59) Sekēru – “to purify”, not “to gild” — CAD S, p. 210-214 separates sekēru A “to dam up, close, clog” from sekēru B “to heat” and “to treat gold in a certain way.” AHw p. 1035 is certainly right to treat both as one verb “abschließen, absperren, verschließen, einschließen” as ingredients for medicine or perfume are „enclosed“ in a pot or an oven, or immersed in water for cooking. The passages in which sekēru is used in the context of gold works are less clear. CAD S, p. 213-214 rendered the verb variably as “to be processed”, “to alloy (?)” or “to gild”, although the adjective sakru (CAD S, p. 81) was correctly given as “refined”. I want to suggest to translate sekēru, when it appears with gold, always as “to purify (by means of cementation)”, and not to assume a development into “to gild” in Neo-Assyrian.

An interpretation as “gilding” seems to make sense in SAA 13, no. 28:


“We have melted down twenty-three minas of gold in the agate-standard, including the votive gifts. They will hammer it as thin as the king, my lord, commands. Later, they will ‘enclose it’ (isasakkištā).”

Cole and Machinist translated “Later, they will use it for gilding.” Yet, the passage works perfectly fine as “thereafter, they will purify it” because the manufacture of gold foil is one of two possibilities to prepare gold for parting by cementation. Before we move on, a short technical explanation is required.

There are two purification methods, cupellation and parting by cementation. During cupellation the gold alloy is melted together with lead (at ca. 1100°C) under oxidizing conditions. This oxidizes the lead, the copper and any other present base metals, but not gold and silver. Because native gold always contains silver, on average between 10 and 25%, it cannot be purified to 100% by cupellation alone. Gold and silver need to be parted by salt cementation. For cementation, gold must be used in pulverized form or hammered into thin foils. The dust or the gold foils are then immersed in acidic reagents, either common salt and brick dust, or a mix of salt and other minerals (e.g. the lurpānu “black alum” expended in ARM 25, 313). When heated to ca. 650-800°C the salt vapour binds the silver (and may also bind other metals), but the gold, which remains in a solid state during the reaction, comes out pure. The purpose of using gold foil or dust is to provide a large surface so that the gold becomes purified through and through. When thicker objects are immersed in the salt, only surface enhancement would take place.1) The fire assay described in ARM 13, 6 (newer translation by J.-M. Durand, LAPO 16, no. 108 and on Archihab) was such a cementation procedure. In this case they ground four ingots finely to prepare purification:

“The four minas of gold for the two sun-disks that my lord has sent me have been powdered (im-ma-ri-iqa-ma). I have taken four shekels for each of the four ingots, and I purified it (as-ki-ta-šu-ma) in order to determine the fineness (īš-shum sak-ki-tim a-ma-ri-im, lit.: to see the residue).”

The key is the verb marāqua “to crush fine, to grind” in OB. For cupellation it would not have been necessary to grind the raw material because it would be melted anyway. 2) Thus, in connection with gold, sekēru expresses the action of either “immersing” the gold in the mix of reagents, or merely “enclosing” it in a vessel or the furnace. Naturally, one can also justify “to heat” for ARM 13, 6 (Durand,
LAPO 16, p. 246-247) but the many attestations for *hurāsu sakru “purified gold” in Neo-Assyrian texts show that the more technical meaning “to purify” (by means of cementation) is intended.

CAD’s translation “to gild” was based on S. Parpola’s suggestion in LAS II, no. 283 (with note 502 on p. 278). The text was re-edited as SAA 10, no. 368. Lines rev. 4’-7’ read:


Parpola (SAA 10, no. 368) translated:

“They are transporting asphalt to A[kk]ad from the country of I[tu’u]; and the inhabitants of Akkad are building and gilding kiln-fired bricks.”

The context is asphalt work. The passage makes perfect sense according to its basic meaning “to clog.” The townspeople of Akkad were using the asphalt to smear it (ištahhumtu) at a wall built of kiln-fired bricks, and thereby clogging (isakkur) them, i.e. making them water-proof. I believe that in SAA 10, 368 sekēru has nothing to do with gold works.

1) The chemistry of the cementation process is described in A. Ramage and P. Craddock, King Croesus’ gold: Excavation at Sardis and the history of gold refining (Archaeological exploration of Sardis 11), Cambridge, Mass. 2000, p. 175-183; for gold refining in general see p. 10-13.


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60) A new twist on Akk. mardatu — As yet, the derivation of Akk. mardatu(m), MA/NA mardatu, “woven fabric, rug, tapestry etc.” remains unresolved. So far, three etymologies have been proposed:

(1) Discussing the Ugaritic syllabic spelling [mär]da-te-tu GADA (PRU 3, 206-207 [RS 15.135]:5), Huehnergard commented: “Although a connection with the Akk. word mardatu ... seems inescapable, the spelling here indicates a pronunciation /mardätu/, which in turn suggests a maqatal-t form of a root II-y, viz. unattested r-d-y; cf. perhaps Arabic r-d-y Gt and tD “to put on a garment”, rīdā ‘cloak, robe’.” However, van Soldt noted that other Akk. words in texts from Ugarit are also spelled with an -e- for expected -a-, e.g. ḫāretu for ḫāru, “madder”. The form mrd t is also found in Ugaritic, and the word has been translated “a piece of material or a garment (?), multihued textile or garment, fringed and embroidered, a carpet” (DUL, 566).

(2) The texts from Mari show that the mardatu seems to be typical of west and north Mesopotamia. J.-M. Durand also notes that not a single text from Mari shows clearly that it refers to personal clothing and he suggests deriving the term from the root MRD/WRD, “to go down, descend”, so that it would mean “le tissu qui descend”. This would imply that the word is Semitic.

(3) However, the texts from Qatna could indicate that mardatu may not be Semitic but a Hurrian word. The word mardu occurs in TT 12:13, 20, TT 16:5 and TT 17:26, which are letters, but in both occurrences in the first text it follows a Glossenkeil and so was considered a Hurrian term in Qatna. This seems confirmed by the Hurrian term mardatiqšu, “(textile) weaver”, which also occurs at Qatna in TT 14:22.

... has gone unnoticed, in this connection, that Syriac marden means “fusus sine ansa”, “spindle”10, “a spindle”11, as does Aramaic mard’ā, “spindle”12, from which the verb RDN, “to spin” is derived. In Arabic, too, there is the verb radana, “she (a woman) spin thread with the mirdun” (Lane AEL, 1070); “to spin”13. These cognates seem to indicate that Akk. mardatum could derive from the root *RDN, “to spin”, although so far this root, with this meaning, is unattested in Akkadian. If this is the case, Akk. mardatum would have been derived from *mardantum or the like, with assimilation of the syllable-closing -n to the following -t (cf. von Soden GAG, 34 §33d). However, this would have given the form *mardattu, which does not occur.”