with nouns:

• **dara(h)$_4$** 'dark-coloured, dark red' : *d^horg-ah$_2$ 'dark-coloured, red' (IEW 251-252). This is an important colour term (also used for cows) in the archaic texts of Uruk (Green and Nissen 1987: 185). An OS variant from Ebla, **de$_3$-ri-hum** suggests an underlying *d^herg-ih$_2$ (Steinkeller 1989: 3; CAD 3 74). The reduction of the liquid + stop cluster is regular. For further examples compare the following -ah$_2$-stems.

Another colour term was **huc** ~ ruc, Akk. *huššû ~ ruššû,* 'reddish, ruddy; furious, angry' from *$h_1$rusto- (< *$h_1$rud^h-to-) 'red, ruddy' (IEW 872-873; cf. de Vaan 2008: 515, 525, 528; IER 71). The latter term in Indo-European probably relates to the ruddy colour of copper ore (cf. Early Dynastic **hašum,** glossed 'ore?' in the ePSD, < *h_2aị-s-om 'copper' with *ịs* becoming Sum. š; the IE s-stem neuter has been rebuilt in Euphratic on the analogy of *$h_2$aus-om 'gold' and *$h_2$arǵ-n̥t-om 'silver'; IEW 15-16; Mallory and Adams 2006: 241-242; de Vaan 2008: 27-28). It remains to be seen whether Sum. **urud,** Early Dynastic **a-ru$_{12}$-da,** 'copper' derives from IE *$h_1$rud^h -'ruddy' (rather than the reverse as occasionally suggested). Given the Akkadian equivalent, *werium* (with Akk. -um) 'copper,' it seems possible that both derive independently (with vowel harmony in the Sumerian) from an IE *ụeịh$_1$-r-ịo-s 'wire' (cf. IER 96), related to Celtic and Germanic terms for the same.

• **larah** '(part of yoke harnessing of plough)' : *lorg-ah$_2$ 'club; (wagon) shaft, thill' (IEW 691-692). The Sumerian term can be preceded by the WOOD classifier and occurs parallel to Akk. *serdû* 'pole.' It appears to designate the composite upper and lower beam-sections of an ard, or sliding plough (cf. Potts 1997: 75-76). IE *lorg-, surviving only in Celtic (as an -ah$_2$-stem) and in Germanic, designates a kind of club, cudgel or pole, but note Breton *lorch'enn* 'shaft of a wagon, thill.'

• **larah** 'narrowness, dire straits, esp. in childbirth' : *lord-ah$_2$ 'bent forwards' (IEW 679; cf. *lord-sko- 'curva-

ture of limbs; back spasms')

• **zarah** 'grief, worry; dirge; vulva; eczema' : *surg^h-ah$_2$ 'grief, worry; illness' (IEW 1051)

• **zarah** 'stork' : *storg-(ah$_2$) 'stork' (IEW 1023; Mallory and Adams 2006: 145). An alternative reconstruction, *sr̥g-(ah$_2$) (Witczak 1991: 106-107), is less attractive because of the non-vocalization of the syllabic resonant before the medial stop.

• **sadah** 'illness' : *sah$_2$i-t-ah$_2$ 'pain, illness' (IEW 877; Mallory and Adams 2006: 193, 195-196; Kloekhorst 2008: 692-694; de Vaan 2008: 534)

• **kusah** '(myth.) bison' : *$h_2$us-r-ah$_2$ 'dawn-red cow (also myth.)' (IEW 86). This newly published Sum. term (MSL 15 188) is undoubtedly the equivalent of Akk. *kusarakku ~ kusarikku ~ husarikku ~ kušarihhu* '(myth.) bison,' an independent loan (with Semitic -u) from Euphratic, perhaps reflecting variants in both -ah$_2$ and -ih$_2$. Lieberman once listed it among a number of terms that, in his opinion, "simply do not look like native Akkadian" (1977: 16 fn. 38). Given the similarities between the Sumerian and Vedic mythological associations of bovines, it need not be assumed that the semantic extension of a term for 'dawn-red' to name bovines is a post-IE development. The alternation **k ~ h,** corresponding to h$_2$, occurs occasionally in both Sumerian and Akkadian. A similar alternation **g ~ h** corresponds to h$_3$. Another one of Lieberman's terms is **elumakku ~ elimakku ~ elamahhu** '(a precious wood; tree name)' (1977: 16 fn. 38), comparable to IE *$h_1$elm-, *h_1l̥m- 'elm' (cf. IEW 302-303; de Vaan 2008: 637).

• **emerah** 'bowl for storing and serving liquids' (CAD 8 612) : *$h_2$amhe-tlah$_2$ 'drinking vessel(s)' <*$h_2$amh- 'pour' (or *$h_2$amh$_3$- 'grip'; LIV265-266; cf. Mayrhofer 2005: 20). The initial Sum. vowel has been harmonized to the following **e.**

• **nitah** 'male, man' : *h_2nR-t-ah$_2$ 'manliness, virility' (IEW 765). The Sumerian reflects regular /nøtah/.

An entire word family based, like the preceding word, on *$h_2$ner- 'man; hero' appears to have been borrowed into Sumerian. In addition to *$h_2$nr̥-t-ah$_2$ (above), this consists of:

• **ner ~ nir,** ES **šer,** 'lord, prince; hero' (wr. NOBLE/NOBLE=PRINCE, **NUN/ NUN=NIR**) : *h_2nēr 'man; hero' (IEW 765). The ES form shows regular palatalization of Sum. **n** before **e.** Cf. **nerah, ES šerah,** 'snake, adder.'

• **ner ~ nir** 'authority, trust; confidence' (Thomsen 1984: 305; Hayes 1990: 212) :*$h_2$ner-tú- 'charismatic power' (IEW 765)

• **ner ~ nir** 'princely' (cf. also the phonetic value **nira** of **PRINCE, NIR) :** *$h_2$ner-o- ' strong' (de Vaan 2008: 406-407)

• **nur ~ nara$_x$ ~ nar$_3$** '(phonetic values)' of PRINCE **(NIR)** (MesZL 140): *$h_2$nor-o-* 'charismatic, strong' (IEW 765)

• **lirum** (wr. HAND+STRONG, **ŠU.KAL) ~ ner$_x$ (wr.** NOBLExNOBLE, **NUNxNUN)** 'strength, force; strong, powerful, mighty, great; resistant, obstinate, quarrelsome; a noble; (crook of the) arm; wrestler' (ePSD; Gong 1993: 43) : *$h_2$ner-o-m* 'sth. virile, strong, charismatic' (IEW 765; cf. Lat. *neriōsus* 'strong, resistant,' both of which meanings are found in the Sum.). The adjectival values relate to the homophonous IE adjective *$h_2$ner-o-*. Sumerian seems to have borrowed two unrelated IE terms which fell together as */nerom/:* this word and the term for 'testicle' (from *neg^{uh}-ro-m* (acc.) 'kidney; testicle'). To avoid awkward associations, each was apparently altered, the first by replacing **n** with **l**, for which there are a number of prominent parallels in Sumerian; the second by replacing it with its ES equivalent, **šer** (from */śerom/),* yielding EG **sirum, siru, šir** (for */śerom, śero, śer/).* An original Sum. */nerom/,* vowel- harmonized to */norom/,* is suggested by the otherwise unmotivated Akkadian value *nūrum* 'light' of the TESTICLE sign).

• **šunir** '(divine emblem)' : *$h1su$-$h2nér$-o-* 'mighty; fortunate' (Fortson 2004: 71, 189). The expression **tukul šunir** 'divine emblem' is composed of **tukul** 'tool; weapon; cudgel' and an adjectival **šunir,** which usually stands on its own in the meaning 'divine emblem.' Such emblems were symbols of divine power and could take the form of weapons. The phrase appears to derive from an IE *tuk-lo- h1su-h2nér-o-* 'weapon imbued with charisma' or the like. For *tuk-lo-* cf. Greek *túkos* 'hammer; chisel; battle-axe' (IEW 1032). The **š** of **šunir** reflects IE *h_1s* (init. *s* would yield **s**). The NOBLE **(NUN)** sign has an orphaned phonetic value which, together with PAUPER **(UKUR$_3$),** provides an interesting pair of Euphratic antonyms:

• **kurud** '(phonetic value of NOBLE)' : *k'uh_2-ro-s* 'powerful' (IEW 592-594)

• **ukur$_3$** 'poor; pauper' : *n̥-k'uh_2-ro-* 'powerless' (IEW 757-758, 592-594)

Place names

As we have seen, Michalowski (2005: 178) has recently declared that "most of the toponyms in Southern Mesopotamia are neither Sumerian nor Semitic." Unfortunately, he neglects to state his criteria and supplies no hint as to the toponyms he has in mind. Can, however, examples be found? The following parallels (a selection only) are suggestive:

• **Kalama,** ES **kanaĝ,** 'the land (of Sumer)' : *k'olh_2-m-* 'reed,' for 'reedlands'? (IEW 612; deVaan 2008: 150)

• **Nibru** (wr. LORD+WIND+PLACE, **EN.LIL.KI)** 'Nippur' : *nebh-ró-* 'cloudy' (IEW 315-316). Nippur was the seat of Enlil, god of wind and weather, who was likened to a **dungu(d) dirig-ga** 'drifting cloud' (ETCSL 4.05.1, l. 99; cf. *d^hng^u-o-s* 'fog,' *d^hreǵh-* 'drift, draw'; IEW 248, 257, 273; LIV 154; Kloekhorst 2008: 829).

• **Eridugu ~ Eridug** (wr. CITY+SWEET, **URU/ IRI.DUG3U)** 'Eridu,' lit. 'good/sweet city' : *$u̯r$-i į-ah$_2$ d̨k-ú-* (or *dluk-ú-)* 'sweet (hill-)town' (IEW 1152, 222). The noun is related to Thracian *bría* 'city, hill-town,' West Tocharian *rīye* 'city' (Mallory and Adams 2006: 221).

• **Kuara** (wr. FISH+WATER+PLACE, **HA.A.KI)** 'Kuara' : *$(d^h)ǵ^h u̯ ah_2$-ró-* 'fishy' (cf. IEW 416-417; Greek *ikhthuērós* 'fishy'). In the Sumerian King List, the god Dumuzid is described as a fisherman coming from Kuara (Sjöberg and Bergmann 1969: 81).

• **Karkara ~ Kakru ~ Kakra** (wr. STORM+PLACE, **IM.KI)** 'Karkara' : *$k^u erk^u$-ró-* (< *$perk^u$-ró-) 'pertaining to the oak (assoc. with lightning)' (cf. IEW 822-823). As in Celtic, a sequence *$p...k^u$* develops into *$k^u...k^u$* in Euphratic. This place name is unusual in attesting to -ró- rather than the expected -u- if the term indeed derives from *$perk^u$- u-* 'oak,' the tree of the thunder god (for a possible *$Perk^u$ú-no-s;* see EIEC 407, 582- 583; West 2007: 238-247). The Sumerian suggests a development */kerkəro/ > NS /kərkəro/ > /kəkro/.* Karkara is the seat of the storm god **Iškur** (from *sk'uh_1-ró-* 'shower'; IEW 597). The typical weapon of the Indo-European storm god is the *$u̯oǵ$-ró-* (cf. IEW 1117-1118; LIV 660), which becomes Sum. **ugur,** a divine weapon sometimes described as a mace, sometimes a sword. For the latter equation, cf. *h_2aǵ ro-* 'pasture, field' (IEW 6), which develops into vowel-harmonized Sum. **agar ~ ugur$_2$** 'field.'

• **Ararma ~ -am,** Akk. *Larsam* (wr. SHINING+ABODE +PLACE, **UD.UNUG.KI)** 'Larsa' : *h_2r̥ǵ-ró-m* 'shining white' (IEW 64). Related to this is **ararim$_x$ ~ ururim (wr.** CITYxSHINING, **URUxUD)**'(?),' from *h_2r̥ǵ-r-ih_2-m* (acc.), the feminine counterpart.

• **Usab ~ Adab ~ Arab,** Akk. *Usab ~ Utab,* (wr. SHINING+NOBLE+PLACE, **UD.NUN.KI)** 'Adab' : *$h_2$us-ró-m* 'of the sunrise' (IEW 86). The emblem or standard of Adab was the solar disk (cf. Jacobsen 1967: 101).

• **Tintir** (wr. GATE+GOD+PLACE, **KA$_2$.DINGIR.KI)** 'Babylon' : *dei̯u-ōm* d^{h}WR- (or *d^hur-i-)* 'gate of the gods' (IEW 278-279). The Akkadian equivalent, *Bābilu/i,* is composed of *bāb* 'gate' and *ilu* 'god' ~ *ili* 'of the god,' a slavish rendition of the signs employed for the toponym.

• **Lagaš (wr.** RAVEN+CITY-la, **CIR.BUR.KI-la)** 'Lagash' : *leg^h-os-* 'storehouse' (IEW 658-659). The city name is translated into Akk. as *na(k)kamtu* 'storehouse (ePSD; CAD 1 1/I: 182). This s-stem appears not to have

been neuter in Euphratic: c indicates that IE **š** was non-final. The first Sum. vowel is the result of vowel harmony. Jacobsen (1967: 103) argues that the emblem ("clan-symbol," "totem") of Lagash was the raven. Cf. Gaulish *loũgos* 'raven' < *$leug$- 'dark' (IEW 686).

Grammatical features

A number of grammatical features are reconstructable for Euphratic. Of particular interest are the Akkadian prepositions of Presargonic (ca. 2600-2350 B.C.) and Sargonic (ca. 2350-2150 B.C.) date:

   • **in** 'in, to; from' (Presarg., Sarg.): *en 'in' (IEW 311-312)
   • **ana** 'to, for, at, according to' (Sarg.) : *ana ~ *an 'on, up (onto); according to' (IEW 39-40)

In Presargonic texts the preposition **in** is readily identifiable because it is written phonetically with the syllable sign **in** (Krebernik 1998: 270), rather than with a logogram. Later, in Ur III times (ca. 2150-2000 B.C.), it becomes *ina* on the analogy of *ana* (CAD 7 141-142). Like its Greek counterpart *aná* 'on, upon, up (along); for (the price of),' the preposition *ana* (CAD 1/II 100-101) is also used in reference to rates and prices. These two prepositions are the only words in Old Akkadian that permit final short *a* (cf. Huehnergard 1998: 591, 593), an indication that they may be of foreign origin. Neither has Semitic cognates.

In Sumerian we have:

   • **tukum** 'immediately, in a moment; as soon as; if': *to-kom, lit. 'with that' (cf. Hitt. *takkan* '(?),' *takku* 'if, when' <*to-kom, *to-kwe; Kloekhorst 2008: 432-433, 816). Such constructions occur widely in Indo-European (see esp. Wagner 1967; Eichner 1971). In English there is a parallel construction: *with that* 'thereupon; (obs.:) provided that, if'

   • **-PI** '(comitative postposition for 3rd pers. pl.)' : *$-b^hi$ '(instrumental pl. suffix).' In Old Sumerian economic texts **-PI** may occur in the so-called prefix chain of the verb in contexts where the comitative/instrumental postposition **-da** would otherwise be expected (Thomsen 1984: 225). This only happens in conjunction with the 3rd person plural. To date Sumerologists have failed to find a convincing explanation for this curious phenomenon, one that is all the more puzzling given the fact that postpositions like **-da** are immutable, lacking separate singular and plural forms. The solution seems to lie in perceiving the occasional use of **-PI** as a holdover from

Euphratic scribal conventions. Just as Akkadian and Hittite texts employ Sum. **-MEŠ** as a mere scribal convention (a Sumerogram) for the indication of a noun plural, it is probable that **-PI**, used originally in as yet unidentified Euphratic texts for the IE comitative/instrumental plural suffix *$-b^hi$, survived as an Old Sumerian device, a Euphratogram as it were, for the rendition of a comitative postposition attached to a 3rd person plural pronoun (see also Whittaker 2001: 24-25).

Euphratic society

Summing up: In the Late Uruk period, the reedlands (**kalama** < IE *$colh_2$-m- 'reed'; cf. **kilim** 'reed bundle') of multiethnic Southern Mesopotamia were home to an Indo-European-speaking people living in city-states (**uru/iri** < *$urii$-ah_2 'town') situated along rivers (**id$_2$(a)** < *$uedō(r)$ 'water'), streams (**uhrum** < *uh_1-ro-m 'river') and canals (**pa$_5$d** < *pnt- 'passage, way'), with nearby wetlands (**dagrim** < *$(s)tag$-ri-m (acc.) 'marsh'). At the top of the social pyramid stood a lord (**ner** < *$h_2nēr$ 'charismatic man; hero') functioning as city-state governor (OS **GAR(A).PA.TE.SI** < *$ǵ^hr̥d^hó$-pot-i-s 'lord of the enclosed settlement'). The community was sustained by teams of workers (**erin** < *uer-n- 'band of men/warriors') in an agricultural/pastoral economy. Domestic animals such as the ewe (OS **u$_3$-wi** < *h_3ou-i- 'sheep') and the pig (**sah** < *suh- 'pig') were kept. The ox (**gud** < *$g^uōu$-s 'bovine') was led by a rope (**saman/samun**, Akk. *šumma(n)nu*, 'lead-rope, tethering rope' < *$s(i)uh$-mn 'strap') into the field (**agar** < *$h_2aǵ$-ro- 'pasture, field'), where it pulled a plough (**apin** < *$u og^uh$ -ni- 'ploughshare'). Grain collected in stacks of sheaves (**k/garadin** < *$kr̥h_2t$-i-m (acc.) 'wickerwork; something intertwined') was ground into meal (**mel** ~ **milla** < *mel-uo- 'flour'). Wine (**idin/tin** < *uih_1-ti-m (acc.) 'vine') and barley beer (**kaš** < *$kuath_2$-so- 'fermented substance') were produced. Supernatural protection from the environment was sought from divine personifications of such beings and forces as the serpent (**nerah** < *neh_1-tr-ah_2 'snake') and storm (**iškur** < *$skuh_1$-ro- 'shower'). To protect the community from human foes, the army (**ugnim,**[6] Akk. *ummān-,* vowel-harmonized < *$h_2aǵ$-mn, *$h_2ǵ$-men- 'train, warband on the march') went to war (**gigam** < *g^urihg-ah_2-m (acc.) 'conflict, strife, war') armed with such weapons as the spear (**šukur** < *sek-uh-r- 'cutting instrument; axe') and the axe (OS **hazi** < *h_2ag-s-ih_2 'axe').

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[6] The phonetic spelling **ma-na-an-gu** 'my (**n-gu**) troops,' Akk. *um-ma-ni-ia*, for *$ugmina$-$g̃u$, in Sulgi's letter to Isbi-Erra about the purchase of grain, 1.11 (ETCSL no. 3.1.13.2), exhibits the expected sequence **m...n** found also in the Akk. loan. For the reversal of nasals in Sumerian, cf. also EG **min** = ES **nim** 'two'.

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ენათმეცნიერება & დამწერლობათმცოდნეობა

"ევფრატული" ენის შესახებ

გორდონ უიტტაკერი

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(წარმოდგენილია აკადემიკოს თ. გამყრელიძის მიერ)

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ABBREVIATIONS

EG: Emegir; ES: Emesal; IE: Indo-European; NS: Neo-Sumerian; OS: Old Sumerian CAD: Oppenheim, A. Leo et al. (eds.). 1956-. *The Assyrian Dictionary of the Oriental Institute of the University of Chicago.* Chicago: Oriental Institute / Glückstadt: J. J. Augustin Verlagsbuchhandlung.

EIEC: Mallory, James P. and Douglas Q. Adams (eds.). 1997. *Encyclopedia of Indo-European Culture.* London / Chicago: Fitzroy Dearborn Publishers.

ePSD: *Electronic Pennsylvania Sumerian Dictionary,* at http://psd.museum.upenn.edu/epsd/ ETCSL: *Electronic Text Corpus of Sumerian Literature,* at http://etcsl.orinst.ox.ac.uk/

IER: Watkins, Calvert. 2000. *The American Heritage Dictionary of Indo-European Roots.* 2nd edition. Boston / New York: Houghton Mifflin Company.

IEW: Pokorny, Julius. 1959. *Indogermanisches Etymologisches Wörterbuch.* 1. Bd. Bern: Francke Verlag.

LIV: Rix, Helmut et al. (eds.). 2001. *LIV: Lexikon der indogermanischen Verben. Die Wurzeln undihre Primärstammbildungen.* Wiesbaden: Dr. Ludwig Reichert Verlag.

MesZL: Borger, Rykle. 2003. *Mesopotamisches Zeichenlexikon.* Münster: Ugarit-Verlag.

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MSL 15: Civil, Miguel et al. (eds.). 2004. *Materials for the Sumerian Lexicon XV: The Series* DIRI = *(w)atru.* Rome: Pontificium Institutum Biblicum.

PSD: Sjöberg, Åke W. (ed.). 1984-. *The Sumerian Dictionary of the University Museum of the University of Pennsylvania.* Philadelphia: The Babylonian Section of the University Museum.

SG: Ellermeier, Friedrich. 1980. *Sumerisches Glossar. Bd. 1, Teil 1: Die Sumerischen Lautwerte. Lieferung 2: Nach Zeichennamen" und Keilschriftzeichen geordnete Lautwertlisten.* Nörten-Hardenberg: Selbstverlag Dr. Friedrich Ellermeier.

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