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A L'OCCASION DE SES SOIXANTE ANS

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ANCIENT METAL NAMES AND THE FIRST USE OF METAL

Abstract. – The paper reviews the conclusions which can be drawn from the analysis of early metal names concerning the earliest use and distribution of metals, in this case, copper and gold only.

This short congratulatory paper is not devoted to metallographical issues, but rather reviews the conclusions which can be drawn from the analysis of early metal names concerning the earliest use and distribution of metals. Of the three metals first used, namely copper, gold and silver, only the problems of copper and gold shall be addressed here.[1]

1. The word for gold in Sumerian is GUŠKIN, and ḫurāṣu in Akkadian (Ugaritic ḫrṣ, Old Hebrew ḥāruṣ/ḥārûṣ). The reconstructed Indo-European stem for gold **(a)u̯es(kʷʰ)-*, **(a)u̯es(-k)ʰ-*, **Hau̯-s-/*Hu̯-os-* is considered to be a derivative of the Sumerian GUŠKIN (although according to Diakonov the reading of the Sumerian ideogram for 'gold' – GUŠKIN – accepted until now is incorrect and the similarity with Indo-European derivatives is minimal);[2] Latin *ausum* < *aurum*, Prissian *ausis*, Lithuanian **auskas* < *áuksas*, Tokharian A *wäs*, B *yasa*, Armenian *(v)oski*. Since terms for metals and their products are notorious as loans, this word may have been a cultural loan word with other migratory terms of Sumerian origin. On the other hand, it is also possible that

[1] For silver see K. A. Yener, *The production, exchange and utilization of silver and lead in Ancient Anatolia*, Anatolica 10, 1983, 1–15; J. P. Mallory, M. E. Huld in der *Zeitschrift für vergl.* Sprachwissenschaft 97, 1984, 1–10; M. E. Huld in JIES 18 : 3–4, 1991, 409–410; M. van de Mieroop, *Gold offerings of Šulgi*, Orientalia 55, 1986, 137 sqq; etc.

[2] T. V. Gamkrelidze, V. V. Ivanov, *The Ancient Near East and the Indo-European question*, JIES 13: 1–2, 1985, 19; and *Indo-evropeiiski iazyk i indoevropeitsy*, Tbilisi, 1984, vol. II. 713–714; I. M. D'iakonov, *On the original home of the Speakers of Indo-European*, JIES 13:1–2, 1985, 134

it originally was a simple translation of Elamite *lan. sit(i)* "Gold": "andererseits könnte sumerisch Guškin (KUG. GI) 'Gold', d. i. wohl *kug. gin$_6$ 'echtes bzw. dauerhaftes (o. ä.) "Silber"', als Lehnübersetzung von elamisch *lan. sit*(i) 'Gold', d. i. wohl **lan(i). sit(i)* 'echtes bzw. dauerndes (o. ä.) "Silber", verstanden werden; eine Erklärung dafür wäre ein früher Import von Gold, das in Sumer nicht vorkommt, aus Elam."[3] As M. Huld pointed out recently, derivatives of a reconstructed PIE root **Aei(E)-es-* with the meaning *Cuprum* can be found in Germanic, Italic and Indoiranian dialects, but the root itself - - **Aei(E)*- - - is obscure.[4]

Another IE word for gold can be derived from the reconstructed stem *ĝ^{h}el-*, 'yellow': Old Indic *hiraṇya-*, Avestan *zaranya-*, Old Persian *daraniya-*, Gothic *gulp*, Old English *gold*, Old High German *gold*, Latvian *zèlts*, Lithuanian *želtas*, Old Church Slavic *zlato* 'gold'. The relationship of the two stems designating 'gold' to each other remains unknown; both are to be found in the *kentum* and *satem* languages.

Greek and, moreover, Protogreek are extremely interesting in this respect. In Protogreek the word for gold is not a derivative of Sumerian GUŠKIN or of *ĝ^{h}el-*, but χρῦσός that can be derived from the Semitic–Akkadian word ḫurāṣu; its early borrowing before LH III B is shown by *ku-ru-so (khrusós)* and *ki-to* (plural *ki-to-ne*) in Linear B. As O. Szemerényi remarks, "when a Greek word denotes an imported article, or plant, it is usually easy to decide the question of Semitic provenance. The word for gold (χρῦσός) ... presents no difficulty."[5] The fact that the Greeks called 'gold' *khrusós* does not indicate that they had no inkling of what it was when they came into contact with speakers of another language (surely after their arrival into Greece, and most probably they superimposed themselves on the speakers of this language) who did, and had used a Semitic word for gold. This unidentifiable language had borrowed this term from Near Eastern – Levantine Semitic sources between the appearance of the presently oldest gold in Mainland Greece (sporadic finds from Sesklo and Sitagroi[6]) and the arrivals of the Protogreeks into Greece. What is critical is not the mere fact of borrowing, for the Greeks coined a new term also in their usage of *khalkós* 'copper' instead of the inherited **ayes-/ayous-*, but rather the fact that there are common words for these materials in the reconstructed Indo–European vocabulary. The reason for such borrowings could have been that even if the Greeks had been familiar with these metals, they

[3] G. Steiner, *Sumerisch und Elamisch. Typologische Parallelen*, Acta Sumerologica 12, 1990, 144; cf. H. Waetzoldt, *Terminologie der Metalle in den Texten aus Ebla*. In Lingua di Ebla, ed. by L. Cagni. Napoli, 1981, 369–373.

[4] M. E. Huld in JIES 18: 3–4, 1991, 419.

[5] O. Szemerényi, *Trends and tasks in comparative philology*, London, 1962, 19; O. Szemerényi, *The origins of the Greek lexicon*: ex Oriente Lux. JHS 94, 1974, 144–157; E. Risch, *Die Ausbildung des Griechischen im 2. Jahrtausend v. Chr.* In Studien zur Ethnogenese, ed. by Rheinisch–Westf. Akad. d. Wiss. Opladen, 1985, 171; Y. Duhoux in Minos 23, 1988, 79.

[6] J. Makkay. *The most ancient gold and silver in Central and South-East Europe*, In Découverte du métal, ed. by J.–P. Mohen, Paris 1991, 119.

nonetheless adopted new words as technical terms. Since regarding the origins of the Protogreeks it is obvious that they had arrived from the northern areas of the Balkans, the best candidate can be found among Copper Age cultures of the Northern Balkans and the Southern Tisza valley from both the spatial and the temporal points of view. As I have pointed out recently, the most likely possibility is the late Bodrogkeresztúr–Salcuţa cultural group together with its Serbian equivalent, i. e. a given phase of the Bubanj Hum Ib + Šuplevec – Bakarno Gumno + Cernavoda I + Karamani + Galaţin development.[7] This circumstance definitely refers to the fact that the presently known oldest sources of copper ore in Europe, together with substantiated mining, can be found in Central Serbia (Bor–Majdanpek). The area is practically situated on the supposed route of the migrating Protogreeks. Protogreek tribes moving from the North to the South should have therefore had their own words both for gold (Vajska) and copper (Bor), in all probability of non-Semitic origin before their arrival into the neighbourhood of the Southernmost Balkans i. e. the place where borrowing from a Semitic stock was possible.

This issue can be approached from another aspect, too. If the Protogreeks had migrated to Greece from the North or the Northeast, i. e. from the Eastern and/or the Central Balkans, prior to their migration they had been the neighbours of some Iranian tribe or tribes during the 3rd mill. B. C. By this time gold was extensively used throughout all of South–East Europe, irrespective of whether the high dating of the Varna cemetery is accepted or the traditional chronological framework is used. Whichever variant is accepted, a few strange and curious conclusions present themselves. Regardless of whether or not the gold metallurgy of the KGK VI period (i. e. Varna cemetery and "contemporary" cultures) should be dated to the fifth, fourth or only third millennium B. C. it is nonetheless fairly certain that these KGK VI tribes did not speak a Semitic or a Sumerian tongue. The Protogreeks who lived in the vicinity or neighbourhood of these non-Semitic and non-Sumerian – Protothracian – peoples surely knew gold and copper metallurgy in the 3rd mill. B. C. (i. e. in the Copper Age). Even if the ancestors of the Protogreeks living in the vicinity of the Iranians had not become acquainted with gold and copper there and then (i. e. already in the Tripolye – Cucuteni period), they must have encountered gold and copper during their southward migration from the Black Sea area (or the Carpathian - - Danubian - - North Balkanic territory), the route of which led through the Eastern and/or Central Balkans. Moreover, they rejected both possibilities, and they took a word from another – Semitic – language at an unknown time (but surely before the 14th century B. C.).[8]

[7] For more details see J. Makkay. *Mycenaean burial sacrifices and the origins of the Protogreeks*, Atti del 2. Congresso Internazionale di Micenologia, Roma–Napoli 1991, in press.

[8] J. Makkay, *Cultural groups of SE–Europe in the Neolithic: the PIE homeland problem and the origins of the Protogreeks*, Annali del Dipartimento di Studi del Mondo Classico e del Mediterraneo Antico, Sezione linguistica 10, Napoli 1988, 132–133. It is more probable that they borrowed this word for gold (and also *khalkós* for copper) and the associated technology and

The lingustic evidence for timing is fairly clear and convincing. All the IE languages that contain the mentioned related names (excepting Greek) are not found in a geographical clump – as are also not those cultures that attest the knowledge of these metals. So we are left wondering whether it was truly the proto–Indo–European community that borrowed concept and words for gold (from Sumerian or Elamite or even Euphratic or Tigridian), or simply a group of linguistically related neighbours (i. e. IE dialects living in the neighbourhood of earliest gold-using societies) who did so. The archaeology now suggests the latter, that the Sumerian word GUŠKIN was borrowed at the beginning of the Late Neolithic, during the time when the slow spread of gold metallurgy had begun in Europe. This would seem to be after the primary breakup of the IE protolanguage, but before the Protogreek speakers had moved far from their latest protohabitat west of the Iranians. The simple fact that the Greeks called 'gold' *khrusós* in the 2nd mill. B. C does not indicate that they had not known this thing when they came in contact with speakers of another (Mediterranean) language who did, since gold had been widely used in SE Europe in the 3rd mill. B. C. "The mere fact of borrowing is not critical here, however, for the Greeks innovated also in using *khalkó* for inherited **ayos*,..."[9] If the KGK VI = Varna metallurgy were indeed the oldest gold metallurgy in the world the early IE dialects near to or neighbouring the Eastern Balkans - - IE dialects including Protogreek, Protothracian and Protophrygian, Old Iranian and probably also pre-Greek or Pelasgian in Mainland Greece - - would have had no need for borrowing Sumerian and Semitic words for gold (and also for copper, i. e. GUŠKIN and URUDU), but would have adopted or simply inherited the word for gold (and copper) used by the craftsmen of this "earliest" Varna metallurgy, whose language remains unknown except for the fact that it was neither Sumerian, nor Semitic.

2. As for copper, the vocabulary of copper metallurgy is poorly and controversially represented in the Indo-European dialects, and there are also remarkably few words for metal in the pre-Greek, i. e. Mediterranean languages (substrates).[10] The derivatives of two stems recur in the IE dialects (aside from the isolated Greek *khalkós*). The primary utilitarian metal: copper – **Haiso*, **aḷos*, **ayues-* would appear to be that ancestral to the series Sanskrit *ayas* 'metal, iron', Avestan *ayo, ayah-* 'bronze, metal?, Latin *aes* 'bronze' Old Norse *eir* 'bronze, copper', Gothic *aiz* 'copper', Old High German *ēr*, Anglo-Saxon ār, English *ore*. This stem only has cognates in three dialects, namely Latin, German and Indo-Iranian. Generally, the

knowhow from a pre-Greek but local language (Pelasgian) after their arrival into Greece because gold and copper were in use in Greece before their arrival in the last third of the third mill. B. C. Another compelling and inevitable conclusion is that the gold metallurgy noted at Varna is not the oldest one in the world.

[9] W. F. Wyatt. *The Indo-Europeanization of Greece*, In: Indo-European and Indo-Europeans, ed. by G. Cardona, H. M. Hoenigswald, A. Senn. Philadelphia 1970, 98.

[10] R. A. Crossland. *Indo-European origins: the linguistic evidence*, Past and Present 12, 1957, 36.

fundamental meaning of the word has been taken to indicate copper and/or metal (and probably also copper with natural admixtures or the alloy of copper with arsenic), and the meanings bronze and also iron have been regarded as later semantic developments.[11] Of course, the use and technique of bronze and iron was unknown to the speakers of the IE protolanguage.

A cognate of this stem is surprisingly missing from Greek, and Greek has *khalkós* 'red metal' instead. It can be an independent innovation of the Protogreek or a borrowing from an undetermined Mediterranean substrat. Similarly, Latin *cuprum* is a derivative of Latin *Cyprium* 'aes from Cyprus'.[12] In a Hurrian-Hittite bilingual text occurs a Hurrian word *kabali* as the translation of Sumerian URUDU 'copper'. Its root *kab/p* can be compared to the first syllable of *Kup-ro-s*, i. e. *kup-*, from **kup-ar-i* 'Cyprus', and the original root *kab-* can be probably considered a borrowing from an early Near Eastern substrat.[13]

A second IE word for copper (which seems to be younger that the *ayos* stem[14]) appears to be related to a reconstructed PIE root **reudh-* or **rudh-ró-s* 'red, copper, metal, ore, red ore'. It is so widely distributed among the IE dialects that it is likely to go back to the final phase of the IE dialect continuum: Vedic *rohitá-, lohitá-* 'reddish', Sanskrit *lohá-* 'copper or [red] iron, reddish metal', Iranian *rudhirá-* 'bloodred', Middle Persian *rōd* 'metal', Greek *eruthrós* 'red', Latin *roudus/rūdus* 'red metal, metal', *rōbus, ruber* 'red', Celtic and Old Irish *ruad, rud* 'red', Gothic *rud-u* 'red iron, ore', Old Church Slavic *ruda* 'ore, metal', etc.

F. Hommel was the first who as early as 1885 compared the reconstructed IE stem **reudh-*, i. e. its derivative Sanskrit *lohá-* to Sumerian *urud/u* and concluded that it has been a borrowing from Sumerian in the time of the IE parent language.[15] This suggested similarity to Sumerian URUDU has led to much speculation about cultural relations between the Indo-Europeans and the Sumerians.[16] The correspondence between the extant forms of the derivatives and Sumerian *urud/u*, which it supposedly represents, is not close. According to Crossland the presence of such cultural loan-words in Indo-European would in any case not prove any very close propinquity to Mesopotamia, since they might have been transmitted over considerable distances along trade-routes with the

[11] I. M. D'iakonov in JIES 13: 1–2, 1985, 114–115; J. P. Mallory, *In search of the Indo-Europeans. Language, archaeology and myth*, London 1989, 121; P. Kretschmer, *Zu den ältesten Metallnamen*, Glotta 32, 1953, 1–16.

[12] C. D. Buck, *A dictionary of selected synonyms in the principal Indo-European languages*, Chicago, 1988, 612.

[13] E. Neu, *Zum Wortschatz des Hethitischen aus synchroner und diachroner Sicht*, In Studien zum indogermanischen Wortschatz, ed. by W. Meid. Innsbruck, 1987, 181–182; cf. H. Waetzoldt op. cit. (see note 3!) 366: urudu = *kà-pá-Lum*, from a root *kpr-kpl* > lat. *cuprum, Kupros*.

[14] P. Kretschmer *op. cit.* (see note 11!), 6

[15] Geschichte Babyloniens und Assyriens, Berlin, 1885, 192; cf. J. Schmidt, *Die Urheimat der Indogermanen und das europäische Zahlsystem*, Berlin, 1890, 53.

[16] P. Kretschmer, *op. cit.* (see note 11!); J. P. Mallory, *op. cit.* (see note 11!), 121; T. V. Gamkrelidze, V. V. Ivanov in JIES 13: 1–2, 1985, 19; A. Scherer, *Hauptprobleme der Indogermanischen Altertumskunde (seit 1940)*. Kratylos 1, 1956, 11–12; E. Benveniste. *Indo-European language and society*, Coral Gables, 1973, 309–311; R. A. Crossland, *op. cit.* (see note 10!), 36.

commodities or objects to which they referred (as for example metal axes).[17] (It can be added to this that the present dating of the existence of a late IE continuum cannot be reconciled with the first emergence of the Sumerian ethnic and language.) On the other hand, Mallory believes that there was a contact relation of Sumerian with PIE and the classic example is Sumerian *urud* and PIE **reudh*-. In the opinion of Gamkrelidze and Ivanov the stem **reudh*- is of interest confirming the connection between metallurgy in the PIE period with that of the ancient East. (As it is well-known, they locate the PIE homeland to the area of eastern Turkey, i. e. near to the supposed – primordial – source of the stem *urudu*). According to Diakonov (who also locates a very early, common PIE - - Prot-Kartvelian homeland to the east Anatolian area) a meaning of 'red ore' would be more correct, but in his opinion Sumerian *urudu* probably comes from a pre-Sumerian substratum.[18] These opinions adequetely reflect the uncertainties surrounding the "ethnic" origins of *urudu*. E. Risch, for example, did not deal with the origin of the borrowed IE root **reudh*-.[19] E. Meyer argued that *urud/u* was borrowed from an – unidentified – Mediterranean language both into Sumerian and also Indo-European dialects.[20] G. Devoto's opinion stands close to Meyer's for he suggested that the counterinfluence of non-Indo-European peoples could be felt on the peripheries of Indo-European seats, including also the Balkans. In the Balkans these counterinfluences probably occurred during the Neolithic revolution and are reflected in the distribution of cereal names as well as in the adoption of - - Mediterranean or Sumerian - - *urud/u* among the Indo-Europeans.[21]

There is at present only one possibility for solving these contradictions, especially in view of the fact that evidence for the oldest copper metallurgy is at present known from the Euphrates region, namely from Çayönü Tepesi.[22]

In 1944 B. Landsberger pub lished two important studies in the scholarly journal of the Ankara University.[23] On the basis of the old city names of Mesopotamia such as *Urim, Uruk, Larsam, Adab, Lagaš* and *Zimbir* he reconstructed a substrate language which he called Proto–Euphratic. In north-

[17] *Ibid.*, 36; cf. A. Dolgopolsky, *The Indo-European homeland...* Mediterranean Language Review 3, 1988, 23.

[18] I. M. D'iakonov in JIES 13: 1–2, 1985, 135.

[19] E. Risch, *Die idg. Wurzel *reudh- im Lateinischen*. Studies in diachronic, synchronic, and typological linguistics. Festschrift for Oswald Szemerényi ed. by B. Brogyanyi, part II. Amsterdam, 1979, 705–724.

[20] E. Meyer, *Die Indogermanenfrage*. In A. Scherer (ed. by): Die Urheimat der Indogermanen. Darmstadt, 1968, 277.

[21] G. Devoto, *Correnti linguistiche e culturali anti-indo-europee*, Archivio Glottologico Italiano 39, 1954, 104–105.

[22] The kind personal communication of dr. M. Özdogan and papers held at the 1990 Tegernsee Symposium on the metallurgy in Cayönü (still waiting publication). Cf. J. D. Muhly in Old World Archaeometallurgy, Der Abschitt, Beiheft 7, 1989, 5–11.

[23] Ankara Üniversitesi, Dil ve Tarih–Cografya Fakültesi Dergisi vol. 2: 3, 1944, 419–429 (Turkish original) and a somewhat different German translation: Die Anfänge der Zivilisation in Mesopotamien, *ibid.*, 431–437.

ern Babilonia, on the other hand, on the evidence of divine names such as *Dagan, Zambamba, Amba*, as well as *Ištar* and *Adad* he concluded that before the arrival of the earliest Semites the area was settled by another original population that differed from the Proto–Euphratians. These people he held to be identical with the original population of Assyria, northern Mesopotamia, and possibly also Syria, whom he called Proto–Tigridians. This probably coincides with the suggestion of I. J. Gelb in 1961: "... the protopopulation of North Syria was of unknown lingustic affiliation (that is, non-Semitic and non-Hurrian)...".[24] Landsberger made an attempt to isolate within the Sumerian vocabulary those words which probably originate in the Proto–Euphratic substratum. The suspected words belonging to this substratum include:

engar = plowman
nukarib = gardener
kabar
udul = different kinds of shepherds
nagad
huhaldim = cook
suhadak = fisherman
simug = smith
nagar = carpenter
tibira = metal worker
isbar = weaver
asgad = cobbler, leatherworker
aslag = launderer[25]
adgub = reed weaver
pahar = potter
sidim = mason
kurusda = fattener of oxen, etc.

According to S. N. Kramer, all of these words consist of two or more syllables - - in Sumerian, the majority of roots are monosyllabic - - and in general show the same pattern as the words for Tigris, Euphrates, and the non-Sumerian city names. He added to the list of Landsberger terms as follows:

apin = plow
apsin = furrow
nimbar = palm
sulumb = date (i. e. date palm)
addub = basketmaker
damgar = merchant
šabra and *šasuk* = officials responsible for dividing the land and keeping the land register
ulušin = emmer beer
nimbar = date tree
uhin = fresh date, etc.

Only in the Turkish variant of Landsberger's study is the possible origin of the word URUDU discussed which according to Landsberger is neither Sumerian, nor Proto-Euphratic, but was borrowed to the PIE. These contradic-

[24] Journal of Cuneiform Studies 15, 1961, 35a, 38b, 40a; later he changed his opinion: Ebla and the Kish civilization. In: La Lingua di Ebla, ed. by L. Cagni. Napoli, 1981, 65–66, and also in: Ebla 1975–1985, ed. by L. Cagni. Napoli, 1987, 55–56.

[25] Cf. H. Waetzoldt: Die neo-sumerische Textilindustrie. Roma, 1972, 153–155, who prefers the meaning "finisher" for aslag. Cf. also E. J. Barber, *Prehistoric textiles*. Princeton 1991, 220, note 6. Barner does not refer to expressions like *adgub, isbar* concerning textile manufacture.

tory hypotheses (to which further confusion was added by P. Kretschmer who assumed a Bell Beaker /!/ contribution to the history of the stem **reudh-*, **roudhom* 'red metal)[26] can be resolved if we assume that the expression URUDU 'metal, red ore, copper' can only have originated from an area where extensive copper metallurgy can be documented already prior to the fifth mill. B. C. and from an area which presumably was not the prehistoric seat of Protosumerians and/or early Semites. Since an IE and Semitic etymology for the word can be rejected out of hand, and a Sumerian etymology is most unlikely, a substrate similar to the Proto-Euphratic or Proto-Tigridian is to be easily assumed. It is the latter which for geographical reasons corresponds best to the presently known location of very early (or earliest) copper metallurgy, Cayönü Tepesi. The geographical position and very early (i. e. 8–7. mill. B. C.) dating of the copper industry in Cayönü opens up new possibilities to review the origins of IE and other stocks relating metal names from pre-Sumerian and Protosemitic sources.[27]

НАЗИВИ МЕТАЛА У АНТИЦИ И ПОЧЕТАК УПОТРЕБЕ

Резиме

Аутор доноси неку врсту прегледа закључака наведених из досад обављених анализа првих познатих имена метала, као и првог коришћења и дистрибуције. Овом приликом реч је само о злату и бакру.

На основу разматрања лингвистичких позајмица, почев од речи сумерског порекла, аутор закључује о могућим најстаријим локацијама металургије злата и бакра, па и миграторним кретањима извесних праисторијских популација.

[26] P. Kretschmer, *op. cit.*, (see note 11!) 11–16.

[27] I bewail the absence (or inaccuracy) of some diacritical marks in the citation of lingustic data in this printed version of my paper.