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kasû(^ÚGAZI^{SAR}) Revisited¹

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Introductory Remarks

The botanical identification of the plant substances used in Babylonian-Assyrian medicine is one of the major challenges in understanding the prescriptions in medical texts. In Babylonian-Assyrian medical texts in general and texts dealing with conditions of the feet in particular, one plant stands out which is mentioned in many prescriptions for a number of diseases. This plant is $kas\hat{u}$. In spite of its wide range of usage, the botanical identity of $kas\hat{u}$ is still debated by Assyriologists. It is, therefore, fitting to take another look at the various attempts at identifying this plant, as the arguments so far presented for any given identification often consider only selected aspects of the textual evidence.

In Babylonian-Assyrian medical texts practically all the parts of the $kas\hat{u}$ were used as medication, its leaves, seeds, sprouts, the fruity pulp (presumably in those instances where a particular part is not specified), and most importantly the $m\hat{e}$ $kas\hat{i}$ " $kas\hat{u}$ -juice" which is used to wash parts of the body or as the liquid base in which other materia medica were boiled or soaked and the resulting decoctions applied to the body on bandages. In treating the conditions of the feet, $kas\hat{u}$ juice was used to wash the feet prior to the application of other materia medica. The $kas\hat{u}$ could be crushed, boiled, roasted and/or finely ground into powder ($kas\hat{u}$ flour) that was used as a dry medication sprinkled on boils or wet lesions. This flour made from roasted $kas\hat{u}$, $q\bar{e}m(ZI)$ $kas\hat{i}(GAZI^{SAR})$ $qal\hat{u}ti(BIL.MEŠ)$, is mentioned in a list of various kinds of flour and other powdered substances (BAM 124 iii 44-54; BM 30918, 18-29). Interestingly, there are no references mentioning the root of the $kas\hat{u}$ as having been used as medication or otherwise.

Let us briefly list the references that offer an identification:

a) The first botanical identification of $kas\hat{u}$ with *cuscuta* "dodder" was suggested in 1917. See j) below, the reference to M. Stol.

b) A. Ungnad supported this opinion and identified $kas\hat{u}$ as "Flachsseide" (*cuscuta monogyna*).²

c) According to A. Leo Oppenheim (1948) $kas\hat{u}$ was "cassia".³ See n. 34 below concerning this problematic identification.

d) In 1949 an analysis was presented by R. Campbell Thompson, *A Dictionary of Assyrian Botany* in which he identified $kas\hat{u}$ variously, as "cassia", "carob" or "rose". ⁴ In suggesting the identification "rose", he cited the reference in *Maqlû* for "*kasî* ŠAR" and carob (*Ceratonia siliqua*) for "*kasia*".⁵

e) In his article in AfO 18 Landsberger proposed the identification of $kas\hat{u}$ as "mustard".⁶ His identification was partly prompted by the lexical references in Hb XXIV

¹ Special thanks are owed to Prof. Markham Geller for reading the manuscript and for his constructive comments, suggestions and pointers. I thank Dr. Annie Attia for drawing my attention to ARCHIBAB the Babylonian Archive of texts from the 20^{th} to the 17^{th} centuries B.C. A number of references to *kasû* can be accessed s.v. "*kasûm* moutarde". The photographs in the article courtesy of Charles H. Eypper.

Note des éditeurs : cet article devait initialement être présenté lors de l'atelier Médecine Mésopotamienne (RAI de Paris, juillet 2019). Une chute malencontreuse avec fracture, alors que l'auteure se rendait en bibliothèque pour d'ultimes vérifications bibliographiques, ne lui a pas permis d'assurer cette présentation. Cet article important est donc proposé ici en avant-première. Les articles ayant fait l'objet d'une communication effective lors de cet atelier seront publiés dans le JMC courant 2020.

² Ungnad 1937: 76 s.v. kasiia.

³ Oppenheim 1948: 7.

⁴ Campbell Thompson 1949: 192-194.

⁵ Campbell Thompson 1949: 194 and 192.

⁶ Landsberger 1957-1958: 337 notes for line 83.

which point to the fact that $kas\hat{u}$ was a condiment with which foods were spiced,⁷ such as fish⁸, cheese and beer.⁹ M. Geller points out that the basis for Landsberger's identification was irrelevant for $kas\hat{u}$.¹⁰ The identification with "mustard" is followed by many despite being challenged early on by M. Civil, see g) below.

f) AHw 455a "Senf(-Kohl) *Sinapis nigra*" follows this identification. *CAD* K s.v. "*kasû*" 248a-250b after presenting the textual evidence concludes, "*kasû* might actually denote the mustard (seed)."

g) "Serious doubts" concerning the use of $kas\hat{u}$ as a flavoring agent in beer were expressed by M. Civil in his article "A Hymn to the Beer Goddess and a Drinking Song".¹¹

h) The identification "common beet, *Beta vulgaris*" was proposed by M. Geller in his article "A Recipe against ŠU.GIDIM". His suggestion is based on the prescriptions for the treatment of convulsions resulting from the ŠU.GIDIM using malonic acid (found in beetroot) and urea (in urine). As more chemical tests are needed to prove this theory, the question is left open.¹²

i) P. Steinkeller identifies *kasû* as "wild licorice" (*Glycirrhiza glabra*) stating that both cassia and mustard do not form part of the flora of southern Iraq.¹³ Regarding the botanical definition of "cassia", see n. 32 below.

j) M. Stol, returns to the old identification of $kas\hat{u}$ with *cuscuta* and cites the various species of this dodder that are found in southern Iraq and affirmatively states: "Our conclusion is clear: $kas\hat{u}$ is *cuscuta*, not mustard or common beet".¹⁴ In an earlier article, he translated the "flavored" cheese GA.ÀR GAZI as "Dodder cheese".¹⁵ In his article in the *RlA* concerning dairy products in Mesopotamia, Stol identifies GAZI with "(a dodder, *cuscuta*?)".¹⁶

k) A.L. Slotsky after presenting some of the evidence concludes: "In view of this, $kas\hat{u}$ will be called "mustard /cuscuta" in this study in order to achieve a balance between tradition and accuracy." She misses, as pointed out by M. Geller, textual evidence that gives us possible clues about the identification of $kas\hat{u}$.¹⁷

l) H. Stadhouders in his edition of *šammu šikinšu* "The plant (and) its appearance" identifies $kas\hat{u}$ as "a kind of mustard and/or dodder," thus following Landsberger and Stol.¹⁸

m) In a recent note M. Stol confirms his identification of $kas\hat{u} \, \check{s}it\hat{e}$ with "dodder" citing his earlier 1994 article.¹⁹

Examining the textual evidence describing $kas\hat{u}$ and its use, our initial question was: what plant or its fruit would combine all the criteria that our Mesopotamian sources offer? It would appear that there is only one plant that fulfills all the criteria, the tamarind or rather the tamarind pod.²⁰ The present contribution intends to prove this botanical identification by comparing the textual evidence with the actual plant.

²⁰ Krishnamurthy 2008. This reference provides us with a full analysis of all the compounds and chemical composition of the parts of the tamarind.

⁷ Reiner and Civil, *MSL* XI 87 and 161 (Old Babylonian Forerunner 17) with salts and alkali.

⁸ Landsberger, *MSL* XVIII/2, 120 (line 127).

⁹ Civil 1964: 77 n. 14. Also Röllig 1970: 80 n. 33, 34 and Oppenheim 1950: 9.

¹⁰ Geller 1982: 193 n.19.

¹¹ Civil 1964: 77 n. 14.

¹² Geller 1982: 194-195.

¹³ Steinkeller 1987: 92.

¹⁴ Stol 1994: 179.

¹⁵ Stol 1993: 108.

¹⁶ Stol 1997 *RlA* VIII s.v. Milch(produkte) A. In Mesopotamian. 200a.

¹⁷ Slotsky 1997: 32. Review of this book by Geller 2000: 410-411.

¹⁸ Stadhouders 2011 nr. 18, 12 §32' and translation in 2012 nr. 19, 5 n. 35.

¹⁹ Stol 2018: 350.

It should be mentioned that the tamarind tree does not exist in Iraq today, but the tamarind pod is available in abundance, as it is an imported commodity from countries such as Oman, Saudi Arabia and India, to name only three. However, there is evidence that kasû(GAZI) was harvested in the forests of the province of Umma during the Ur III period. Here forest (TIN) is defined as the areas of "riverain thickets, trees, bushes, and grasses".²¹ The kasû was collected, stored and later sold for silver to private traders.²² As mentioned above, Steinkeller has identified $kas\hat{u}$ with "wild licorice" (*Glycirrhiza glabra*).²³ This identification is problematic, as it is the root of the Glycirrhiza glabra that is used, and as mentioned above the root of the $kas\hat{u}$ was not used. Hence, for the same reason the identification "beetroot" for $kas\hat{u}$ would not be a possibility.²⁴ It is possible that the tamarind tree once grew in Mesopotamia, but at some period in its history ceased to exist for reasons unknown. Evidence from a Neo-Babylonian letter mentions a boat of $kas\hat{u}$ for which silver was paid.²⁵ As this is a late text, the possibility of the tamarind pods being imported could be raised. We know that many commodities were traded between Dilmun (today Oman), which acted as an entrepôt, and southern Mesopotamia. Thus, it is likely that $kas\hat{u}$ ultimately became an import. The tamarind pods are easily transportable and travel well. Within this context, a particular reference comes to mind. In Hh III, in the section in which the various kinds of date palms are listed we read in line 285 GIŠ.GIŠIMMAR NU.TUK.KI with the reading $asn\hat{u}^{26}$. This entry is followed by 286 GIŠ.GIŠIMMAR MÁ.GAN.NA=makkannu (which Landsberger thinks it to be a mistake because the other parallels do not mention this), and 287 GIŠ.GIŠIMMAR ME.LUH.HA= meluhhu. As kasû "tamarind" may well have been an import, could any one of these "palm trees" of obvious foreign origin refer to the tamarind? As references describing these particular kinds of dates are not available, this is highly unlikely and is open to wide speculation. In comparison to kasû, their usage in medical texts is relatively rare. In texts dealing with conditions of the feet, the "date of Dilmun" is prescribed only in prescriptions dealing with the *sikkatu*-condition.²⁷

What is the tamarind?

The tamarind derives its name from the Arabic *Tamar Hindi* "Indian date".²⁸ Its scientific name is *Tamarindus indica* which is the sole species of the genus *Tamarindus*. The Arabic name *Tamar Hindi* is used throughout the Middle East. But in every other country in Asia where the tamarind is grown it is referred to by different names, as e.g. (in India itself) "*imli*" from the Sanskrit *amlika*; (in Thailand) *makham*; and (in Indonesia) *asam jawa*. The Tamarind belongs to the Fabaceae family and is a very leafy, evergreen, medium-growth tree originally indigenous to tropical Africa and India, but now growing throughout Asia. It grows wild in Africa and southern Arabia especially in Oman on the mountain slopes facing the sea. In this region the tamarind grows to about 6 meters in height. In fact, nowadays it is found around the world (including China and the U.S.A.) wherever a sunny tropical climate

²⁸ Clearly the Arabic influence is discernable by the nomenclature in the West. In Middle Ages it was called *tamarindus* and Marco Polo (14th cen.) wrote *tamarandi* (The Compact Oxford English Dictionary, Second Edition, 1994: 2006).

²¹ Steinkeller 1987: 91.

²² Steinkeller 1987: 96.

²³ Steinkeller 1987: 92.

²⁴ Geller 1982: 194-195.

²⁵ CT 22, 123, lines 6-7 (Plate 24).

²⁶ Landsberger, MSL V 117: Hh III 285 (Date palm of Dilmun).

²⁷ Four prescriptions in a single Kuyunjik text, AMT 32,5 + AMT 51,4 + AMT 43,3: iv 8', 9', 13', 16'. AMT 93,2: rev 1 (for *sikkatu*, in broken context). In an Aššur text BAM 124 iii 41-43 one prescription for *sikkatu*, which has a parallel in AMT 32,5+ iv 14-16, lists *isqūqu* flour which has been replaced by the "date from Dilmun" in the AMT 32,5+ reference.

dominates. In optimum climatic conditions the tamarind can grow to a height of about 24 meters. Its numerous bright green leaves fold at sunset and open again at sunrise. Its small yellow flowers are five petalled with orange or red streaks.²⁹ The *kasû* is described as GAZI SIG₇.SIG₇ which may refer to the dense foliage of this plant.³⁰ Also in the pharmaceutical series *Uruanna* II 39 it is described as ^ÚGAZI^{SAR} SIG₇.³¹ It should be noted that *kasû* and *amhara* are described as being *atartu*,³² which may denote a wild growing plant³³ The determinative SAR., the designation SIG₇.SIG₇, and *atāru* appropriately describe the particularly dense foliage of the tamarind, a leguminous plant which could grow wild or also be cultivated (*erišti erēši*).³⁴ Therefore, *kasû* cannot be identified with the parasitic *cuscuta* "dodder" because the most prominent feature of this parasite is the absence of leaves (in some species its so-called "leaves" are actually minute scales). The dodder depends on the host plant for its nutrition. The *kasû* has abundant leaves.

But it is the fruit of the tamarind tree that is of special interest to us, as its use particularly as a condiment is widespread in Asia and the Middle East. A tamarind tree, whose fruit matures between April and July, can produce about 170 kg of tamarind yearly. It should be noted that the Mesopotamian references refer to the fruity pulp designated $kas\hat{u}$ and its use, which to some extent, is very similar to that of dates (*suluppū*). Dates were used, for example, as *mê suluppī* a "date maceration", or *aban suluppī* the "date stone", or *qēm suluppī* "date flour", or *šikar suluppī* "date beer". Interestingly, the wood of the *kasû* does not seem to have been used, as it appears either without any determinative or frequently with the determinative Ú not GIŠ and (most decisively) SAR.

The tamarind has hard-shelled, light brown, segmented pods (see Ills. 1 and 2, A) which can be anywhere between 4 and about 12 cm. long. The shell can be easily cracked open by hand revealing the elongated, sharply segmented, brownish-red pulp (the fruit) (see Ills. 2, B and D). Although in connected segments, this fruity pulp looks as if it was all held together by or contained in a "net" (see Ill. 2, C) consisting of three or four large veins that run from the stem longitudinally along the sides of the fruity pulp and smaller tiny filament-like veins that extend in pairs from the longitudinal veins and burrow into the sides of the pulp itself (see Ill. 2, B). It is, in fact, this net structure that makes the tamarind unique in comparison to either the species *cassia fistula* or the carob (*Ceratonia siliqua*). ³⁵ Both the *cassia fistula* and the carob belong to the family *Fabaceae* (as also the tamarind) and although they too produce pods, the arrangement of the fruity pulp and the seeds is markedly different from that of the tamarind and lacks such a vein structure. Thus, there is no real point of comparison.

The taste of the ripe tamarind is sweet-sour to sweet. The unripe tamarind is very sour. Each fruit segment contains one seed which is encased in a thin husk (III. 2, E). The seed is very dark brownish-red, somewhat flat, irregularly rectangular in shape (not round), glossy smooth, and roughly 1cm in size (III. 2, F).

- ³³ CAD A/II s.v. *atartu* B 486b. M.J. Geller 1982: 194a.
- ³⁴ Geller 1982: 194a.

²⁹ Krishnamurthy 2008: 363.

³⁰ Reiner, MSL XI: Hh XXIII, Old Babylonian Forerunner 15, 158, line 489.

³¹ Geller 1982: 196 n.25.

³² Landsberger and Reiner, *MSL* X Commentary HAR-gud to HAR-ra XVII, Recension B 103, line 178b. Ú.GAZI.SAR - *anhara* - *hasarrat* (according to CAD this latter is "a kind of grass").

³⁵ It should be noted that the genus *cassia* includes numerous species, and it has become an imprecise collective known as the "cassias". It is therefore not accurate to botanically identify a particular Akkadian plant with only the name of a genus, as e.g. Oppenheim 1948: 7. Thompson refers to both *cassia* and *cassia fistula* and also "carob", and "rose" (see above, n. 3 and 4).



Ill. 1 Tamarind pods



Ill. 2. Parts of the tamarind pod

A. Shell; B. Fruity pulp and veins; C. Examples of veins and fine filaments; D. The fruity pulp; E. Husk containing the seed; F. Tamarind seeds

The $kas\hat{u}$ seems to have been a staple condiment in Mesopotamia. Evidence of its use is attested from almost all periods of Mesopotamian history. Large amounts, for example, 15 GUR 3 PI of $kas\hat{u}$,³⁶ appear in economic texts. A group of tablets from Ur belonging to the archives of the Ganunmah (gá.nun.mah), the store-house of the ^dNingal temple, lists foodstuffs such as butter, cheese, oil, dates, delivered for offerings for various deities. These offerings fall into three basic categories: *sattukku*(SÁ.DUG₄) regular daily offerings, monthly special offerings, and offerings for particular festivals. In the listings for regular daily offerings *kasû* and coriander (*kisibirru*) in equal amounts appear. The required amounts were

³⁶ As this is an Old Akkadian text, (the value of one *kurru*(GUR) at that time was equal to 300 $q\hat{u}(SILA)$ "liter". This amount would, accordingly, be 15x300=4500 liters. In addition to this there are 3 PI, a unit which is a little less than a GUR as 1 GUR is equal to 5 PI. Thus, we have an actual overall total of over 4500 liters of *kasû*. For other examples see CAD K s.v. *kasû* 248b. Measurements are approximations and vary in time and location. See *RLA* VII 500-504.

not inconsiderable and they vary between 13 and 15 liters. ³⁷ A text dated to the reign of Rim-Sîn of Larsa, confirms the receipt of 20 liters of $kas\hat{u}$ for princess Šamuhatum.³⁸ Also 20 liters were delivered to a "fuller (LUÁZLAG) who had been bitten by a dog, and a brewer²(^{LÚ}KAŠ.ÍL) whose foot is sick".³⁹ A smaller amount of 10 liters were delivered to a certain Šamaš-magir, "when his foot had been sick".⁴⁰ An interesting Old Babylonian reference for the purchase of an unknown amount of $kas\hat{u}$ against a payment of three shekels of silver gives us some insight as to the value of this commodity.⁴¹ The product seems thus to have been in the middle price range, but not cheap. In an inheritance list from the Old Babylonian period, 5 BÁN of kasû is listed.⁴² A relatively large amount of kasû appears in a list as *riqqū ša asî* "aromatic plants of the physician" in a text from Nuzi.⁴³ An example from the Neo-Assyrian period gives us yet another dimension as to the "popularity" of kasû. On a stela of Aššurnasirpal II, the king describes the elaborate celebration at the opening of his royal palace in 879 B.C. at Kalhu (Nimrud) which hosted thousands of people over ten days of festivities. A detailed list of the foods and drinks, including spices, and the quantities of each are arranged in descending order, the smallest being ten homers (ANSE). Among the series with quantities of a hundred or more, $kas\hat{u}$ is listed, 100 $kas\hat{u}$ (GAZI.SAR) followed by 100 šizbu(GA) "milk".⁴⁴ Unfortunately, the unit of measurement is not mentioned with any of the quantities of 100 and above. Considering the large quantities of other items, e.g. 1000 sheep, 1000 lambs, 500 deer, 10000 doves, 10000 fishes, to name only a few, the 100 $kas\hat{u}$ must have also represented a reasonably large amount of some unit of measurement. As a condiment it was more than likely tamarind paste that was offered with the food at the elaborate celebrations hosted by Aššurnasirpal II.

The kasû "Tamarind" in Maqlû

One particular reference, which is often quoted, should be considered. In Tablet V of the Witchcraft Series *Maqlû*, the victim presents his case before the gods Nusku and Girra, saying in line 31 $k\bar{i}ma\ kas\hat{i}\ liks\hat{u}si\ kisp\bar{u}sa\$ "Like $kas\hat{u}\$ may her spells bind her".⁴⁵ Beyond the pun of the plant name $kas\hat{u}\$ and the verb $kas\hat{u}\$ "to bind" (also magically), the question should be asked whether this wordplay might describe something about the $kas\hat{u}\$ that "binds". Also related to this is the prescription in BAM 158 i 22 and ii 11-12 of the *šitê* $kas\hat{i}\$ "the *šitû* of the *kasû*" mentioned after *kasû* among other *materia medica*.⁴⁶ Also in BAM 228 obv 13 and its parallel BAM 229 obv 7' (broken context) we read $kas\hat{u}\$ followed by *šitê* $kas\hat{i}.^{47}\$ The *šitû* seems to have been in fact some part of the *kasû* that was specifically used as *materia medica*.

³⁷ See references in ARCHIBAB s.v. "kasûm moutarde" from UET 5, with ARCHIBAB numbers 16-22. These texts were studied by H.H. Figulla 1953: 101 e.g. UET 5 742 calls for 1 $s\bar{u}tu(BAN)$ 4.5 $q\hat{u}(SILA)=14.5$ liters, or 97-98 UET 5 777 1 $s\bar{u}tu(BAN)$ 5 $q\hat{u}(SILA)=15$ liters. One $s\bar{u}tu(BAN)=10$ liters at this early period. ³⁸ CUSAS 15 87. The measurement BANMIN (2 BAN).

³⁹ CUSAS 15: 158. A fuller is a wool clothmaker who used the process of fulling for thickening and shrinking wool cloth by moistening it and trampling it with his feet.

⁴⁰ CUSAS 15: 192.

⁴¹ Poebel 1909. BE VI/2 44-45, tablet 65, plate 39. A document dated to the First Dynasty of Babylon is a receipt for 3 shekels of silver for the purchase of. *kasû* from Balilum and Sîn-Malik.

⁴² One $s\bar{u}tu(BAN)=10$ liters at this early period. Hence, 50 liters of $kas\hat{u}$ was the amount called for in this list. Frank 1928: 33 and Plate XV Text 38, 7.

⁴³ Lacheman 1950: 11, transliterated text 539 (Plate 89 213. Written on the lower edge. In line 6 the amount required was 1 *emāru*(ANŠE) "homer"=about 100 liters and 10 <SÌLA>"liters" of *qa-zu-e*.

⁴⁴ Wiseman 1952: 24, 28, 35 and 43 line 130. He erroneously follows Thompson's identification "rose" for $kas\hat{u}$. ⁴⁵ Abusch 2015: 102.

⁴⁶ BAM 158 i 22 $kas\hat{u}$ (GAZI.SAR) *ši-te-e* $kas\hat{i}$ (GAZI.SAR) and ii 11-12 $kas\hat{u}$ (GAZI.SAR) *ši-te-[e]* $kas\hat{i}$ (GAZI.SAR). CAD Š/III s.v. *šit* \hat{u} B 143a defines it as (a plant, a variety of $kas\hat{u}$). The cited reference *šit* \hat{u} SAR in a list of plants in Merodachbaladan's (Marduk-apla-iddina II) garden (CT 14: 50 20) may have been a plant unrelated to the *šitê* $kas\hat{i}$, however this is only a possible suggestion.

⁴⁷ Prescribed in a prescription against fever. Bácskay 2018: 205.

CAD suggests a possible connection with $\underline{\check{s}ed\hat{u}}$ "offshoot".⁴⁸ This is unlikely, as the word generally used for "offshoot" is written in medical texts with the logogram ŠE.KAK with the possible readings <u>habburu</u>, niplu, ziqpu, or <u> $\check{s}itlu^{49}$ </u>, or described as in AMT 51,5 rev 4' <u> $\check{s}itil$ </u> or ziqip(ŠE.KAK) kasî(GAZI^{SAR}) "offshoot of kasû" in broken context. With this in mind, <u> $\check{s}it\hat{u}$ </u> cannot be "offshoot".

It is this particular vein structure of the tamarind that vividly reminds us of the passage from tablet V of the Witchcraft Series $Maql\hat{u}$ mentioned above. The author of $Maql\hat{u}$ has indeed achieved a literary feat by so ingeniously using the pun on the verb $kas\hat{u}$ "to bind" and the name of the plant. This plant can be none other than the tamarind. We now have an understanding of this analogy. Additionally, the šitê kasî "the šitû of the kasû" can be identified as the designation of the vein-like structure that encloses the fruit as in a net (see III. 2, B and C, after the fruit has been removed). It is a part of the $kas\hat{u}$ and not a kind of $kas\hat{u}$.⁵⁰ Therefore, the materia medica in the prescriptions in BAM 158 i 22 and ii 11-12 and BAM 228 obv 13 mentioned above can be identified as the tamarind and "tamarind veins", two separate entities. In light of the identification of the $\tilde{s}it\hat{u}$ of the tamarind, the identity of the *šitû* in the eye disease becomes clear and the connection suggested in CAD with the *šatû* B "to weave, to spin, entwine, interlace" is indeed viable. However, the analogy with the eye disease is more than likely not a reference to a "spider's web"⁵¹ but rather it is an analogy to the reddish-brown "tamarind veins" that come out of the stem, thus referring to an eye disease that involved a pronounced reddening of the thin capillaries of the eye around the iris, easily identifiable by the \bar{a} sipu.⁵² An identification of this disease is beyond the scope of this article. The conglomerate of tamarind veins was used as a known materium medicum.

The kasû "Tamarind" and carnelian

The reddish-brown color of $kas\hat{u}$ is established by its association with the stone $s\bar{a}mtu(GUG)$ "carnelian". Carnelian is a semi-translucent to translucent brownish-red mineral. It is often confused with sard which, however, is a much darker shade of brownish-red and is duller.⁵³ A variety of carnelian is ^{NA4}GUG GAZI SAR which is best translated as "*kasû* carnelian". The reading *kasânītu* for this stone is a "free restoration" and not attested.⁵⁴ This variety of carnelian is described in *abnu šikinšu* as "spotted with *kasû*"⁵⁵. Clearly reference is being made to the tiny brownish-red inclusions (spots) that can best be seen in the lighter pale variety of carnelian. Such inclusions are iron oxide impurities, which here are being compared with *kasû* seed, which are reddish-brown. ^{NA4}GAZI SAR read *aban kasî* refers to the stone or seed of the *kasû*, as e.g. *aban suluppi* "date stone" which is also attested in medical prescriptions.

The kasû "Tamarind" likened to diseased gallbladder

In an Old Babylonian extispicy text, the gallbladder is described as covered with $kas\hat{u}$: šumma(DIŠ) martu(EŠ) kasî samūti udduhat šamûm izannun "If the gall bladder is spottedwith red kasû-s, it will rain".⁵⁶ The gallbladder in animals and humans alike is a shade of

⁵¹ Scurlock and Andersen 2005: 199.

⁵³ Both carnelian and sard belong to the family of Chalcedony and are silicates.

⁵⁶ Scheil 1930: Tablette B 150:3. The logogram EŠ in the reading BÀ is read *amūtu* "liver" and the logogram ZÉ is *martu* "gallbladder". In his study of gallbladder omina, K. Riemschneider 1965 established that EŠ is to be

⁴⁸ CAD Š/III s.v. *šitû* B 143a.

⁴⁹ CAD Z s.v. *ziqpu* A 127 a and b.

⁵⁰ Contra CAD Š/III s.v. *šitû* B 143a.

⁵² Labat 1950: 52 G 11 šumma(DIŠ) $ser `an(SA) n\bar{e}(IGI.MIN)-su knma(GIM) si-te-e [kasi(GAZI^{SAR})...]$ which is a very likely emendation CAD Š/III s.v. situ B 143a. See also Attia 2000: 49-50 and Fincke 2000: 138.

⁵⁰ Both carnelian and sard belong to the family of Chalcedony and are silicates.

⁵⁴ Landsberger and Reiner, *MSL* X 8 Hb XVI line 137 and commentary for this line, 19.

⁵⁵ A. Schuster-Brandis 2008: 24.

green due to the presence of bile. As the organ is somewhat semi-transparent, the color of the bile "shimmers" through. The gallbladder stores the bile produced by the liver. Emptied of bile, as for example after the consumption of food, the organ is light pinkish-red covered with thin capillaries.⁵⁷ As the gallbladder in this extispicy text is completely spotted (*udduhu*) with *kasû*, it is clearly not a "healthy" gallbladder, and it is likened to the reddish-brown *kasû*. Mammals, such as horses, sheep, goats, like humans, have gallbladders and about 10% may suffer from gall stones. It is likely that the gallbladder in the text above is not smooth but covered by lumps which are likened to segmented *kasû* fruit or seeds. The analogy of the unhealthy gallbladder as being covered with "lumpy" brownish-red tamarind or its seeds can now be understood. Unlike the smooth texture of the healthy dark reddish-brown liver, the cirrhotic liver in both humans and animals is considerably lighter colored and "lumpy" as if covered with tamarind segments or seeds. Whether we consider the textual reference as referring to the gallbladder or the liver, the analogy to the tamarind is applicable.

The kasû "Tamarind" and uhūlu(NAGA) and the "horned" or "sprouting" uhūlu(NAGA.SI)

It should be mentioned, however, that in the stone list in Hh XVI $kas\hat{u}$ is listed with salt and alkali. We read: line 236 ^{NA4}MUN= *aban tābti*, line 237 ^{NA4}GAZI.SAR= *aban kasî*, line 238 ^{NA4}NÁG= *aban uhūli*. Here $kas\hat{u}$ is listed between "rock salt" and "*uhūlu* alkali stone". The identical order appears also in the Ras Shamra Recension.⁵⁸ These same three items appear in a different order in a Sumerian text giving a series of medical prescriptions identified by Civil, with *uhūlu qarnānu*(NAGA.SI^{SAR}), *tābtu*(MUN), and *kasû*(GAZI). ⁵⁹ The determinative SAR after NAGA.SI is unusual, but it probably was intended to designate the "sprouting" plant. Furthermore, in Hh XI in a listing of ten *tukannu* leather bags for specific items, such as silver and gold the salt, *kasû*, and *uhūlu* are listed in the identical order as mentioned above, *tukkan tābti*, *tukkan kasî*, and *tukkan uhūli*.⁶⁰ It is interesting to note that other references to leather bags are for twin bags *tū'amātu* (probably to be put on a beast of burden) and for a bag for the stylus, *tukkan qan tuppi*. These entries could point to the importance and the practical daily use of the items they were to carry. One of which was *kasû*.

As defined in CAD, $uh\bar{u}lu$ is "a plant and its product (soda ash) used as a source of alkali".⁶¹ Oppenheim suggests that NAGA is "used in a double way": as spice and as a source of potash after burning the plant.⁶² It was used as a cleansing agent for washing the body and fabrics.⁶³ Although the texts do not inform us about the Mesopotamian process of fulling, we know that the fullers received a certain amount of both $uh\bar{u}lu$ (NAGA) and "horned" or "sprouting" $uh\bar{u}lu$ (NAGA.SI) which were used in clothmaking. Fulling is particularly used in wool clothmaking.⁶⁴ The $uh\bar{u}lu$ also plays an important role in the manufacture of glass.⁶⁵ In medical texts it is used diluted in water to bathe diseased parts of the body. Although its use in medical texts is similar to that of $kas\hat{u}$, this use is not as varied. There are, for example, no

⁵⁷ Gray's Anatomy for Students, 332 (Drake et al. 2015).

⁵⁹ Civil 1960: 62, lines 103-105 and p.70 comments for lines 103 and 105. kasû is translated "mustard".

read *martu* in some instances and presents a new edition of the texts published by Scheil in 1930. Riemschneider 1965: 128 and n.15. CAD A/II s.v. $am\bar{u}tu$ A 96b. In the Zeichenliste (2nd ed. 2010) sub EŠ, Borger expresses doubt concerning the reading with a question mark. CAD E s.v. $ed\bar{e}hu$ "to cover" 24b. In this context "spotted" would be more suitable.

⁵⁸ Landsberger and Reiner, MSL X 11 Hh XVI line 237, and the Ras Shamra Recension 44, line 185-187.

⁶⁰ Landsberger, *MSL* VII 132 Hh XI, lines 189-191. In the Commentary HAR-gud to HAR-ra=hubullu XI, 149, *tukkan kasî* is omitted.

⁶¹ CAD U and W, 48b, s.v. *uhūlu*.

⁶² Oppenheim 1948: 6.

⁶³ Oppenheim 1988 74b.

⁶⁴ Waetzoldt 1972: 172.

⁶⁵ Oppenheim 1988: 43.

references of dried and ground $uh\bar{u}lu$ sprinkled on a sore, while there are several references of $kas\hat{u}$ used in this manner.

It is very difficult to botanically identify the kind of alkali-plant from which the ashes were won, as there are a number of possibilities. They all belong to the *Amaranthaceae* family, under which many genera are classified. The effort to narrow down the possibilities by identifying these plants through their Arabic names has proven to be of little help. Some common Arabic names for these shrubs are *ushnān*, *ishnān*, *khureizeh*, *huradh*, *ghasūl*.

The difficulty lies in the fact that our botanical differentiation is not always applied. Some names refer to alkali shrubs that scientifically do not belong to the *Amaranthaceae* family or the same name is given to more than one genus of the *Amaranthaceae* family.⁶⁶ The search could be limited to those alkali-plants found in the steppes and the Iraqi/Syrian desert, as these plants were readily available as sources of lye and soda. Interestingly, the source of pure uhulu qarnanu "horned/sprouted alkali" is said to come from the steppes.⁶⁷ The species of alkali plants found in the Iraqi/Syrian desert generally belong to three genera.⁶⁸ Although we can only narrow down the botanical identification of uhulu, we can conclude that it was, together with tabtu "salt" and kasu "tamarind", one of the three important staples found in a Mesopotamian household, which would help to explain their mention together as a group.

The kasû "Tamarind" in dyeing textiles

Although little is known about the nature of the dyes used or the process of dyeing textiles in Mesopotamia in general, the British Museum tablet WA 62788, first published by E. Leichty⁶⁹ with transliteration and translation, offered an initial insight into the process of dyeing wool. After adding a join, WA 62788+82978, I. Finkel published this Neo-Babylonian tablet dating from the 7th century B.C. ⁷⁰ offering a transcription and a translation. The instructions in one section on the reverse, section vi provide us with evidence for the use of *kasû* in dyeing wool.

- 10 *kasû*(GAZI.SAR) *ana mê*(A) *tanaddi*(ŠUB) *ina išāti*(IZI) *tušabšal*(ŠEG₆-*šal*) *ta-šá-hal šipātu*(SÍG) *u*₄-*ri-qu*
- 11 *a-na libbi*(ŠÀ) *tanaddi*(ŠUB) *ina išāti*(IZI) *tušabšal*(ŠEG₆-*šal*) *tušellā*(E₁₁)-*ma šipātu*(SÍG) *ar-ga-man-nu*
- 10 You put tamarind in water (and) boil it on fire. You strain it (and) put the *urrīqu* wool in it. You boil it on fire. You take it out and (you will have) *argamannu* wool.

This section deals with dyeing $urr\bar{\iota}qu$ wool to produce argamannu wool, "pale blue wool to red-purple wool". ⁷¹ Although the text does not tell us what part of the $kas\hat{u}$ "tamarind" was boiled and for how long, we know that the leaves and flowers of the tamarind are used today

⁶⁶ Librairie Du Liban Publishers-Electronic Dictionary, Nahal's Dictionary of Scientific plant names (En/Ar) s.v. "Salicornia" which is one of the genera of the *Amaranthaceae* family. Post 1896: 686, offers a somewhat different classification.

⁶⁷ It is referred to as *ša ištu šadî* which is rendered "from the mountains". As we know the general identity of this plant, the rendering "from the steppeland" would be more appropriate. See CAD Š/I s.v. *šadû* A2 58b.

⁶⁸ Family: *Amaranthaceae*. Genera: *Arthrocnemum*, *Anabasis* and *Salicornia*. The species from the latter two being more common.

⁶⁹ Leichty 1979.

⁷⁰ Reference to this tablet is made in Cardon (ed.) 1999-200: 64-65. In the bibliographical note, reference is made to I. Finkel and H. Granger-Taylor, "Neo-Babylonian Recipes for Dyeing Wool", *Dyes in history and Archaeology* 16-17, 1999 in print. This publication for the years 1999-2001 was located at the Rathgen-Forschungslabor in Berlin, but it did not contain the article. The article was only found *online* under: www.tekhelet.com/pdf/AssyrianTablet-Finkel.pdf [accessed 3 May 2019]: 1-4.

⁷¹ www.tekhelet.com/pdf/AssyrianTablet-Finkel.pdf [accessed 3 May 2019]: 3. A discussion of the Mesopotamian color scheme falls beyond the scope of this paper.

as mordants in dyeing, and the ground seeds are used for sizing cotton.⁷² But boiling the tamarind pod in water creates a dye of different shades of brown and reddish-brown, even grey depending on the mordant added.⁷³ The husk of the tamarind seed is rich in tannin which acts as a mordant. Possibly in the dyeing process cited above, the whole pod was boiled. In fact, the tamarind could be used as a dye and as well as a mordant. It is interesting to note that in most instructions that are found on this fragment (sections iv, v, vii, viii) alum (potassium aluminum sulfate) is boiled on fire with the wool that was to be dyed. Alum is a known mordant. In section vi the tamarind assumes this role and, hence, alum is not needed.

The kasû "Tamarind" in the making of beer

In the Neo-Babylonian period larger amounts of $kas\hat{u}$ seem to have been required. This is specially the case in the making of beer. Although Mesopotamia had a long tradition of beer brewing going back into the third millennium B.C., the process of brewing was not uniform and different kinds of beer were available. In order to better understand the role of $kas\hat{u}$ in this process, let us briefly look at what the Mesopotamian brewing process entailed. Generally, beer was made of barley (rarely emmer-wheat). First the barley was allowed to germinate by keeping it damp in large containers. The process of malting was then stopped either by spreading the malt on the ground under the sun, or by roasting it in an oven until dry. This green malt was, therefore, the initial product. Before it was ground, the remaining hulls still found in the green malt were broken up by pounding ($has\bar{a}lu$). The coarsely or finely ground malt was sifted, and used in various ways, but especially in the making of beer. It was also a trading commodity.⁷⁴

Before a brew was made by adding water to the ground malt, a second product that was prepared separately was added to the malt. This product was designated as *bappiru*(BÁPPIR) "beer bread" written with the combination of two signs ŠIM "aromatic plants" and NINDA "bread" which in fact informs us to some extent about the identity of this "beer bread". It was evidently an important ingredient in making beer. Although it is not clear whether barley or wheat was used, the bread dough was probably made of unmalted grain to which aromatic ingredients were added, the identity of which remains unknown.⁷⁵ The dough was then shaped into cakes. But, as W. Röllig mentions, the use of such aromatic ingredients need not have been identical throughout the ages.⁷⁶ Varieties of "beer bread" were also trading commodities.⁷⁷

The next step in preparation process was the production of the beer-mash which was made by combining the *bappiru* "beer bread" and the malt and adding some water. The mash was then heated in an oven and allowed to cool by spreading it on reed mats made specifically for this purpose.⁷⁸ After cooling the beer-mash, an additional sweet substance called *billatu*(DIDA) was added. Like the *bappiru* "beer-bread", the *billatu* served the purpose of spicing the beer and could have been added in liquid or dry form. It is not certain whether it was added generally to all beer or possibly replaced the *bappiru* entirely as a spicing agent. As the *billatu* was especially sweet, it would have enhanced the fermentation process about which little is known.⁷⁹ Finally after adding more water, the resulting beer-mash was poured into fermentation vats.

⁷² Krishnamurthy 2008: 363. <u>Note</u>: A mordant is a substance that fixes the dye to the cloth and makes it color fast. Sizing is the process of adding a substance to strengthen the yarn thus reducing breakage.

⁷³ www.asiantextilestudies.com/brown.html#g [accessed 8 May 2019]: Tamarind or Asam Jawa.

⁷⁴ Röllig 1970: 19-21. For earlier discussions see, Oppenheim 1950: 6-16.

⁷⁵ Röllig 1970: 21-22. Also, Civil 1964.

⁷⁶ Röllig 1970: 22.

⁷⁷ Röllig 1970: 23.

⁷⁸ Röllig 1970: 23-24.

⁷⁹ Röllig 1970: 24-25.

After this brief summary of the brewing process, what then was the role of $kas\hat{u}$? Although textual evidence of its use comes only from a few references from the Neo-Babylonian period, it is likely that it either formed one of the ingredients in the *bappiru* "beerbread" or was part of the *billatu* mixture. One particular reference that should especially be considered in attempting to identify $kas\hat{u}$ in this process refers to the preparation of 40 empty vats for *billatu*-beer, for which 34 *kurru*(GUR) of barley and 10 *kurru*(GUR) of *kasû* were needed.⁸⁰ Therefore, *kasû* formed about one-third of this mixture. This is not to be confused with the sweet *billatu*-mixture mentioned above. In the late Neo-Babylonian period *billatu* referred to generic beer and the traditional word for beer *šikaru*(KAŠ) now referred to the beer made specifically from dates.⁸¹ Many kinds of beer were brewed in Mesopotamia, each presumably with its own particular taste. Two kinds of beer, however, that are designated by their color are the "dark beer" (KAŠ.GE₆) and the "red-brown beer" (KAŠ SI₄ or KAŠ.SA₅). These beers are attested as early as the Presargonic period in Mesopotamia.⁸²

The process of beer manufacturing was presented above in some detail in order to establish at what stage a flavoring agent would be added. Although the identity of all of the spices is not known, we are told of one flavoring agent ($kas\hat{u}$) the tamarind. Tamarind was, therefore, added to either the *bappiru* "beer bread" or the *billatu* in liquid or paste form. In this capacity the sweet tamarind was probably used not only to enhance the sweetness of the beer, but also to enhance the fermentation process. This would explain the surprisingly large amount of tamarind (one-third of the total amount of barley) needed to prepare the *billatu* beer. Of the various types of beer available in ancient Mesopotamia it is likely that the "redbrown beer" (KAŠ SI₄ or KAŠ.SA₅) owed its name to the tamarind additive.

The kasû "Tamarind" in the preparation of fish

Mesopotamian texts inform us that $kas\hat{u}$ was used not only to flavor beer, but also to flavor fish. Together with salt it played an important role in the preparation of fish.

The lexical text Hh XVIII begins with a long list of fishes, "Fish Catalogue", lines 1-137, the final ten lines of which deal with their preparation. There are two references of particular interest to us, line 126 $n\bar{u}n$ $t\bar{a}bti(MUN KU_6)$ "salt fish" and line 127 $n\bar{u}n$ $kas\hat{e}(GAZI.SAR KU_6)$ "kas \hat{u} fish"⁸³ Evidently, the first instance refers to fish that have been preserved in salt. The $n\bar{u}n$ kas \hat{e} "kas \hat{u} fish", on the other hand, probably referred to fish spiced with kas \hat{u} . This is followed in line 128 by $n\bar{u}n$ silli lit. "shade fish", probably to be understood as "fish slowly dried in shade".⁸⁴ Finally it lists the cooking procedures, as for example, "in hot ashes" and various forms of grilling. A closer look at these final lines informs us that these procedures were not exceptional, but rather regular and well-known ways of handling fish. Both salt-water and fresh-water fish from the rivers and canals formed part of the Mesopotamian diet. The two most popular kinds of river fish cherished even today in Iraq are the $pur\bar{a}du(SUHUR)$, Arabic šabb $\bar{u}t$ and the arsuppu(EŠTUB), Arabic bunni. The bitr $\hat{u}(SUHUR.MAŠ)$, Arabic bizz is also popular.⁸⁵ These are species of the carp family *cyprinidae*.

The use of tamarind in a particular preparation of carp that traditionally is said to go back to ancient times is, in fact, a national dish in Iraq. This preparation is called in Arabic *maskoof*, pronounced in Iraq *masgoof*. Along the banks of the Tigris one sees small flickering

⁸⁰ VAS 3 1907: 14 Text 47 lines 1-3. 1) 40 DUG *dan-nu-tú ri-qu-ti*; 2) 34 GUR *uṭṭatu*(ŠE.MAŠ); 3) 10 GUR *ka-si-ia šá bi-li-ti* Also quoted in Ungnad 1937: 76 s.v. *kasiia*.

⁸¹ Röllig 1970: 41.

⁸² Bauer 1972: 215 nr. 60 I 1,6.

⁸³ Landsberger, MSL VIII/2. The Series HAR-ra=hubullu tablets XIV and XVIII, 120.

⁸⁴ Salonen 1970: 187.

⁸⁵ Salonen 1970: 241-242.

fires around which the freshly caught fish impaled on short sticks are arranged, either whole or cut open lengthwise "butterflied".⁸⁶ In other words, it is not grilled over a direct fire. The fish is spiced with tamarind and basted with a marinade of tamarind, olive oil, and salt. The two kinds of carp that are suitable for this dish are the *purādu*(SUHUR), Arabic šabbūt and the *arsuppu*(EŠTUB), Arabic *bunni*. Depending on the size of the fish, this indirect grilling could take well over an hour. There are a number of Akkadian verbs that are rendered in English by "grilling" or "roasting", without necessarily considering the manner in which the grilling was to be performed. In an attempt to find a comparable designation for indirect grilling, the reference in Hh XVIII 129 (restored from the Ras Shamra late Forerunner 72c) IZI.TAG.GA KU₆ = $n\bar{u}nu$ ša išāta laptu⁸⁷ might express that particular manner of grilling. Salonen translates this line "grilled fish", but adds "TAG = $lap\bar{a}tu$ 'anrühren', vom Feuer gesagt, d.h. 'to grill'".⁸⁸ In fact *lapātu* is the key to understanding this expression. Literally it must be rendered "fish that is lightly touched, or has been touched by fire" which clearly expresses the fact that it is not grilled over direct heat. It should be noted that Hh XVIII offers other modes of preparing fish: Line 17 IZI.KU₆ = $n\bar{u}nu$ *išāti* "fire fish" i.e. fish grilled over an open fire; and line 18 IZI.TÁ.NA.A = $n\bar{u}nu \ timri$ "ash fish" i.e. fish cooked in hot ashes.⁸⁹ All these are known modes of cooking fish. One is entitled to ask whether the Mesopotamian enjoyed "masgoof" by the name nūn kasê(GAZI.SAR KU₆) "tamarind fish"?

The kasû "Tamarind" in the making of cheese

Evidently $kas\hat{u}$ was used in some capacity in the making of Mesopotamian cheese $eq\bar{i}du$ (GA.ÀR). In the lists of various kinds of cheeses GA.ÀR.GAZI " $kas\hat{u}$ cheese" appears in the Old Babylonian Forerunner 15 to HAR-ra XX-XXIV line 350 and GA.ÀR.A.GAZI appears in the Old Babylonian Forerunner 17, col vi 18.⁹⁰ Cheese was made from curdled milk, i.e. milk to which a curdling agent had been added. In Arabic sources rennet was added. But an Akkadian equivalent term for such a curdling agent is not known. In later Greek and Roman times plants or fig juice served as the curdling agent.⁹¹ Although we do not know the manner in which $kas\hat{u}$ was used in the process of Mesopotamian cheese making, it is not unlikely that it was used as the curdling agent. It is precisely the presence of tartaric acid in tamarind that would make a suitable curdling agent in the milk.

Conclusion

This paper has provided an answer to the perplexing question of the nature of the $kas\hat{u}$ found in Babylonian-Assyrian medical texts. Scholars have attempted identifications, but have hitherto not considered the full extent of the textual evidence available. There is only one plant that fulfills all the evidence, and that is the tamarind (*Tamarindus indica*), specifically the segmented pod of the tamarind tree. The hard-shelled pod contains a fruity pulp enclosed by large veins and smaller filament-like veins that burrow into the fruit enclosing it as in a net. This explains the statement in Maqlû that the witch's spells bind her like $kas\hat{u}$. A major contribution of this study is the identification of the $šit\hat{u}$ of the $kas\hat{u}$ in BAM 158 and 228 as these veins and their use as a separate *materium medicum*. This identification also explains the visible symptom of an eye condition that involves the pronounced reddening of the capillaries.

- ⁸⁹ Landsberger, MSL VIII/2, 101.
- ⁹⁰ Reiner and Civil, MSL XI 157 and 161.

⁸⁶ Salonen 1970: 192 Akkadian letû(HA.AL.DAR.(R)A) in the "Fischkatalog" "aufgespaltener Fisch".

⁸⁷ Landsberger, MSL VIII/2, 120.

⁸⁸ Salonen 1970: 204.

⁹¹ Stol 1997 RlA VIII s.v. Milch(produkte) A. In Mesopotamien. 198a.

Through the botanical identification of $kas\hat{u}$ with "tamarind pod" we have been able to explain a number of questions as to the use and effect of this plant. The $kas\hat{u}$ "tamarind" is found in numerous contexts, from its association with the inclusions in carnelian and the spots on a diseased gall bladder, through the process of dyeing wool and to its use in the preparation of fish by cooking it by indirect heat and the production of beer. The identification of $kas\hat{u}$ "tamarind" as the curdling agent in cheese making is another contribution of this study.

The $kas\hat{u}$ "tamarind" seems to have been a staple condiment evidently for all social classes throughout Mesopotamian history, even being mentioned on a stela of Aššurnaşirpal II that describes the celebration, including the food, drink, and spices used at the opening of his royal palace at Kalhu (Nimrud). The fact that salt, $kas\hat{u}$ "tamarind", and uhulu alkali are listed in the same order when they appear could point not only to the importance of these three items in general but also to their practical daily use.

The tamarind was, therefore, one of the staples in the Mesopotamian diet, and together with salt and lye formed a "trio" that is listed together in lexical texts, as they were a necessity in every household. The well-known Sumerian proverb can now find its *Sitz im Leben*

Let the poor man die, let him not live.

When he finds bread, he finds no salt.

When he finds salt, he finds no bread.

When he finds tamarind, he finds no meat.

When he finds meat, he finds no tamarind.

When he finds oil, he finds no jar.

When he finds a jar, he finds no oil.⁹²

It was better to die than live without the essentials that keep man alive: bread, salt, tamarind, meat, and oil.

List of Abbreviations

AHw	W. von Soden, Akkadisches Handwörterbuch
AMT	Thompson, R. Campbell. Assyrian Medical Texts
BAM	Köcher, F. Babylonisch-Assyrische Medizin in Texten und Untersuchungen
BE	Babylonian Expedition of the University of Pennsylvania, Series A: Cuneiform
	Texts. H.V. Hilprecht (ed.)
CAD	The Assyrian Dictionary of the University of Chicago
CUSAS	Cornell University Studies in Assyriology and Sumerology
CT	Cuneiform Texts in the British Museum
MSL	Materialien zum sumerischen Lexikon
RlA	Reallexikon für Assyriologie
UET	Ur Excavation Texts
VAS	Vorderasiatische Schriftdenkmäler der königlichen Museen zu Berlin

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⁹² Alster 1997: 16, Collection 1.55.

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