



SUMERIAN URUDU AND KARTVELIAN METALLURGY

The Sumerian civilization has long posed some insoluble interpretational problems. One is the presence of a highly sophisticated level of metallurgy, despite the absence of minerals and ores, which excludes Sumer as a possible birthplace of metallurgy. This craft must have been either borrowed or taught by experienced teachers, and proof of this is found in the language, where many metal names are of unknown etymology (Hallo, 1963 :141).

Urudu, meaning ‘copper’ is amongst these.

The electronic Pennsylvania Sumerian Dictionary (ePSD) records the word *urudu* in the following way:

“*urud* [copper] (992x: ED IIIb, Old Akkadian, Lagash II, Ur III, Early Old Babylonian, Old Babylonian, unknown) wr. *urud*; *urud*₂ “copper” Akk. *erû*” (ePSD).” The first “spelling” (*urud*) refers to the sign , while the second (*urud*₂) is associated with the sign .

The cuneiform symbols designating copper derive from the earliest pictographic or proto-cuneiform stage of Sumerian writing (Ill. 1, p. 9).

R. Labat gives the following chain of the development of the *urudu* sign from its proto-cuneiform designs (Ill. 2, p. 9).

In Sumerian, *urudu* was not a regular vocabulary item. Its role as a classifier or determinative of every object made of metal was of equal if not much greater significance. In this capacity, *urudu* retained only its general meaning of metal, which enabled the lexeme to outline the specific class pertinence of objects and participate in the structural organization of the vocabulary.

Structurally, *urudu* is regarded as a simple word, i.e. one consisting of a single root morpheme, but the comparison of the word with Kartvelian language evidence throws a different light on its structural and semantic characteristics, which, in their turn, disclose *urudu*'s Kartvelian origin.

In Kartvelian, we have the word *uro* ‘mallet’, which is phonetically similar to the first part of the Sumerian *urudu*. It designates *a special hammer*, which has been in use since the first ironworkers appeared. Three different types are distinguished, according to the material used to make the *uro*-s' heads: stone, iron, and wooden *uro*-s. The first two have separate heads and handles, but the last is usually made out of a single knotted piece of hard wood, and unlike the other types, is a one-piece instrument.

In addition to the generic name, – *uro* – each variety also has its own name. The iron *uro* is also called a *variozi*, while the wooden one is a *khveda* (Ill. 3, p. 9).¹

Different dictionaries of the Kartvelian languages record the word thus:

Kartuli Uro Iron khveda (Saba, II, 1993 :168);

Khveda *see* khueda (ibid., p. 441);

Khueda Wooden uro (ibid., p. 445);

Uro Big hammer (Abuladze, 1976 :430);

Megrelian Uro Uro (Kajaia, III, 2002 :67);

Svan Ur Uro (Nizharadze, 2007 :188).

The comparison of the Sumerian *uru* and Kartvelian *uro* reveals only a single difference between them, namely, the final vowel of the Sumerian lexeme is a back *u*, while the positionally similar vowel in the Kartvelian word is a back sound *o*. The change of *o* to *u* is a frequent phonetic alteration, especially when in a weak or final position, and cannot prevent the identification of the analyzed Sumerian and Kartvelian words.

This process was undoubtedly aided by the final *u* in *du* (see further) causing backward assimilation of the vowel *o*. This sound change is typical of both Sumerian and Kartvelian, and can only add credulity to the conducted analysis and its results. Thus, phonetically, the identification of the Kartvelian *uro* as the archetype of the Sumerian *uru* meets with no obstacles.

The discussed issue (*o > u*) is not as simple as it might seem at first sight, for it suggests the presence of the vowel *o* in Sumerian. Sumerian grammars have long debated the problem of the presence/absence of the vowel *o* in the language, but without results. Although S. Lieberman demonstrated the existence of *o* in Sumerian almost half a century ago (Lieberman, 1977), Assyriologists are still reluctant to accept this, for various objective and subjective reasons, of which the need for a total revision, correction and re-publication of thousands upon thousands of pages of secondary literature is one. However, my works have confirmed S. Lieberman's major conclusion a number of times (Meskhi, 2011a; 2011b; 2018a; Meskhi, Leiden).

The question of whether the Kartvelian *uro*, 'a big hammer', may feature as the first semantic component of the Sumerian *urudu*, can thus be answered positively. Hammers are instruments which no metallurgical field can avoid using. In copper metallurgy, they are used for working large pieces of ore before smelting and hardening the copper.

But the question arises:

¹ The linguistic analysis of these names (*variozi*, *khveda*) is not provided in this paper.

Which uro was used by the Sumerians – stone, iron or wooden?

Iron mallets should be excluded outright. They could not have been used during the proto-cuneiform period, since the Iron Age only began in the first millennium BC, while the Sumerian *urudu* was fixed on the clay tablets of Uruk IV-III (3300-3000 BC). According to R. J. Forbes, “In Mesopotamia stone hammers were used originally, some beautiful small haematite hammers have been found. Later, however, copper and bronze hammerheads were used, and as soon as commercial iron appeared iron hammers” (Forbes, 1950 :133). Special literature provides very little information on instruments employed in metal work mentioning nothing on the devices made of wood. Consequently, the proto-cuneiform signs notated as *urudu* represent the images of copper head mallets excluding fist held stone mallets that could have been used in crushing and hardening copper.

Hardening copper is a very specific procedure, and could only be done by cold hammering. This culturological information makes the process of nomination transparent. Ancient metal workers used the name of an instrument employed in copper metallurgy to name the substance itself – copper. Linguistically, we witness a metonymic transposition of part (instrument) and whole (copper metallurgy) relationship in nominating objects and phenomena. This technique is still a very powerful means of word formation. It can therefore be stated that the archetype of the first component of the Sumerian *uru-du* originates from the Kartvelian lexeme *uro*, designating a ‘big hammer’ used in copper metallurgy.

The phonetic, semantic, and culturological relations between the Kartvelian *uro* and the Sumerian *uru(du)* are also confirmed by the design of the archaic signs of the Sumerian word. Ill. 1 shows the pictographic signs of *urudu* from Uruk and Ill. 3 is a photo of the Kartvelian *uro*. The graphic identity of the two objects, except for the longer handle of the Kartvelian *uro*, leaves no doubt about their “genetic” relations – the design of the Sumerian *uru(du)* is *copied* from the Kartvelian *uro* ‘mallet’.

However, a careful examination of other proto-cuneiform images reveals that ancient Sumerians designed their metallurgical instruments not only on the basis of two-part metal headed *uro*-s ‘mallests’, but also on the basis of Kartvelian *khveda* – an implement carved out of a single knotted piece of hard wood (Ill. 4, p. 9).

These proto-cuneiform signs have an identical design with *urudu*, and represent a hammer made of a solid piece of wood like the *khveda*. Confirmation of this identification – ZATU 737 = *kveda* – comes from another proto-cuneiform sign, ZATU 737xSZE~a (Ill. 5, p. 9) featuring a tree design inside the symbol to signify the material (wood) the mallet is made of.

The examination of all the discussed proto-cuneiform signs demonstrates that Sumerians were familiar with both types of mallets, the metal one made of two parts and the wooden *kveda* carved out of a single knotted piece of a tree.

The presented analysis of the Sumerian *urudu* and Kartvelian metallurgical instruments brings to light very unusual and unexpected relations. It becomes obvious that the Sumerian proto-cuneiform signs of *urudu* and ZATU 737, ZATU 737xSZE~a are based on different types of Kartvelian *uro*-s, i.e. mallets. Judging by the pictograms, the Sumerians reflected Kartvelian metallurgical knowledge in their writing symbols. This ranks the Kartvelian people as the teachers of the first metallurgical craft – that of working copper. Respectively, Kartvelian languages are revealed as the standard of comparison, and a proto-Sumerian system.

When accepting these premises, the idea that the structural pattern of the Sumerian *urudu* is a simple unit, as it is regarded by Assyriologists, is called into question. This lexeme is a more complex formation, consisting of two morphemes – *uru* + *du*, in which the first component is a root. Examination of the Sumerian material in the ePSD shows that none of the 15 homonymous *du*-s could feature as the second component of the lexeme. Conversely, the search for a phonosemantically similar morpheme in Kartvelian produced the following:

| | | |
|---------------------|--------------|--|
| Megrelian | Dudu | Same as <i>dud-i</i> – head (Kajaia, I, 2000 :512); |
| Kartuli | Dud | Crest of a hen’s head (Föhnrich, Sarjvelazde, 2000 :177); |
| Guruli <i>dial.</i> | Dud | Denotes the crest of a hen (Chikobava, 1938 :22). |
| Laz | Dud | Head, top of head; head in its transferred meaning (chief); source (Föhnrich, Sarjvelazde, 2000 :177); |
| Svan | Dud (dud-ul) | Nipple (ibid.). ² |

Of the given lexemes, the Megrelian *dudu* is the most significant due to its reduplicated structure. Reduplication is an old means of word formation used to supply *emphasis* or express plurality. In this concrete instance, the reduplication serves either of these functions (emphasis, plurality) or both. As plurality, *du* + *du* designates a number of *uro*-s (mallets), or that they are of different types, while emphasis imparts the meaning of *significance*, *importance*, or *greatness* to the original lexeme *du*. Therefore, *dudu* signifies ‘chief’ or ‘head of a group’. Etymologically, the root *du* belongs to the Kartvelian vernacular, as confirmed by numerous derivatives spread across pages 512-513 (Kajaia, I, 2000). A few examples suffice to demonstrate this: *duduri* (*dudu* + *ur* + *i*) ‘head’, ‘chief’; *duducha* (*dudu* + *ucha* ‘black’) ‘black head’, *dud-dud-i* ‘the best’, etc.

² *-ul* is a diminutive suffix.

The second variant, *dudi*, represents a later development of the Megrelian *dudu* ‘head, chief’. The following phases must have taken place in the following sequence:

| | | | |
|----|-----------|------------|---------|
| I | II | III | IV |
| du | > du + du | > dudu + i | > dud-i |

The first stage is represented by a monosyllabic root *du*. The reduplication of the root occurred at stage II. Stage III reflects the addition of the nominative case ending *-i*, which “ousted” the final root vowel *u*. The structural development of the word is confirmed by a number of cognates deriving from the fourth stage of the Megrelian *du – dud-i*.

It therefore follows that the structure of the Sumerian *urudu* is that of a compound word. It consists of two root morphemes: *uru + du*, with each component originating from the Kartvelian archetypes *uro* and *du*. The first constituent derives from the Kartvelian *uro*, ‘a big hammer’, and the second component (*du*) comes from the same Kartvelian source, or more precisely, the Megrelian *du*, meaning ‘head.’ Thus, the ultimate meaning of the Sumerian *urudu* is *uro* ‘a big hammer’ + *du* ‘head, chief’, i.e. ‘the chief big hammer’, ‘the leading big hammer’. Put differently, the etymology of the Sumerian *uru-du* grants Kartvelian people the leading role in the development of metallurgy.

In this context, it is significant to recall that the majority of foreign (R. Forbes, R. Virkhov, L. Aitchison) and Georgian scholars (N. Rekhviashvili, G. Kvirkvelia, G. Imnaishvili) consider Asia Minor the cradle of metallurgy and the Khalibs (Chaldi), Tubals, Mossiniks, and Mosokhs who inhabited the Pontic region the first producers of ferrous metals and iron (Kvirkvelia, 1976 :11). Interestingly, of the three stages of the development of metallurgy, the first phase, i.e. the use of natural and metallurgical copper, was over in the Caucasus by the V millennium BC (Imnaishvili, 2014 :135) and the participation of Kartvelian tribes in this process cannot be doubted. The same Kartvelian tribes are mentioned in the Bible: “...Tubal-Cain, an instructor of every craftsman in bronze and iron” (Gen. 4:22). It is interesting to mention that the Georgian Bible mentions not *bronze*, which is an alloy of copper and tin, but *rvali*, indicating ‘copper’. Put differently, the Georgian translation of the Bible covers the entire development of metallurgy, while the King James Version leaves out the first or copper stage.

Kartvelian surnames have also preserved information on Georgians’ metallurgical supremacy. *Urotadze* (*uro-ta-dze*), literally means “son of uro-s” or mallets; *Uridia* (< *uro-di-a*) designates ‘the mother uro’.³ The final *-i* in *uri* is the result of backward assimilation due to the front vowel in *di*: *uro + di > uri-di*.

³ Svan *di* = mother (Topuria, Kaldani, 2000 :195).

Conclusion. A comparative linguistic and culturological examination of the Sumerian *urudu*, ‘copper’, and Kartvelian language evidence demonstrates that the Sumerian lexeme is actually contrary to the accepted view of its semantic and structural characteristics. The Sumerian *urudu* is not a simple word. It is a compound noun consisting of two root-morphemes *uru + du*.

Both constituents originate from the Kartvelian general vocabulary. The first element (*uru*) derives from the Kartvelian metallurgical instrument *uro*, ‘a big hammer’, while the second comes from the root (*du*) of the reduplicated Megrelian noun *dudu*, ‘head’, ‘chief’. Consequently, the archetypical meaning of the analyzed lexeme is ‘the head, chief, or principle hammer’. However, *urudu*’s (< *uro+du*) deciphered etymological meaning is not restricted to its sum-total semantics. Its significance is much greater, for it semantically exceeds the archetypical meaning of the components and grows into an *informational system of the origins of metallurgy*.

The mechanism of generating this information is based on two languages – Kartvelian and Sumerian, and their potential to combine, collaborate with and complement each other. According to traditional etymological works, the identification of the archetype, as a rule, clarifies the origin of the word’s semantics. In the case of Sumerian and Kartvelian comparative studies, none of the lexical meanings – neither the Sumerian nor the archetypical Kartvelian ones – fall by the wayside. They appear as key-words functioning as specific “road signs” directing the process generating specific information.

Putting together the meanings of the Sumerian copper and the etymological *uro* ‘mallet’ and chief, head, enables us to retrieve a 5,000-year-old message – that the Georgian people were the owners of one of the most important instruments in early copper metallurgy. Put differently, Georgians were the first metalworkers, and taught their craft to the Sumerians.

Supporting evidence for this is abundant. By the time copper metallurgy emerged in Sumer, the Kartvelian tribes had completed the first stage of developing copper metallurgy (V millennium BC; Imnaishvili, 2014 :135), and judging by the analyzed proto-cuneiform writing symbols the Sumerians used, they received the knowledge of metal from their Kartvelian teachers.

Foreign and Georgian experts in the field are unanimous in recognizing the Trans-Caucasus and Asia Minor as significant metallurgical centres of the Old World. The Kartvelian tribes – Khalibs,⁴ Tubals, Mossiniks, Mosokhs, who still inhabit the Pontic region, have been

⁴ For the etymology of Khalibs, a Greek name given to one of the Georgian tribes, see Meskhi, 2011a :124-150.

granted the honorary title of first metallurgists. This area, much of which is now outside Georgia's political borders, possessed everything required for the invention and successful development of ironwork: different metal ores, wood for fires, and, most importantly, knowledge of metallurgy. Therefore, the finding of Kartvelian lexemes designating different mallets (*uro-s*), confirms the presence of the Kartvelian people in Sumer long before the Sumerian civilization commenced. It is exactly due to the pre-Sumerian status of Kartvelian that the latter can be used to decipher various linguistic and culturological issues discussed in this and my previous works (Meskhi, 2011a; 2011b; 2018a).

Archaeological evidence, ancient Assyrian cuneiform and later, Greek and Roman sources, the Bible, Kartvelian historical and ethnological documents and scientific studies on Kartvelian metallurgy, are unanimous concerning the birthplace and “authors” of metallurgy. The results of the conducted study are in complete agreement with those of another culturological field – Kartvelian mythology, in which Amirani, the generalized image of the Kartvelian nation, is the first metallurgist, who taught the art of metalwork to the people and gave them the knowledge of making fire.

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Illustrations



III. 1.

III. 2.

III. 3.

III. 4.

III. 5.

III. 1. Proto-Cuneiform *urudu*.⁵ III. 2. Labat 1976: 96. III. 3. Iron *uro* or *variozi*.⁶

III. 4. Sumerian *khveda*, ZATU 737.⁷ III. 5. Sumerian wooden *khveda*. ZATU 737xSZE~a.⁸

⁵ <http://www.cdli.ucla.edu/tools/SignLists/protocuneiform/archsigns.html> p. 253 of 385.

⁶ I am thankful to Prof. E. Nadiradze, who provided me with the photo of an iron uro.

⁷ <http://www.cdli.ucla.edu/tools/SignLists/protocuneiform/archsigns.html> p. 289 of 385.

⁸ <http://www.cdli.ucla.edu/tools/SignLists/protocuneiform/archsigns.html> p. 291 of 385.