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## The Akkadian Medical Text KUB 37.1<sup>1</sup>

### Abstract

The present article offers a current edition of the Akkadian medical text KUB 37.1 from Hattuša, first published by F. Köcher in 1952. It assesses interpretations proposed by other scholars and examines some aspects of the professional and cultural environment in which the text was composed.

Keywords: Hittite Medicine, Akkadian, Medicinal Plants

### Introduction

More than half a century has passed since the cuneiform Akkadian text KUB 37.1 was published by F. Köcher (1952: 47 ff., henceforth: Edition) under the title *Ein akkadischer medizinischer Schülertext aus Boğazköy*. The title betrays Köcher's<sup>2</sup> interpretation of the tablet as a *Schülertafel*, i.e., the exercise of a student aiming to become a professional scribe. In the present contribution an updated edition of the text is provided, with philological and linguistic commentaries on some points that remained unexplained at the time of the Edition but can be explained today. Finally, the interpretation of the original function of the text will be briefly discussed.

### Philological Note to the Transliteration

In the year following his Edition of this single-tablet text Köcher also provided the cuneiform copy KUB 37.1. His copy, however, though he drew the tablet as if it were complete up to its right edge, does not contain the words included in his edition at the ends of lines

<sup>1</sup> I wish to thank Prof. C. Karasu for collating the right edge of the tablet (see Philological note) and Prof. M. J. Geller for his many suggestions regarding the restoration of missing signs and possible interpretations of several passages. Abbreviations employed are those found in the Chicago Hittite Dictionary and the Chicago Assyrian Dictionary.

<sup>2</sup> This interpretation is followed by Laroche (CTH 808) and Haas (2003: 120, 315).



19, 26 and 28. In fact, fragment 15/i, which constitutes the upper right portion of the recto, is quite damaged along its right edge, and the final signs of lines 19 (*pár-šú-un-ti-[x]*), 26 (*ta-bal-lal*) and 28 (*šū-n[é-e]*) are broken away. I have consulted Prof. C. Karasu, who kindly agreed to collate the text for me in Ankara, and the signs Köcher neglected to copy in KUB 37.1 are in fact still readable. The sign *n[é]* is partly readable on the right edge at the end of line 28, and the word *pár-šú-un-ti-[x]* (end of line 19) is located on the reverse of tablet, as the line wrapped all the way around the edge. As for *ta-bal-lal* (end of line 26), only traces of the signs on the right edge are readable today. I thank Prof. Karasu for his help and for the photographs he sent me, which enabled me to complete the present edition.

### Transliteration<sup>3</sup>

Obv.

- 1 [DIŠ NA D]Ù<sup>?</sup>.A<sup>?</sup>.BI<sup>?</sup> LÚ ULÙ<sup>?</sup>/URU<sup>?</sup>(.)L[U<sup>?</sup> ]-ik ÛHA.AB Ú.RA.AN.[NA]  
 2 GIŠ.SIM<sub>LI</sub> GIŠ.SIM[ Ûni]-nu-ú ta-ḥaš-šal 1-iš<sup>1</sup> tù-sa-ma-aḥ  
 3 i-na A ÛGAZI tù-ša[b-šal ta-ra-ab-bak LÚ BI] ta-ša-na-am-me-ed
- 
- 4 KL.MIN ZÀ.AḤ.LI<sup>SAR</sup> ḥa-šé-e x[ GL.K] Û.GA NINDA ŠE.SA.A ÛGÍR.TAB GEŠTIN.KA<sub>5</sub>.A  
 5 ša-an-ba-li-it-tù ta-ḥaš-šal i[-na KAŠ.]SAG tù-šab-bal GIM ra-bi-ki  
 6 ta-ra-ab<-bak> ḥu-wa-ar-ti-in GIM-an za-nu-uz-zi LÚ ša-šu ta-ša-na-me-[ed]
- 
- 7 KL.MIN ŠIM<sup>d</sup> Ninurta Ûur-ḥ nu<sup>1</sup>-ú Ûa-ḥ zu<sup>1</sup>-pí-ru ta-ḥaš-šal<sup>4</sup> ina KAŠ.SAG tù-šab-š[al]  
 8 GIM ra-bi-ki ta-ra-ab-bak LÚ BI ta-ša-na-me-ed
- 
- 9 KL.MIN GIŠ<sup>ERIN</sup> GIŠ<sup>sa-la-bi-ta</sup> ḥ ku-u-un GIŠ<sup>sa-la-ḥ</sup> bi<sup>1</sup>-ta ú-ul i-di  
 10 GIŠ<sup>dap-ra-a-na</sup> GIŠ<sup>NUMUN</sup> kà-na-ak-ti GIŠ.SIM<sup>as-sa</sup> GIŠ.SIM<sup>AŠ</sup> GIŠ<sup>ni-qib-ta</sup>  
 11 GEŠTIN.KA<sub>5</sub>.A Û[sí<sup>2</sup>-i<sup>?</sup>]-ḥa Ûzu-pu-uḥ-ra Ûbu-ša-a-na [Ûi]n-zu-ru-uḥ-a  
 12 GIŠ.SIM<sub>LI</sub> Ûar-ga-an-na GIŠ<sup>GL.DÜG.GA</sup> GIŠ.SIM<sup>GÚR.</sup>[GÚR] GIŠ.SIM<sup>[GAM].</sup>MA  
 13 GIŠ.SIM<sup>SEM.ŠE.LÁ</sup> GIŠ<sup>ki-ir-ki-ri-ya-an-na</sup> Ûbu-ra-ša GIŠ<sup>[IM]</sup>ŠEŠ Ûsi-ḥa  
 14 Ûar-ga-an-na NUMUN GIŠ<sup>šu-né-e</sup> ḥa-šu-ú GIŠ<sup>bi-nu</sup> GIŠ<sup>IN.NU.UŠ</sup> GIŠ<sup>GIŠIMMAR</sup>  
 15 GL.ŠUL.ḤI[A] ŠIM<sup>HLA</sup> an-nu-ti kà-li-ši-na ina GIŠ<sup>GAZ</sup> ta-ḥaš-ša-al  
 16 i-na ḥ ma-ma-na-ša-ti ba-at-tu-na-a-ti pu-wa-a-ti ZÍD ZÍZ.AN.NA TÉŠ.BI ta-bal-lal  
 17 i-na GEŠTIN.[SU]R.RA GIM ra-bi-ki ta-ra-ab-bak LÚ šu-wa-tú ta-ša-na-me-ed
- 
- 18 KL.MIN ḥ<sup>1</sup> a-zu-pí-ra ša-an-ba-li-il-ta GIŠ<sup>a-zu-ki-ra-ni</sup> GI<sup>[š x x x]</sup>  
 19 ša-at-ḥ ti<sup>1</sup>-[i]a-ar-ḥi-in-ni ḥur-li-li Û[ x x ]-ḥ mi<sup>1</sup> GIŠ<sup>kar-šu</sup> ÛTIR.[TIR] ḥ pár-šú-un-ti-[x]  
 20 Ûša-mu-ut-ta ÛŠE.LÚ Ûḥur-ša-an ÛZÀ.AḤ.LI Ûši-in-bu-ra-[tù]  
 21 Ú.RA.AN.NA GIŠ<sup>šu-na-a</sup> TÉŠ.BI ta-bal-lal ina ZÍD ku-na-ši ta-bal-l[al]  
 22 ḥ<sup>1</sup> ina<sup>1</sup> GIŠ<sup>GEŠTIN.SUR.RA</sup> GIM ra-bi-ki ta-ra-ab-bak LÚ BI ta-ša-me-e[d]

<sup>3</sup> Akkadian is italicized, while the other languages (Hittite, Hurrian, Luwian) are not. Substantive differences vis-à-vis the Edition are discussed in the commentary. Mere updates of conventions are not.

<sup>4</sup> The word *ta-ḥaš-šal* added above the line.







- 13 [ x x x x x ]-ta tak-pi-ir-ta NAM.TAR.E.MAH<sup>HIA</sup>  
 14 [ x x x x ] x e-eš-ša-an-zi nu a-pu-ú-uš-pát e-eš-ša-an-zi

(The rest is lost)

### Translation

Obv.

- 1 [If a man] (unclear) [ ] HA.AB-plant(?), fenn[el]  
 2 juniper, [ ni]nû-plant you pound, you mix together,  
 3 you coo[k] in mustard?-water [and make an infusion. On the same man] you keep  
 placing bandages (with the tincture).  
 4 (For) the same (symptoms): cress, hašû-plant, [re]ed, roasted cornbread, scorpion-  
 plant, fox-vine-plant,  
 5 Fenugreek you pound, you boil (them) i[n (a container of) be]er, (into a) soup  
 6 you tur<n> (them) (gloss:) *he cooks it like a soup*. On the same man you keep placing  
 bandag[es] (with the tincture).  
 7 (For) the same (symptoms): you pound nikiptu-plant, urnû-plant (and) saffron (and)  
 you bo[il] them in (a container of) beer,  
 8 you turn them (into a) soup. On the same man you keep placing bandages (with the  
 tincture).  
 9 (For) the same (symptoms): cedar, šalabitu-plant (gloss:) *this šalabitu-plant I do not*  
*know*  
 10 juniper, kanaktu-seed, myrtle, asa foetida (?), nikiptu-plant,  
 11 fox-vine-plant, [sî]hu-wood (?), cedar, būšānu-plant, [i]nzuruhu-plant,  
 12 juniper, argannu-plant, aromatic reed, kurku[ru-plant], šumla[lû-plant],  
 13 boxwood(?), kikkirānu-plant, juniper, myrrh, sîhu-wood,  
 14 (resin of) argannu-plant, seed of šunû-plant, hašû-plant, tamarisk, maštakal-plant,  
 silver-fruit-plant,  
 15 qan-šalāli-plant. All these herbs you pound in a (wooden) mortar  
 16 (gloss:) *he pounds in a mortar*, you mix all together in emmer flour,  
 17 you turn them into a soup in pressed wine. On the same man you keep placing  
 dages (with the tincture).  
 18 (For) the same (symptoms): saffron, fenugreek, azukirāni-[...]  
 19 šatti[y]arhinni in Hurrian [ ], cherries, ašl[u-rush] (gloss:) *paršunt*-[ ]  
 20 beetroot (?), coriander, hurša-plant, cress, šibburratu-plant,  
 21 fennel, šunû-plant you mix together, you mix with emmer flour,  
 22 in pressed wine you turn them into a soup. On the same man you keep placi[ng]  
 dages (with the tincture).



- 23 (For) the same (symptoms): reed, silver-fruit-plant, *ninû*-plant, hellebore (?), scor-  
pion-plant,  
24 wormwood, *argannu*-plant, *šunû*-plant, fenugreek,  
25 UR.Ē.Ē-plant bush (gloss:) (in Luwian/Hittite:) *kubbi*-plant, manna, x-plant,  
26 *pakišitti*-plant (gloss:) [x]-*am-mar-ḫu-wa-aš*, hellebore (?) you mix together with  
emmer flour,  
27 [in] beer you co[ok,] into a soup you turn them. On the same man you keep placi[ng]  
bandages (with the tincture).

- 28 (For) the same (symptoms): fenn[el, *š*] *akirû*-plant, seeds of *ḫurša*-plant, seeds of  
*nuḫurti*-plant, seeds of *šunû*-pl[ant,]  
29 [x] *kubbi*-plant [ x x x x x ] *kalbānu*-plant, *zuḫata*-plant, *ḫašû*-plant,  
30 seeds of the *urnû*-pl[ant x x x x x ]-*im* seeds of gamum, seeds of *šibburratu*-plant,  
31 [seeds of] *pak*[*kišitti*-plant] ...-*abbul*-plant (?), seed of the *ganašutu*-plant, seeds of  
*ḫuwal*[*li*]-plant, [...]  
32 [see]ds of *ala*[*mû*-plant x x x x x] in Hurrian, cress, seeds of *šamītu*-plant,  
33 ]-*ši* silver-fruit-plant, seeds of GURUN.KÙ.GI-plant,  
34 ] fir, seeds of *ninû*-plant,  
35 ] seeds of mandrake, seeds of cress <(gloss?:)> *fiel*[*d*](plants?)  
36 ] seeds of white pine, seeds of *argannu*-conifer, seeds of *sikillu*-  
plan[t,]  
37 seeds of] bush, seeds of *daprānu*-juniper, seeds of *ninû*-plant,  
38 seeds of] *kanaktu*-plant, seeds of *kikkirānu*-juniper, seeds of fir,  
39 these plants with but]ter you mix, and you mix them with beer,  
40 on the same man] you keep placing bandages (with the tincture)

- 41 ] he prepares  
42 ] you throw [into] (a vase of) beer or [...]

- 43 ] heliotr[o]pe  
44 ḪAŠḪUR-*ak*] *ī*-plant [...  
(The rest is lost)

Rev.

- 1 (unclear signs)  
2 ] the patient [  
3 the *takp*] *irta* you fulfill [  
4 the] *cleaning device* <sup>1</sup>you<sup>1</sup> [  
5 ] *cleaning device* [  
6 ] *x-az-zu-uk*  
7 ]-*ki še-ez-zu-ú* behind him [  
8 the pat]ient you tie again  
9 i]f (it is) the second month, if (it is) the third month  
10 ] you keep doing this over and over again



- 11 [ x x x x x ] (*has/have?*) *said (?)*. *Beyond this (point)*  
 12 [ x x x x ] *I kno[w]*
- 
- 13 [ x x x x ]-*ta* the *takpirta* NAM.TAR.E.MAH<sup>HIA</sup>  
 14 [ x x x ] *they keep doing and they keep doing those very (things)*.
- 

(The rest is lost)

### Commentary

**Obv. 1:** The reading [n]a-za-<sup>am</sup> LÚ ULÙ.L[U, suggested in the Edition and followed by Haas (2003: 120) ('[beim Jamm]ern<sup>2</sup> eines Menschen'), seems impossible after collation of the photographs. The first sign does not appear to be a NA, and the second sign looks more like an A than a ZA. Therefore, the idea that the recipes contained in the text would have been used in a ritual against melancholy (Haas l.c.) is unwarranted; as will become clear in the commentaries to the following lines, they are likelier to have been intended for the treatment of some kind of dermatological disease. The suggested restoration and reading [DIŠ NA D]Ù.A.<sup>BI</sup> LÚ ULÙ.L[U remains completely conjectural, as it is currently impossible to recognise therein the expected name of a disease. A reading [DIŠ NA I]ib-bi LÚ URU (?) D[AB is also possible (I thank Prof. Geller for this suggestion).

In general, the Edition is rather optimistic in translating the names of the plants and herbs, which it bases on the Dictionary of Assyrian Botany by R.C. Thompson, and several interpretations need to be discussed with a more cautious approach. The identification of the writing HA.AB with LAGAB (HAB) seems realistic, but to my knowledge no further occurrence has been discovered. Since the context is evidently a list of plants, there is no reason to doubt that this word, beginning with (and hence likely determined by) the sign Ú, was a plant as well. The translation 'hellebore' in the Edition and accepted by Haas (2003: 121) relies on an old interpretation that is no longer current. The HAB/būšānu plant must have been a fruit-bearing plant, from which juice was produced (cf. CAD B s.v. būšānu; Ertem 1974: 81; for occurrences in recently published texts cf. Worthington 2006: 41, with a tentative translation 'terebinth?'). Moreover, it may be worth noting that the form <sup>U</sup>HA in Sumerian may indicate a variety of fennel (cf. CAD Š s.v. šimru).

Another problem is represented by the sequence that Köcher reads šamran[na] and compares to the name of a plant that normally occurs in the form šimrānu.<sup>5</sup> The sequence, also attested at obv. 21 and 28, should be read as Sum. Ú.RA.AN.NA (cf. CAD U s.v. urantu), 'fennel' being an acceptable translation of Akkadian urantu.

**Obv. 2:** The <sup>GIŠ.ŠIM</sup>LI-plant, corresponding to Akk. burāšu, is now considered more likely to indicate not a 'pine' (as in Edition), but rather a variety of 'juniper' (CAD B s.v.; cf. also Worthington 2006: 41; Geller 2009: 39; Christiansen 2006: 88, n. 355). The ninû-plant was dissolved in beer to be drunk by the patients (cf. CAD N s.v.). The form 1-iš for išteniš remains unparalleled, though the logographic form 1-niš is not infrequent in medical texts (CAD I, s.v.).

<sup>5</sup> It should be noted, however, that other occurrences with a supposed initial šam- are neglected by CAD, which only lists šamru-, but registered by Thompson (1949: 61 ff.).



**Obv. 3:** For the still uncertain identification of <sup>U</sup>GAZI (formerly read SILÁ; so Edition) and the corresponding Akkadian word *kasû* with ‘mustard’ see MesZL Nr. 408 (cf. also Worthington 2006: 43 and already Landsberger / Gurney 1957: 337f.). A different suggestion, ‘common beet’, was proposed by Geller (1982: 193f.).

**Obv. 4:** Thompson (1949: 74) identifies the *hasû* with ‘thyme’ based on the comparison to the equally problematic Aramaic word *ḥš* (*ḥāšā*). It is now possible to add a further cognate, Ugaritic *ḤS/ŠWN* (UF 10: 431). However, the identification is not unproblematic, as one normally uses the leaves of the thyme plant, not its seeds, while according to the Mesopotamian medical texts (see CAD H s.v., for list of sources) it was the seeds of the *hasû* that were employed. The otherwise unknown <sup>U</sup>GIR.TAB can now be compared to Akk. *zuqi/aqīpānu* (AHw. s.v.). I wish to thank Prof. Geller for suggesting to me the integration GI.K]Ü.GA.

**Obv. 5:** On KAŠ.SAG, ‘beer’, see MesZL Nr. 358. On GEŠTIN.KA<sub>5</sub>.A cf. Akk. *karān šelēbi*, ‘fox-grape; fox-vine-plant’ (CAD K s.v.; and Veldhuis 1997).

**Obv. 6:** The Hittite gloss appears in this case to be a translation of the previous instruction. The formula GIM *rabīki tarabbak* is a *figura etymologica* that may have sounded complicated to the scribe. For the following occurrences of the same formula, however, there are no glosses.

**Obv. 7:** The *nikiptu*-plant (syllabically written at obv. 10), also called the Ninurta-plant, is now attested in a medical text from Sippar.<sup>6</sup> The interpretation of the *urnû*-plant as ‘mint’ (Edition) is possible, but is not supported by any evidence from the lexical lists; von Soden (AHw. s.v.) proposes ‘small cedar’ instead. The *azupīru*-plant (‘saffron’ in Edition: cf. also Ertem 1974: 81) corresponds to Sum. *ú-ḥur-sag* or *ú-kur-ra* (cf. Worthington 2006: 41 and Geller 2009: 39, where the latter Sumerogram, which also seems to correspond to the plant *nin(i)û*, is not noted).

**Obv. 9:** The *ṣalabitu*-plant that the scribe of the text does not know is a *hapax*, but may be compared with the *ṣa-la-it-tu* in Uruanna II 162<sup>7</sup> (Köcher 1955: 11). Is it possible that a plant by the name of *ṣalabitu* in fact did not exist and that the form is a mistake for *sala’ittu*?

**Obv. 10:** *kanaktu* (Sum. ŠIM.GIG) was a tree, the seeds of which were used for medical purposes, and the *kanaktu* was also used to produce oil (or mixed with oil and fats; see CAD s.v.). The translation ‘olibanum, frankincense’ (Edition) would be consistent with these practices, but remains highly speculative (thus also CAD l.c.). On the uncertain identification of <sup>GI</sup>ŠAŠ with the *asa foetida* cf. now Haas (2003: 121).

**Obv. 11:** The restoration [*si<sup>2</sup>-i<sup>2</sup>-*]*ha* is uncertain but seems likely, as the name also occurs in obv. 13; I thank Prof. Geller for the valuable suggestion. *Zu-pu-uh-ra* is a unique

<sup>6</sup> For an edition of the text see Heeßel / Al-Rawi (2003: 221–239); the new text provides no further clues on the nature and function of the plant; Worthington (2006: 44) translates tentatively ‘spurge, Euphorbia?’.

<sup>7</sup> See also CAD S s.v., where *ṣala’ittu* is found. It is naturally possible that *ṣa-la-bi-ta* is an aberrant writing for a regular variant, in which case the scribe of KUB 37.1 was evidently unable to recognize it.



variant of Akk. *šupuhru* (or *supuhru*), corresponding to GIŠ.ERIN.BAD in the lexical texts (cf. CAD Š s.v.; MSL 9: 162; Haas 2003: 281; Geller 2010: 101). On the well-attested correspondence between *būšānu* and Ú.ḪAB see CAD B s.v. However, no compelling reason exists to assume the translation ‘hellebore’ proposed in the Edition. The occurrences of *būšānu* seem to point to a dermatological use (against *būšānu*-disease, perhaps leprosy, and baldness; BAM 3 ii 35; AMT 25, 6 ii 9), and, while its use in medicine was frequent due to the presence of cardiac glycoside in several varieties, hellebore has no effect against dermatological conditions.

The translation ‘apple-tree’ for the *inzuruḫu* (or *inzāru*) plant is unacceptable, as it cannot account for the correspondence with ŠIM.ḪAB (‘smelly, stinking plant’) in BRM 4, 32: 14. Hence *inzāru* must be, with CAD I-J s.v., an aromatic plant (cf. also Finkel 2000: 150 f.).

**Obv. 12:** The *argān(n)u*, Sum. giš-šim-ár-gan-nu (loan from OB; MSL 5, 141; cf. CAD A/2 s.v.; Ertem 1974: 79f.; Worthington 2006: 41), appears to be some kind of conifer (as shown by the passage in STT 36:22 *ašar argānu itbuka terinnī[šu]*; quoted in CAD A/2 l.c.). The exact Akkadian translation of GL.DÙG.GA is *qanû fābu*, an aromatic reed. The Edition translates ‘calamus’, in which it is followed by Haas (2003: 315), who also suggests a possible translation *Cymbogon* (sic! recte: *Cymbopogon*) and a correspondence with Hitt. <sup>GIŠ</sup>*lazzai*-. On the correspondence <sup>GIŠ</sup>.(ŠIM)GAM.MA = *šumlalû*-plant, <sup>GIŠ</sup>.(ŠIM)GÚR.GÚR = *kur-kuru*-plant see MesZL Nr. 576; CAD Š s.v. *šumlalû*.

**Obv. 13:** <sup>GIŠ</sup>.(ŠIM)ŠEM.ŠE.LÁ and <sup>GIŠ</sup>*ki-ir-ki-ri-ya-an-na* may perhaps represent the same plant in logographic and phonetic writings (CAD K s.v. *kikkirānu*).

**Obv. 14:** The correspondence of GIŠ.IN.NU.UŠ/Ú.IN.NU.UŠ and *maštakal* is assured by several lexical lists (s. CAD M/1 s.v.); the meaning, however, remains obscure (Worthington 2006: 43, tentatively, ‘an alkaline plant’).

**Obv. 16:** ZÍD ZÍZ.AN.NA literally means ‘emmer flour’ (cf. also CAD P, 33).

**Obv. 18:** The writing *azukirāni*-, not recognised in the Edition, is probably to be identified with *azupirānu*-, a specific variety of *azupīru* (see CAD A/2 s.v. *azupirānu*), or, more likely, a plant resembling the *azupīru* but with different medical properties. Apparently, the two plants usually occur in very different contexts (CAD A/2 l.c.), but in this case they occur together in the same recipe.

**Obv. 19:** The Hurrian gloss *šattiyarḫinni* is very unclear. Haas (2003: 357) interprets it as the name of a drug. I think that the word represents part of the Hurrian name of the word *azukirāni* in obv. 18; note that the gloss sign is missing in obv. 19, so the gloss was probably composed of more than one word and started in obv. 18. The gloss is read *maššunti*-[x] in the Edition. In my opinion it is more likely to be read *paršunti*-[x], perhaps an Anatolian formation on a verbal noun from *parš*-, ‘to crumble’<sup>8</sup> (on the collation of the word on the tablet, see above).

<sup>8</sup> Unfortunately, it is very hard to confidently restore a likely nominal formation. As Starke (1990: 527 ff.) demonstrated, the heteroclit nouns in Luwian generalized a zero-grade; therefore the word *paršunt*- could perhaps be connected to a nominal form of the verb *parš*-, ‘crumble’, cognate to Hitt. *paršiya*- and *parš*-, for which see CHD P (s.v.) and Kloekhorst 2008 (s.v.).



**Obv. 20:** The plant *šamuttu*, *šimittu* or *šumuttu* (CAD Š/2 s.v.) has been identified with beetroot due to its red colour, which is hinted at in two mythological texts (CAD l.c. for further references). In the medical texts it is unclear what its function was supposed to be (although it is associated with cress in at least one other case, namely the literary text KAR 73:11; cf. Geller BAM 7 s.v.), and the identification can therefore be neither confirmed nor ruled out. The name of the *hurša*-plant was translated as 'Bergpflanze' in the Edition, assuming a connection to the Hitt. word *hurša*- (see HW<sup>2</sup>, III/20 s.v.). This identification is plausible but not certain, as the same plant appears at obv. 28 in the form *hurza*. The *šin-burratu* or *šibburratu* is a plant used in medical and ritual recipes since the MB period (CAD Š/1 s.v. *šibburratu*), as well as in culinary recipes (neglected by CAD l.c.: cf. Bottéro 1995: 64); the Sumerian correspondence with Ú.LUĜ.MAR.TU/TÚ is confirmed by Urnanna I 443 ff. In the medical contexts, it seems to have been used against urinary (cf. CAD l.c.) as well as the *būšānu*-disease, which reinforces the hypothesis that the text under discussion may have contained one or more recipes employed for dermatological problems or leprosy (cf. above, Commentary to obv. 11). That said, the translation 'rue' in the Edition (*Raute*) and Bottéro (l.c.) is hardly convincing, since the medical properties of rue are limited to the treatment of gastro-intestinal and gynaecological diseases throughout the ancient Mediterranean; it contains pilocarpine [C<sub>11</sub>H<sub>16</sub>N<sub>2</sub>O<sub>2</sub>] and was used against poisoning (cf. Pliny, *Naturalis Historia* XXV, 70, 74) and to induce abortion (Soranus, *Gynaecia* I.65), while its use in dermatology is extremely rare due to its high level of phototoxicity. The only apparent reference to a dermatologic use of rue, mixed with *spondylium*, is recorded by Pliny (*Naturalis Historia* XXIV, 16) for the treatment of degenerative ulcers; on the photo-toxic components contained by rue see now Schempp, Schöpf and Simon (1999: 432 ff.).

**Obv. 24:** SULLIM and *ša-an-ba-li-il-tù* represent the Sumerographic and syllabic writings of the name of the same plant (CAD Š/1 s.v. *šambaliltu*).

**Obv. 25:** The sign Ú following <sup>GIŠ</sup>HAŠHUR-[a]-kí and preceding the gloss sign has evidently been erased by the scribe, who decided to insert a gloss before proceeding with the enumeration of plants. The form <sup>GIŠ</sup>HAŠHUR-[a]-kí probably reflects Akk. *hašhurakku*, which, following Geller (pers. comm.), I translate 'bush' (occurring also obv. 37).

**Obv. 28:** The exact nature of the *šakirû*-plant remains obscure. The *nuhurti*-plant might have been a kind of *asa foetida* (cf. Worthington 2006: 44), but the evidence is not conclusive (cf. CAD N/2 s.v. and the more cautious entry in Geller 2009: 41, 'une plante').

**Obv. 29:** The nature and function of the *kalbānu*-plant (Sum. *giš-maš-ḥuš*) remains unknown (CAD K s.v.; Worthington 2006: 43). The *zuḥata*-plant is a *hapax legomenon*, not recorded by Thompson (1949) or CAD. Geller (pers. comm.) tentatively suggests a connection to *ṣuḥḥutu*, 'pressed, squeezed'; still, the morphology remains obscure.

**Obv. 31:** The *ganašutu*-plant is a *hapax legomenon*. Still, I prefer to read the third sign šú rather than zu (as in the Edition), assuming a possible connection with the verb *ganāšu*, 'to sniff' (s. CAD G s.v.). Another possibility would be to treat the word as a pseudo-



Sumerogram from GÁNA.ZI (Akk. *kanašû*, name of a garden plant).<sup>9</sup> Contrary to the Edition there is no gloss sign preceding *hu-wa-al[-li]*.

**Obv. 34:** The writing *a-šu-HU-hu* is probably a mistake for *ašūhhu*, 'fir'.

**Obv. 35:** No *gimra*-plant is known in Akkadian. Perhaps the scribe forgot a gloss sign while translating 'cress' in Hittite.

**Rev. 3:** The Edition's translation of *takpirtu* as 'Reinigungsritus' reflects the idea that the text had a magical value. The word is left untranslated here, as the second meaning provided by CAD T (s.v.), 'wiping', also attested with body parts as object, seems possible in the case of a medical text containing at least some recipes of a dermatological nature.

**Rev. 6:** Perhaps *[it-ta-n]a-as-su-uk*. On *nasāku*, 'to scatter' (Gtn), see CAD N/2 (s.v. p. 17); an occurrence of this very form in a medical text is recorded by Stol (1993:78).

**Rev. 8:** No interpretation for *šēzzu* is readily apparent.

**Rev. 14:** Or 'They keep doing, and only those (persons) keep doing (it)', with *apuš* nom. pl.<sup>10</sup>

### Interpretation

In his book *Materia magica et medica*, Haas (2003: 120) describes the text KUB 37.1 as a 'Rezeptur gegen Melancholie' and later in the same work (p. 352) as a 'babyl. Rezeptursammlung', although he generally agrees with the interpretation given in the Edition,<sup>11</sup> considering the tablet a school exercise (p. 120). However, the idea that the recipes contained in the text represent a cure against depression is not supported by an analysis of the medical content of the tablet. As shown above, the restoration at the beginning of line 1 (see Commentary) is problematic, and some of the herbs mentioned here seem more likely to relate to dermatological conditions.<sup>12</sup>

The influence of extra-Anatolian knowledge is crucial for the interpretation of the few Hittite and Akkadian texts from Hattuša related to medicine (Burde 1974: 53 f.). This medical corpus includes birth rituals (collected by Beckman 1983), Akkadian omīna,<sup>13</sup> some Hittite compositions<sup>14</sup> and very few collections of Akkadian recipes.<sup>15</sup> In a significant number of the Hittite texts collected by Burde (1974) the role of the physician is played by

<sup>9</sup> See CAD K s.v.; I am indebted to Prof. Geller for this suggestion.

<sup>10</sup> I wish to thank Prof. J. Hazenbos for drawing my attention to this possible alternative translation.

<sup>11</sup> Beckman (1983: 27, 156 n. 372, 164) also defines the text as a school exercise, as does Yakubovich (2009: 371), though more cautiously.

<sup>12</sup> For a ritual against depression found at Hattuša see Beckman (2001). Even if a couple of medicinal herbs are mentioned there (*burāšu*, *zā.ah.li*), they appear to be used as magical materials rather than ingredients for drugs and medications.

<sup>13</sup> Wilhelm (1994) collected the Akkadian medical omīna from Hattuša. A general collection of Hittite omīna can be found in Riemschneider (2004).

<sup>14</sup> The Hittite medical texts have been collected by Burde (1974).

<sup>15</sup> Along with the text edited in this article, there is a list of ophthalmological remedies (CTH 809) and a list of remedies against fever (CTH 811). For a brief discussion see Beckman (1990: 630).



a figure that was designated by Sumerographic <sup>LÜ</sup>A.ZU, corresponding to Akkadian *asû* and therefore to be interpreted, extending the definition given by Geller for Mesopotamia,<sup>16</sup> as a particular type of independent medical professional. The evidence of the role of the <sup>LÜ</sup>A.ZU as a physician seems to be quite conclusive.<sup>17</sup> Although the medical texts in the archives represent only a small part of the documentation, Hittite medicine quite evidently existed, and it was probably the result of the convergent evolution of local practice and medical traditions coming from abroad.<sup>18</sup>

Scholars who have discussed KUB 37.1 generally classify it as a school exercise written by a student. The reasons for this 'scholastic' interpretation rely on the presence of gloss wedges and glosses in languages other than Akkadian and on the speculative integration Köcher proposes for rev. 11–12, '[Die Frage (Aufgabe) des Lehrers] <ist> beantwortet, darüber hinaus aber [we]iss ich [manche Einzelheit nicht]'. The scene Köcher envisions takes place in a school, the tablet is the exercise of a student, and it is to be submitted to the teacher to evaluate and correct. Upon finishing his exercise, the student inserts the aforementioned comment in order to inform the teacher that he was unable to answer some of the questions. The restoration is epigraphically possible but unparalleled and highly speculative.

In order to decide whether this theory should be accepted or dismissed, it is necessary to touch on a delicate topic. What kind of school is one to envision? One may of course consider the hypothesis of a scribal school,<sup>19</sup> but three elements would seem to speak against the interpretation of KUB 37.1 as a scribal exercise.

The first element is its ductus, which Köcher describes as uncertain, quick and imprecise, as well as the general appearance of the tablet. The graphical features of the script, however, do not betray a poor knowledge of cuneiform – on the contrary, several difficult logograms are employed that are typical of the 'vocabulary' of the names of herbs and plants – but rather suggest that little attention was paid to the aesthetic appearance of the signs. The

<sup>16</sup> Specifically on the <sup>LÜ</sup>A.ZU see Geller (2010: 43–55).

<sup>17</sup> Cf. Burde (1974: 1–11). It may be worth mentioning the existence of a kind of priest, the <sup>LÜ</sup>AZU, who was involved in the *itkaḫi* and *itkalzi* purification rituals, collected by Haas (1984; for discussion, see in particular pp. 7–20). The sign AZU (NÍNDA×NUN) is generally analysed as semantically different from the logogram for 'physician', A.ZU. Whatever the connection of the two signs, in Hattuša the two designations appear to be, at least in part, interchangeable, as suggested by the involvement of the 'physician' in rituals (for instance in VSNF 12.17). If, as suggested here, the medical text KUB 37.1 was composed by someone possessing specific training in the field of healing, the fact that both this text and the rituals performed by the <sup>LÜ</sup>AZU required mastering the Hurrian language might support the idea that the two 'professions' were, if not identical, at least related.

<sup>18</sup> Overviews of the sources for the study of Mesopotamian medicine include Biggs (1990), Ritter (1965) and Geller (2010: 4–8). For discussions of Hittite medicine see Beckman (1990) and Burde (1974: 1–11, 53 f.).

<sup>19</sup> On Mesopotamian schools see now Waetzoldt / Cavigneaux (2009; in particular pp. 301, 303 ff. on the existence of specialized teaching for advanced students in the Old Babylonian period); for an analysis of the so-called Edubba'a-Literature as a source for their functioning and structure, see Volk (2000); see van den Hout (2009) for a synthesis of research about scribal schools in the Hittite kingdom; cf. also the very recent contributions by Gordin (2010) and Torri (2010). On the existence of scribal schools outside of Hattuša and on the influence of Akkadian scholarship on some of them see Weeden (2011).



signs are correctly formed, and appear to correspond to a Late Hittite ductus,<sup>20</sup> but are aesthetically unappealing and appear somewhat 'sloppy'. Further, the text was written with little concern for its general layout, as shown, e.g., by the gloss at line 19, which belongs to the obv. but was written on the rev., perhaps (but not necessarily) after the text was finished. One could conclude that such a 'raw' ductus and untidy layout might point to a scribal student who was not yet trained enough to write properly. However, I think that the appearance of the tablet was probably an important part of the *cursus studiorum* of a scribe; writing quickly, paying little attention to the aesthetics of the signs and the layout of the tablet is likelier to be an indication that the text is *not* a scribal exercise or exam, especially not that of a student who is experienced enough to be able to work on a multi-lingual glossed text.<sup>21</sup>

The second element is the highly interesting gloss at obv. 9, '(For) the same (symptoms): cedar, *ṣalabitu*-plant (gloss:) *this ṣalabitu-plant I do not know*.' Köcher suggested that this indicates that the writer was a student. This is possible – although not necessarily a *scribal* student, who probably would have simply copied the signs of his tablet rather than deliberate about its ingredients – as the scribe may have wanted to register an anomaly in a recipe he was unable to interpret. The fact that the *ṣalabitu*-plant probably did not exist (see above) suggests that the scribe was quite right in registering the anomaly, which may in turn indicate a specialized knowledge of medicine and pharmacology that a mere scribe was unlikely to master.

The third element is represented by the presence of glosses in Hittite, Luwian and Hurrian. It is true that a scribe had to master several languages, but a student who was not yet able to master cuneiform at a professional level would hardly be required to know the names of rare herbs in Luwian and Hittite. In other words, the use of the gloss signs seems to be specifically oriented to the knowledge of medical *termini technici* in three languages that were used in Hattuša, which suggests the possibility of a local use of the know-how contained in the text. This is likely to indicate that the person who wrote the text had considerable experience in the field of medicine.

As an alternative hypothesis, it may be suggested that KUB 37.1 should be interpreted as an exercise of a student in medicine. The existence of different and more advanced levels of education is well attested in Mesopotamia, especially for the Old Babylonian period. For ancient Anatolia, a similar situation has recently been suggested by Hazenbos (2003: 64) with reference to the figure of the Hittite augur, who probably received a general scribal

<sup>20</sup> The sign forms are Late Hittite, more precisely 13<sup>th</sup> century (e.g. LI at obv. 5, 15 and *passim*; cf. however older AG at obv. 10).

<sup>21</sup> If one compares, for instance, the school exercises found in Nippur (Veldhuis 1997), it is evident that the shape of the signs is uncertain and sometimes mistaken, but that there is a clear attempt at carefully reproducing their exact form, both in the teacher-student tablets of Veldhuis's type II (1997: 31–37) and in those in which only the handwriting of the student is preserved, e.g. those of type III (Veldhuis 1997: 37–38). Usually the work of the students was not perfect, and mistakes are present, but the situation in KUB 37.1 is seemingly different: there are no graphic or 'graphemic' mistakes or imprecisions, and the tablet was not written slowly and carefully (as students, who will be evaluated on the quality of the script, generally do) but rather quickly (as experienced professionals do as long as they are not required to have their scribal skills judged by a teacher).



education, after which he entered a phase of specialized training. Regarding medicine, evidence from Mesopotamia (Geller 2010: 132 ff.) would point to a similar conclusion; however, it must be stressed that the Akkadian medical texts found at Hattuša represent the only real evidence for the idea that a similar situation may have existed in the Hittite world as well.<sup>22</sup>

It is known that in Mesopotamia the *asû*, sumerographic <sup>LÚ</sup>A.ZU, had the specific function of a physician, but we are poorly informed about how the act of healing a patient was performed in the Hittite world, and to what extent Mesopotamian pharmacology and Anatolian and extra-Anatolian ritual magic were involved. Nevertheless, that the figure in charge of healing was the <sup>LÚ</sup>A.ZU is shown by a series of occurrences collected and discussed by Burde (1974: 1 ff.). The Laws (OH/NS KBo. 6.4 i 22 ff.) suggest that the <sup>LÚ</sup>A.ZU was responsible for healing a <sup>LÚ</sup>EL-LUM or a slave who is injured, and the physician charges 3 shekels of silver for his services: 'If a person injures a free man's head, he shall provide medical care for him. And in his place he shall provide a person to work on his estate until he recovers. When he does recover, (the offender) shall pay him 10 shekels of silver and shall (also) pay the 3 shekels physician's fee. If (the victim) is a slave, (the offender) shall pay 2 shekels of silver' (Hoffner 1996: 24; Burde l.c.). In the *Gerichtsprotokoll* KUB 34.45+ rev. 12f. (MH/MS) Kukkuwa mentions two <sup>LÚ</sup>A.ZU, named Hutupi and Akiya, who healed him from fever (Burde l.c.; it is worth noting that the names do not appear to be Mesopotamian). Finally, a direct connection to the Hittite court is implied by the fragment VSNF 12.17, 6 ff. (MH/MS), which contains the compound title GAL <sup>LÚ</sup>MES <sup>LÚ</sup>A.ZU, probably the designation of a high-ranking physician (Burde l.c.), who apparently took part in a ritual involving the royal couple as well as some princes and court officials, in which, however, the physician seems to act more like a ritualist than a medical professional.

To what extent the collections of recipes found at Hattuša may have been indebted to the Assyrian (or Babylonian) tradition and to what extent they may have been reworked locally is difficult to say. In any case, it is not unreasonable to assume that those who were in charge of healing would have needed to study medicine and pharmacology in Anatolia, as they certainly did in Mesopotamia (cf. Geller 2010: 130–140), especially after centuries of cultural contact. If the tablet KUB 37.1 indeed represents an exercise, I suggest interpreting it as the exercise of a student in medicine, possibly looking forward to starting his career as a <sup>LÚ</sup>A.ZU in Hattuša. It would be very tempting to assume that his teacher was a Mesopotamian scholar, making the occasion on which the tablet was inscribed quite similar to that postulated by Beckman (2001: 81) for the composition of the ritual against depression CTH 432. This interpretation, although speculative, would fit not only the likely existence of higher and specialized Hittite education, strongly influenced by the Mesopotamian world, it would also be consistent with the features of a text written by someone whose pharmacological and medical knowledge appears to be too deep for a simple professional of writing.

<sup>22</sup> Commenting on the medical texts written in Hittite, Burde (1974: 53) implicitly refers to the existence of specialized medical training in Hatti, as she mentions the possibility 'daß es sich bei den hethitischen Ärzten, die die Texte entweder übersetzten oder selbst verfaßten, um gebildete, erfahrene Personen gehandelt hat'. This scenario would parallel the picture Hazenbos (2003: 64) sketches of the Hittite augur and would hint at the existence of higher education among the Hittites.



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