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Résumé de l'article

The question of bloodletting in Babylonia (and surgery in general) has hardly been studied, since evidence is sparse, while at the same time bloodletting in the Babylonian Talmud has been assumed to have been employed, although based upon questionable medieval interpretations of vague and doubtful terminology. However, when descriptions from cuneiform medicine are combined with evidence from Aramaic sources, a somewhat clearer picture emerges of a possible limited use of a bloodletting procedure in Babylonia, in both earlier and later periods.

Bloodletting in Babylonia Revisited

by

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Abstract

The question of bloodletting in Babylonia (and surgery in general) has hardly been studied, since evidence is sparse, while at the same time bloodletting in the Babylonian Talmud has been assumed to have been employed, although based upon questionable medieval interpretations of vague and doubtful terminology. However, when descriptions from cuneiform medicine are combined with evidence from Aramaic sources, a somewhat clearer picture emerges of a possible limited use of a bloodletting procedure in Babylonia, in both earlier and later periods.

About the Author

M. J. GELLER received his first degree from Princeton University in 1970 and his doctorate from Brandeis University in 1974. In 1976, he was appointed to a lectureship at University College London, where he has been teaching ever since. He has held fellowships from the Alexander von Humboldt-Stiftung, the Netherlands Institute of Advanced Studies in Wassenaar, and the Institute for Advanced Study, Paris.

He was visiting professor at the Paris École Pratique des Hautes Études and has been a regular visiting fellow at the Max Planck Institut für Wissenschaftsgeschichte in Berlin. Between 2010 and 2018, he was on secondment from University College London as Professor für Wissensgeschichte at the Freie Universität, Berlin and was principal investigator of a European Research Council Advanced Grant BabMed on ancient Babylonian medicine.

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Keywords bloodletting, Babylonian medicine, Talmudic medicine, phlebotomy

The topic of surgery within ancient Babylonian medicine continues to raise questions, since the sparse evidence fails to meet our expectations of surgery as a key component of medicine, especially when compared with documentation from Egyptian and Greek medicine.[1] There is no Akkadian equivalent to the Edwin Smith Surgical Papyrus, nor is there any Babylonian counterparts to surgery in the Hippocratic Corpus [see Craik 2015, 260]. One reasonable explanation for this relative silence in Akkadian sources is that surgery was considered similarly to carpentry or handwork, for which we also have no handbooks from Babylonia. In the Babylonian Talmud, on the other hand, the Aramaic term «'wmn» for "craftsman"—corresponding to Akkadian «ummânu» (expert)—is often simply translated as "bloodletter", based on medieval commentators. The nagging question is whether we have missed some crucial clues somewhere along the way which would bring Babylonian medicine (both in its cuneiform mode and in the later Talmudic sources) more in line with other systems of ancient medicine. The point of this quest is that bloodletting rather than surgery may have been recognizable in relatively few Akkadian medical passages, and these have been poorly understood because the nuances of the technical vocabulary have been missed in the standard dictionaries. But even if we manage to identify a Babylonian version, this therapeutic technique still needs to be assessed in comparison with classical sources on bloodletting and the theoretical framework in which it was conceived and developed.

An Akkadian medical text from *ca* 700 BC dealing with diseases of the head advocated making an incision in the skull, thus alerting everyone to the prospect of surgery in Mesopotamia [cf., e.g., Labat 1954, 212; Majno 1975, 59].

[1] [Ed] There is a list of the abbreviations used in this article on page 93.

Text 1. BAM 480 iii.57–58[2]

šumma muhhašu mê ukâl ubānaka rabîta ašar mê ukâllū tutanalappat šumma eṣemtašu? be'ēšat mê ša gulgullišu ittardū šumma gulgullašu teserrim mê ša gulgullišu tušellam?

If a man's brain/cranium contains fluid, you keep palpating (lit. touching) with your index finger the place which contains fluid. If his bone[3] smells, the fluids of his skull are descending (internally). If you make an incision in his skull, you can remove the fluid of his skull.

Context This recipe occurs in a Nineveh Royal Library treatise on the cranium.[4] It appears in an unusual position, since it hardly matches any of the other entries in the third column of this tablet. The general context consists of rituals and incantations for either cranial fever or loss of hair on the head or cheeks, which in one instance is blamed on the fact that the patient's personal god and goddess hate him [BAM 480 iii.48 *amēlu šuātu ilšu ištaršu ittišu zenû*].

This unusual Akkadian passage is concerned with cutting into the skull because of an excess of blood, with the suspicion of infection indicated by an odor. The purpose of an incision was to remove cranial fluid, which would have included blood. Since there is no other obvious reason for making an incision, the most reasonable explanation for this procedure is classic phlebotomy. A slightly later remark in the same passage refers to the opposite condition:

šumma tutanalappat-ma eṣemtašu? lā be'ēšat ana limīt qaqqadišu išāt abnī tašakkan

if you keep palpating and his bone does not smell, you place around his head a "fire" of stones.

This reverse proposition advocates cauterization if there is no telltale odor of infection, but cauterization was another standard treatment in Greek medicine closely allied with phlebotomy.

[2] This text (with modifications) can be found in Scurlock 2014, 441–442.

[3] The major difficulty with interpreting this passage is the identification of the unique term «uzu GIŠ», translated in Scurlock 2014, 442 as "ear". A much more likely solution that fits the context comes from a lexical text reading «GIŠ» as «eṣentu» (bone) [Idu 2.183: see CAD E 341]; because «GIŠ» can be normalized as «eṣu» (wood), it could have been used as an abbreviated logogram for «eṣettu» (bone), or even a phonetic gloss.

[4] The designation of treatises as "Cranium" or "Stomach" is based on the Assur Medical Catalogue, which is a list of cuneiform medical treatises organized anatomically. This list is comprehensively discussed in Steinert 2018: see esp. Panayotov 2018.

If indeed bloodletting had been practiced in Babylonia, we might be justified in comparing a similar procedure in the later Babylonian Talmud, which records the following surgical treatment.

Text 2. Ab Zar 28a(41)

אמר רבא האי סימטא פרוונקא דאשתא היא מאי אסותא למחייה (נמחייה) שיתין אסקוטלי וליקרעיה שתי וערב

'mr rb' h'y symṭ' prwwnq' d'št' hy' m'y 'swt'? lmḥyyh šytyn 'sqwṭly wlyqr^{c}yh šty w^{c}rb

Rava said: This abscess is the forerunner of fever. What is the remedy? One should strike 60 finger(-blows) (*'sqwṭly*),[5] and then he should tear it vertically and horizontally.

Context This passage occurs within a brief survey of skin ailments such as an open wound (*pd^{c}t'*), grape-like lesions (*^{c}ynbt'*), or fistula (*pyq^{c}'*). In each case, the Talmud asks, «m'y 'swt'» (What is the remedy?), with recommended treatments being externally applied.

Although this passage is intended to appear to be about lancing an abscess, the impression is deceiving. The observation by Rava (third to fourth century AD) associating an abscess with fever is artificially appended by the later editors of the Talmud to a presumed "remedy", an anonymous statement about palpating 60 times (a Babylonian sexagesimal idiom for multiples) and then tearing open crosswise, with the inference (by juxtaposition) being that this procedure refers to the same abscess mentioned by Rava. In fact, there is little reason to assume any connection between these two statements. The additional comment (i.e., the remedy) may well have been borrowed from another context and in fact resembles the Akkadian Text 1 [p. 56, above], which has one palpate (lit. strike finger-blows) and then cut into the body, probably if there was suspicion of infection. Some remote connection between these Akkadian and Aramaic passages is not entirely improbable, since medical extracts in the Babylonian Talmud contain enough Akkadian loanwords and calques to suggest that Akkadian medicine was still legible or accessible in Babylonia in the third century AD.[6]

[5] The Vilna edition of the Talmud reads «'ytqwṭly», corrected in Sokoloff 2020, 84. Although etymologically related to the Greek word for "finger", this word is well integrated into Syriac.

[6] Geller 2004b, which is now being updated, reflecting one of the primary objectives of the ERC Advanced Grant No. 323596 BabMed (2013–2018), to highlight fragments of cuneiform medicine in the Babylonian Talmud. The present article is a

A. Akkadian evidence for bloodletting

The idea of bloodletting in Mesopotamia has been occasionally and tentatively proposed but never taken seriously, and the use of bloodletting in Babylonia was erroneously rejected by the present author when writing previously about this procedure in the Babylonian Talmud [see Labat 1954, 208–209; Stol 1989, 164; Geller 2004a, 308–309]. Although relatively scarce, evidence is growing in favor of the proposition that cupping or phlebotomy in some form was occasionally practiced in Babylonia, but perhaps not by the *asû*-physician. To review the evidence for bloodletting in Babylonia, we need to consider any possible technical Akkadian and Aramaic terminology.[7] The main instrument would have been a flint scalpel, but medical texts regularly warn of the dangers, such as the advice given in Akkadian eye treatises that the eyes should get cured before the healing goddess Gula arrives with her flint razor and scalpel.[8]

A.1 «mahāṣu» (to strike)

This term has many different uses, since it can refer, as a symptom, to how a disease "strikes" (i.e., affects) a patient, or it can also be used with *materia medica* to indicate a stirring of the mixture. When used—exceptionally—to indicate that a practitioner "strikes" a part of the patient's body so that blood emerges, the prospect of phlebotomy has to be considered.

Along these lines, in a groundbreaking article, Marten Stol [1989, 164] drew attention to a lexical passage referring to various instruments used with the act of striking (Akkadian «mahāṣu»), such as in weaving or agriculture. One such instrument, GI.DÙ.A in lexical texts [Stol 1989, 181.41], gives «MIN» (= «mahāṣu») as «ša dāme» (to strike, regarding blood). A later entry [line 45] gives «GI.DÙ.A» as «ma-ha-ṣu ša GIŠ» (to strike, regarding a tree), perhaps both cases indicating a reed instrument for draining purposes.

contribution toward this objective, and it has also benefited from the Wellcome-funded British Museum project NinMed.

[7] It is worth noting that most of the Akkadian contexts that may indicate phlebotomy are from Late Assyrian sources that predate Greek evidence for this procedure.

[8] See BAM X.104 *lām ikšudūkināši ṣurru u naglabu ša Gula* (before Gula's flint and scalpel have approached you).

The lexical item draws our attention, however, to Akkadian «mahāṣu» (to strike), as a term for a medical procedure.[9]

References in prescriptions to a practitioner striking the patient's temple may indicate bloodletting.

Text 3. BAM 482 iii.51′, 55′–57′

šumma amēlu SAG.KI.DAB.BA [*ibašši*] (*materia medica* listed) *šammī annî* [*ina*] *tamgussi taqallu šammī šašunu malâ qalûti ištēniš taballal* [*ina*] *šuršummi šikari talâš tugallab šamna tapaššaš* 7-šu tarakkassu-ma ina UD.4.KAM *šer'ān nakkaptišu tamahhaṣ-ma iballuṭ*.

[51′]. If a man [has] migraine, (*materia medica* listed),

[55′–57′] you roast these drugs in a copper kettle, you mix together these same drugs (once) fully roasted, you knead (them) in beer dregs, you shave (him), you rub (him) with oil, you bandage him seven times, and on day four you "strike" (*tamahhaṣ*) a vein of his temple and he should get well.

Context The recipe occurs in the third column of a treatise on the cranium from the Nineveh Royal Library. It appears among a series of prescriptions for migraine, occasionally attributed to the activities of ghosts. The other antimigraine recipes, however, offer pharmacological remedies that bear no resemblance to the procedure described here.

Striking the vein of the patient's temple is highly unusual in medical prescriptions, but this procedure was only employed on the fourth day of treatment after all other remedies had proven unsuccessful. The same idea of striking the patient appears in another tablet from a contemporary provincial archive (Sultantepe, now Eastern Türkîye).

Text 4. STT 89 iii.152–158[10]

šumma enūma tahâṭu(È)-*šu kīma summātu* [*idammum uštannah*].
īnāšu ittanaššā it-[*...damu*]
ina ṭurri šinnišu illak-ma libbašu...
ana mê nadî[11]

[9] Cf. Nabnitu Tablet XX, MSL 16.179ff. Although Sumerian «GI.DÙ.A» usually refers to a fence, two other entries in Nabnitu [XXI.108–109 = MSL 16.194] refer to gi.dù.(dù).a (= *kanāsu*) as *ša* KI.TUŠ-*ab* (= *ašar tuššab*) (to kneel in regard to where you sit), i.e., with no connection to phlebotomy.

[10] Cf. Stol 1993, 95. Strahil Panayotov drew my attention to this passage.

[11] Reading «A ŠUB». Alternatively, the reading «a-ru» could be a defective orthography for «a-ru<-u>», for «arû» (to vomit). Schwemer suggests reading either «BAR» or «ŠÚ» in the initial position, neither of which gives a satisfactory sense: cf. Abusch and Schwemer 2011, 438.

enūma tahâṭu(È)*-šu šer'ān nakkapti*[*šu…*]
našû ina KIN.TUR.ZABAR[12]
tamahhaṣ-ma [*enūma ina pān mahāṣika*]
arhiš igallut murussu ippaṭṭar [*…enūma*]
ina pān mahāṣika lā igallut murus[*su ul ippaṭṭar*]

If when you examine him, he [groans and moans] like a dove, his eyes are always clouding over and […and blood] flows from his gums, and [his] internal organs are…. In order to emit fluids, when you examine him, the vessels of [his] temple and […being] raised, you "strike" (*tamahhaṣ*) him with a small bronze instrument. [When before you "strike" (*mahāṣu*)], he trembles rapidly, his illness can be dispelled […When] before you "strike" (*mahāṣu*) he does not tremble, his illness [cannot be dispelled].

Context The recipe occurs in a Late Assyrian tablet with recipes against various forms of witchcraft, and in the immediate vicinity are other recipes beginning with the same incipit [STT 89 iii.128, 133]. Because the latter halves of many lines are missing, it is possible that a similar procedure appears elsewhere in this text.

Despite the unfortunate breaks in the tablet, this interesting medical text appears to show that the patient's raised blood vessels in his temple are being struck with a small bronze instrument or knife. The explanatory clause is counterintuitive from our modern perspective, since this extreme procedure is only deemed to be useful when the patient shows signs of having fits; otherwise, it is of no use. In other words, this type of treatment was reserved for patients requiring extraordinary measures for acute illnesses, such as seizures. The text explains that for a patient without seizures, this remedy would not work. The other key phrase in this passage suggesting bloodletting is «ana mê nadî» (in order to expel fluids), which brings the recipe somewhat in line with Greek medicine, which could use bloodletting as an extreme form of purgation.

Finally, one atypical medical procedure for stomach disorders is to place the patient upside down, presumably in order to reverse the effects of the illness or to assist in purging the patient.

Text 5. BAM 574.14–15

ana KI.MIN (= *kīs libbi*) *qaqqassu ana šaplānu tašakkan šepāšu ana elēnu tušaqqa ina sibkūti lēssu tamahhaṣ ina sibkūti tumaššassu-ma*

[12] The reading for this logogram is unknown. See Stol 1989, 164 associating this instrument (thought to be sicklelike) with bloodletting (but not actually making the case) and followed by Wasserman 2008, 75 n22.

> For a "binding of the stomach" (*kīs libbi*), you place (the patient's) head downwards and raise his feet above, using a covering (*sibkūtu*)[13] you strike (*tamahhaṣ*) his cheek and using a covering, you (vigorously) rub it.
>
> *Context* This recipe occurs early on in a Nineveh Royal Library treatise for the stomach, which contains rather baroque incantations in the early lines alluding to the patient being treated upside down.

The striking and massaging of the patient's cheek is described with *hapax* terminology, «ina šibkūti», which has been interpreted as something like "with a ruse" or with artifice.[14] It seems more likely to be related to Aramaic «sbkt'», a type of covering or something "attached" to the patient—< «sbk» (to adhere)—which could be a technical term for a cupping instrument which adheres to the patient's body when heated. This special technique could refer to bloodletting, consisting of striking the patient's cheek with some kind of instrument and then rubbing it to induce the flow of blood.[15] A similar clause appears in bilingual Udug.hul incantations, in which the exorcist describes striking the patient's cheek: te lú.tu.ra.šè ra.ra.da.mu.dè, *lēt marṣi ina mašādiya* (when I slap the patient's cheek) [Geller 2016, 3.134 = BAM VIII]. There is no explanatory information provided in this very standardized incantation to suggest that the phrase refers to bloodletting,[16] but it indicates how traditional vocabulary and usage could be adapted to new circumstances or technologies, without inventing a new thesaurus of technical terms.

[13] From Babylonian Talmudic Aramaic, «sbkt'»: see Sokoloff 2020, 749.

[14] See CAD M/2.9 *s.v.* «mekûtu», reading «šipkūtu'» as a biform of «šipku» (ruse), citing this passage. Slapping the cheek in this context has nothing to do with this expression in the context of witchcraft, e.g., Maqlû VII.96 *amahhaṣ lētki ašallap lišānki* (I strike your cheek, I tear out your tongue).

[15] Phlebotomy could theoretically be practiced in many parts of the body, including the cheek. Campbell Thompson 1923, 61.8.1 is a fragment of physiognomic omens that refer to a "vein" of the cheek: *šumma šer'ān nakkapti imittišu itenebbi* (if a vein on his right temple pulsates), in line 5, referring to the vein of his right cheek (*lēti*) pulsating.

[16] The D-stem «muššudu» has the meaning of "rub" rather than "slap" [CAD M/1.352], but the implication is that this was vigorous.

Another case of striking a part of the body refers to the lungs.

Text 6. BAM 557.6[17]

dišpa u himēta ana pîšu tašakkan ina takkussi hašīšu tamahhaṣ 7 umī annâ teteneppuš-ma [*iballuṭ*]

Place honey and ghee in his (the patient's) mouth, into [his mouth blow…] through a reed tube, you *strike* his lungs, keep doing this for 7 days and [he will get better].

Context The recipe appears in a fragment of a Nineveh Library treatise for Bronchia, which otherwise contains standard medical ingredients.

The idea of striking or slapping the patient's lungs makes little sense therapeutically, which leaves us with the possibility that the patient is being bled from some unspecified places on his torso corresponding to the lungs.

A.2 Akkadian «takāpu» (to puncture)

Apart from «mahāṣu» (to strike), another important term is «takāpu», which appears in (relatively rare) contexts like some kind of bloodletting.

Text 7. BAM VII 9.19′–20′ = Geller 2005, 100–101 (Kidney disease)

[*šumma*] *amēlu iškašu munga ṣabit tatakkip-ma mung*[*u*…]
šumma amēlu iškašu šarka ukâl tamahhaṣ-ma nabrâ…

[If a] man's testicle is affected by stiffness, you prick (*tatakkip*) and the stiffness….

If a man's testicle contains pus, you *strike* (*tamahhaṣ*)[18] and *a* (copper) *n.-vessel*….

Context These lines, from near the end of the third tablet of a Nineveh Library treatise for kidneys, are separated by a ruling and represent single-line recipes, both lacking ingredients. The text is otherwise unusual for the number of ingredients in its recipes, with one containing 90 drugs. The final column, where this recipe occurs, are mostly *simplicia*.

[17] The fact that this fragment is a treatment for "bronchia" can be noted from a later incipit [lines 20′–21′] «DIŠ NA HAR.MEŠ-*šú* LUGUD *u* MURUB HAR.MEŠ-*šú*…ŠUB.MEŠ-*a*» (if a man's lungs—pus—and the middle of his lungs give off [blood?]).

[18] See BAM VII.101, translated conventionally as "stir" (the *materia medica*), which may not be correct in this instance.

The term «tapāku» (to puncture) is paired here with «mahāṣu» (to strike), and «nabrû» can designate a copper cup, perhaps used in cupping.[19] It is noticeable that this prescription does not use suffix pronouns to clarify the procedures. The passage is broken and it is not certain whether the rarely attested *nabrû* vessel could have been used to collect blood or in a cupping procedure.

Text 8. BAM 482.64

šumma amēlu nakkaptāšú īkallāšu ina siparri 1-*šú* 2-*šú* 3-*šú tatakkip-ma* [*dāma atabbak*]

If both a man's temples hurt him, you puncture (*tatakkip*) with a bronze (instrument) once, twice, thrice, [you pour out his blood].

Context This is a second recipe from Cranium, and others in the immediate context have nonstandard phraseology, which is unexpected in a Nineveh Library treatise. Surrounding recipes treat palpitations (lit. risings) of the temples, usually with massage or external applications of ordinary drugs.

This text contains prescriptions for diseases of the head. The repeated puncturing of a patient's temple with a bronze instrument (only described with the word "bronze") is used in the context of head diseases, in this case probably migraine. It is difficult to see what therapeutic alternative there would be in this passage for bloodletting.

A.3 Akkadian «eṣû» (to incise)

The following passage, which uses the Akkadian term «eṣû» (incise), is the clearest indication of phlebotomy, since the patient's blood is clearly being shed.

Text 9. BAM 323.89–92 + dupl. BAM 228.229

šumma amēlu SAG.KI.DAB.BA *ibtanašši uznāšu išaggumā ināšu ibarrurā šer'ān kišadīšu ītanakkalšu idašu šimmatu ibtanašši kalīssu umahhassu libbašu dalih šepšu rimūtu ibtanašši amēlu šuātu eṭimmī ridâti irteneddišu ana balāṭīšu ina* UD.15.KAM *ūm* ^{d}*sīn u* ^{d}*šamaš ištēniš izzazzū amēlu šuātu šahha tušalbaš ina ṣurri nakkaptašu teṣṣi-ma dāmēšu tatabbak*

If a person has constant migraine and his ears roar, his eyes are dim, the veins of his neck hurt him, his arm(s) constantly have paralysis, his kidney stabs him (with pain), his mind (lit. heart) is troubled, his foot is constantly lame—that

[19] CAD N/1.30 ^{urudu}šen.á.lá = *nab-ru-ú*. Hh. XI.396 is listed among other ritual vessels, after the *namsû* (^{urudu}šen.níg.šu.luh.ha), a handwashing basin used in anti-witchcraft rituals [Maqlû VII.141′, 145; VIII.149′, 164′]. It occurs in the same context as the ^{urudu}šen.tur, *tangussu*, which appears regularly in medical prescriptions.

man is being chased by a persecuting ghost. In order to cure him: On the 15th day (of the month), when Moon and Sun are aligned, have that man don a *šahhu*-(mourning-)garment, you cut open (*teṣṣi*) his temple with a flint scalpel (*ṣurru*), you pour out his blood.

Context The recipe is mostly consistent with all others in this early neo-Assyrian composition dealing with migraine often attributed to the attack of a ghost, except for the instruction to cut open the patient's temple.

The remainder of the prescription provides rather standard ritual-type procedures, instructing the patient to be installed in a reed hut facing north, then toward the sunset, setting up alternatively censers of juniper and cypress with libations of milk and beer, after which the patient recites an appropriate incantation. This patient suffers from a host of serious symptoms attributed to ghosts, involving both pain and paralysis. Perhaps the severity of the illness called for extreme measures beyond standard drugs to try to effect some sort of remedy, which in this case may be phlebotomy.

Text 10. STT 95+295 ii.15–17[20]

šumma amēlu ira'ub hurbāšu imtanaqqussu kimilti ^{d}*gula elišú ibašši amēlu šuātu kalba hurāṣa līpuš-ma ana* ^{d}*gula liddin qassu ina ṣurri eṣṣi-ma kimilti* ^{d}*gula paṭrat*

If a man trembles and chills constantly befall him, Gula's wrath is upon him. Let that man make a gold dog and let him present it to Gula. He (the healer) incises (*eṣṣi*) his (the patient's) hand with a flint scalpel (*ṣurru*) and Gula's anger will be dispelled.

Context This provincial Late Assyrian tablet, also from Sultantepe, is devoted to magico-medical recipes concerned with a patient's feelings of being subjected to divine anger, thought to be causing the illness. Remedies are essentially external, either through massage or ingredients being hung from the patient in a leather bag. No other recipe advocates an incision with a scalpel.

A rich repertoire of rituals exists for appeasing an angry deity without a single mention made of cutting the patient with a scalpel. No healer is mentioned specifically but is inferred from the passage, since it is also unlikely for a medical recipe to instruct a patient to cut himself with a scalpel. Although the formal justification for the procedure in this case was to dissolve Gula's anger, in fact the incision, presumably to let blood, would have been aimed at treating the specifically noted symptoms of trembling and chills, comparable to the way phlebotomy was used within Greek medicine.

[20] See, with some differences, Scurlock 2014, 654, 663–665.

Similar terminology appears in two cases of superficial incisions made into the skin for treating dermatological conditions, considered by Labat [1954, 214–215] as examples of surgery, but since these do not reflect phlebotomy, they need not to be considered in detail. The passage [BAM 580 iii.15′–25′: see Scurlock 2014, 551] has many interesting unorthodox features and merits a full edition and commentary; but relevant for the present discussion is the treatment of the lesions, which bear the colorful labels of "male" and "female" versions of a *lamṣatu hīlāti* (suppurating fly bite). The "male" variety is described as itchy (*haris*), with pegs (*sikkāti*) that are either hot or flowing; and to cure the condition, "you incise the sore with a razor" (*ina naglabi teneṣṣi*), noting the key term «eṣû» (incise). The "female" lesion is painless (*ul ikkal*) and superficial (*eli šīrīšu-ma šakin*), but freely flowing with blood and pus (*dāmušu-ma šarku šurdū-ma illak*). The clause most relevant for us is the final remark:

> *šumma ina libbi eṣemti* [*šakin*] *tepette tasarrim tušellam-ma* [*iballuṭ*]
>
> if (the lesion) is [found] within the bone, you open, cut, and remove (it) and [he should get well].

While the vocabulary in this text resembles the familiar terminology of bloodletting, it does not qualify as such and can be disregarded.[21]

A.4 Akkadian «petû» (to open)

A rare remark *en passant* in an Akkadian recipe for bronchial problems and fever that uses «petû» (to open) may indicate some kind of surgical procedure, as already noted by R. Labat. The text is broken but can be generally understood, although specific details remain obscure.

> Text 11. Campbell Thompson 1923, 49.4 rev. 2′–4′ (treatise: bronchia) dupl. BAM 39.1′–5′: cf. BAM 520 ii.9′–11′ for restorations[22]
>
> ana KI.MIN[23] *ummu ina ẓumrišu* [*laẓizma u magal*] *ilehhib amēlu šuātu bitqu* [*maruṣ…*] *tusabba'šuma* 3 *ṣēli* [*tamanni ina*] *ṣurri ina* 4 *ṣēli tapattešuma mê u dāmu* [*uṣṣûni…*]

[21] While not directly relevant to bloodletting, this passage is important for contributing to a general concept that purulent or festering matter must be removed.

[22] Labat 1954, 216–217 [JA 214]; Backsay 2018, 93; Campbell Thompson 1923, 49.4 rev. and BAM 39; Scurlock 2014, 485–486.2′–9′.

[23] Perhaps referring to BAM 520 ii.8′: *šumma amēlu mukīl rēš lemutti iṣabbassu* (if a Supporter-of-Evil demon has seized a man), although this is far from certain.

Alternatively, fever is [chronic] in his body and he groans [a lot], that man is [ill] from a *fissure*, you roll him [over] and you [*count*] three ribs, you open him at rib number four with a flint knife, fluids and blood [go out]....

Context The Nineveh fragment belongs to the third tablet of the treatise on bronchia, but nothing can be deduced from the two fragments of similar content. A similar text [BAM 520] attributes the illness to the Supporter-of-Evil demon, but this adds little to our overall grasp of this fragment.

While the patient suffers from chronic fever, he also seems to have undergone a *bitqu* or fissure in his body of some sort, perhaps involving the lungs. The usual idea is that the patient was to be drained of excess or putrid fluid through a reed inserted between his ribs. However, since there is no mention of a reed used for drainage, it is equally possible that the incision made between the ribs with a flint scalpel was for phlebotomy, since the text simply mentions fluids and blood (*mê u dāmu*), without referring to the draining of pus or purulent matter. However, further along in the text, the Nineveh fragment [Campbell Thompson 1923, 49.4′, 8′] gives another instruction, NAM.SI.SÁ *abāra tēppuš* (you make a lead NAM.SI.SÁ-instrument), which looks promising, since the *hapax* NAM.SI.SÁ could denote an abstract noun related to purging the intestines. However, this lead object appears to be amuletic, since it is strung onto a linen cloth used for an infusion, which is then kneaded and attached to the patient as a bandage. The passage in its present state is ambiguous but cannot be ruled out altogether as an example of phlebotomy.

A.5 Akkadian «kâru» (to scrape, rub: synonym «marāqu»)

The term «kâru» (to scrape, rub: synonym: «marāqu») is used in connection with scraping various anatomical parts of the patient's head to induce bleeding. Most common usage refers to the teeth being scraped until blood emerges or becomes visible.

Text 12. BAM 543.1–2 + BAM 159 v.10–16[24]

šumma amēlu gimir šinnīšu inâš u rišūtu ibašši (materia medica) *ištēniš tasâk kitâ dišpa tasallah tulâm eli šinnīšu adi dāmu uṣṣûni takâr*

If a man's teeth are all loose and he has redness (in his gums), you pound together (*materia medica*), you soften a linen cloth sprinkled with honey, you scrape over his teeth until blood emerges.

[24] See Scurlock 2014, 401.

Context This recipe from the opening lines of a Nineveh Library treatise on teeth is found as well as in an earlier Assur tablet, although the latter contains a variety of topics, mostly not dealing with teeth.

The main idea of this recipe is that a honey-soaked rag is used to scrape the gums around the tooth, to irritate the gums enough for blood to emerge. The idea of scraping the gums until blood escapes has a variant theme in the same text:

lubarē qatnūti [*tasallah-ma pâšu u*] *nahīrīšu adi dāmu immarū takar*

you sprinkle thin rags and you scrape [his mouth and] nostrils until blood is visible.[25] [BAM 543 ii.63′–64′]

A similar passage (with some variation) appears in an Uruk prescription directed against *bu'šānu* disease, which affects the nose and mouth, as well as against *munû* sores, elsewhere associated with feet.

Text 13. Hunger 1976, 1.44.80–83

šumma amēlu šinnīšu munû bu'šānu (*hepi eššu*) *<ú-ka->al ina birīt šinnīšu dāmu uṣṣûni* (materia medica) *ištēniš tasâk ubānka mušāṭu talammi nāha tasallah* [*kitâ*] *tulâm šinnašu adi dāmu uṣṣûni takâr*

If a man's teeth contain (new break) *munû* and *būšānu* disease, between his teeth blood comes out, you pound together (*materia medica*), you wrap combed wool around your finger, you sprinkle (it) with pig fat, you soften [a linen cloth] and you scrape his tooth until blood comes out.

Context This recipe is situated at the end of a Late Babylonian selection of recipes extracted from the treatise Cranium, from Uruk. Most of the reverse of the text is occupied by medical incantations and procedures, rather than prescriptions, and this recipe may have been added to the end of the text.

Although the dictionaries define «kâru» as rubbing, it seems clear from these examples that the procedure is harsher than rubbing, intended to induce bleeding. While the term is synonymous with the more common verb «marāqu», which can mean both to rub and to scrape,[26] the term «kâru» does not necessarily rub anything onto a part of the body, since in

[25] A similar idea is found in an Uruk text treating *bu'šānu* disease:

appašú u pâšú adi dāmu immaru takar
you scrape his nose and mouth until blood is seen. [Hunger 1976, 1.44.22: see Text 13]

[26] The act of vigorous rubbing in order to induce bleeding also occurs with the verb «muššudu» in Text 5, p. 60 above (= BAM 574).

some cases the body itself is the direct object, e.g., *lētīšu takar* (you scrape his cheeks).[27] In another entry in the same Uruk tablet, «kâru» indicates vigorous rubbing with an abrasive substance:

> *humbiṣāte ša līši eli* (var. *egir*)[28] *šinnišu takâr adi dāmu uṣṣûni šammī annî ana muhhi šinnišu tēqi-ma ina'eš* (you *scrape* lumps of dough over (var. across) his tooth until blood comes out, you daub these drugs over his tooth and he will recover). [Hunger 1976, 1.44.18]

Another particularly diagnostic passage refers to scraping closed eyes in Akkadian eye disease recipes:

> *īnāšu katmā ukâl īnīšu takârma* UD.9.KAM *annâ teteneppuš* [BAM X.80, 85′]
>
> You *scrape* his eyes (while) he holds his eyes closed, and you keep doing this for 9 days.

Since there is no suggestion of rubbing any substance onto the closed eyes, this can be considered a form of phlebotomy, if the intention is simply to cause blood to flow.

It is worth comparing this unique passage with the Hippocratic treatise on eyes:

> When you scrape the lids of the eye, scrape with soft clean Milesian wool, winding it round the spindle(-shaped instrument), with care for the actual eyeball; do not cauterize through, up to the cartilage. It is a sign when there is enough scraping that it is no longer bright blood which comes, but bloody or watery matter. Then you should rub on one of the liquid drugs containing flower of copper. [Craik 2006, 43]

This Hippocratic passage is independent evidence for the idea of scraping the eye in order to draw blood, but it also advocates using a soft wool cloth for this purpose, corresponding to the repeated Akkadian instruction that "you scrape" (*takâr*) the body using a cloth which "you soften" (*tulâm*). There is little doubt that the Greek text is referring to bloodletting through scraping the eyelids, also distinguishing between blood and watery fluids, which coincidentally corresponds to Akkadian references to fluids and blood resulting from these procedures [see Text 11, p. 65 above].[29] The purpose of this comparison is not to postulate any relationship between the Akkadian

[27] Scurlock 2014, 316, 354, giving the meaning of "firmly rub" [327].

[28] The signs «e-gir» have been read as «epiš», which renders little sense, but the term occurs again in the tooth treatise BAM 543 ii.34 *karaša tasallaq egir šinnišu takarma ina'eš* (you boil leeks, you scrape across his tooth and he will improve).

[29] Craik 2006, 43. Craik [2015, 10] comments on this as follows, referring to the Hippocratic author of the treatise:

and Greek passages, but rather to show that scraping the eyelids can be considered a form of phlebotomy.

The question is whether this rather meager collection of attestations amounts to much of value. It seems clear that hardly any of this evidence can explain the use of surgery, either for wound therapy or setting bones. Once the idea of surgery is set aside, the possibility of bloodletting or the therapeutic extraction of blood from the patient's body remains a possibility. This picture, however, runs counter to the usual understanding of how bloodletting developed as a therapeutic practice.

The remarkable shift in Hippocratic medicine which ostensibly departed from earlier medical practice was the perception of disease as imbalance within the body, rather than as an attack from external stimuli (pathologies in the guise of demons, etc.). The trend toward making medicine more "scientific" and less dependent upon notions associated with magic led Hippocratic medicine down a very different path, in which disease reflected a plethora of blood in one part of the anatomy or a surfeit of some harmful bodily fluid (or humor) that affected the body's health. The concept of bodily humors took a long time to develop before agreement was reached on identifying the four fluids (blood, phlegm, black bile, yellow bile), which were usually treated through fasting and purging, eventually followed by the more radical procedure of bloodletting. One advantage to this regime is that it was streamlined and less dependent upon the cumbersome system of hundreds of drugs, such as those comprising the pharmacy of Mesopotamian medicine. The eventual toxic mix of a theory of humors combined with phlebotomy offered a simple solution to complex medical diagnoses. Because the logic behind phlebotomy appears to be easily explainable within developments in Greek medicine, it would be surprising to find it in a Mesopotamian medical context, where there is no theoretical context for it. One possibility is that bloodletting in these relatively rare Mesopotamian instances reflects a variety of concepts, with some perhaps explained by magical ritual, such as a way of appeasing Gula's anger. On the other hand, cutting a vein in the

It is evident too that he subscribes to a refinement of this, postulating two different types of flux from two different parts of the head to two different locations in the body (here, two different regions of the eye): superficial upper flux, from the area above the skull, or the scalp, and deep lower flux, from the area under the skull, or the brain. The fluids mentioned, apart from blood, are (*hydrops*) "moisture" (removed on trephination), and (*ixōr*) "ichor" fluid with a watery or bloody appearance.

temple against headache appears to be medical rather than magical, and it may be that this type of procedure was atypical and experimental. The only general conclusion at this stage is that bloodletting in Mesopotamia was exceptional rather than standard, and in two instances at least it was explicitly used as a purge [see Texts 4 and 9, pp. 59, 63 above], but otherwise no explanation was forthcoming.

B. More on bloodletting within Greek and later Roman medicine

Although conventional wisdom associates phlebotomy with Hippocrates within the context of a theory of four humors, the history of bloodletting is more complicated. For one thing, the theory of four humors is not actually established within Hippocratic treatises, since there were discrepancies in opinions regarding the identification of the four elements. Jacques Jouanna considers bloodletting to have been commonplace [1999, 159], but this opinion runs counter to observations made by Peter Brain, that while bloodletting was greatly favored by Galen, it was not a major component of Hippocratic therapy, pointing out that within the extensive Hippocratic Corpus, there are only about 70 references to bloodletting, all of them brief; there is scarcely one that occupies more than a few lines of the text, and many take up only one.[30] Brain notes elsewhere [1986, 118] that the Hippocratic Corpus preferred the use of purgatives, diet and fasting, fomentations, plasters, and enemas as treatments, rather than bloodletting. In fact, the Roman medical writer Celsus concurs with this conclusion:

> According to Hippocrates, the oldest authority, the treatment of the eyes includes bloodletting, medicaments, the bath and wine; but he gave little explanation of the proper times and reasons for these remedies, things of the highest importance in the art of medicine. There is no less help, often, in abstinence and clysters. [Celsus, *De med*. 6.6.1.E: Spencer 1935–1938, 2.188–189]

Jouanna agrees that phlebotomy was applied with caution, to be used only in cases of acute illness with patients who are young and strong, and that it was employed with many other types of treatments, include purging and cauterization. The controversial nature of phlebotomy can be seen in the opinions of the third-century BC medical authority Erasistratus, who himself was hardly an enthusiastic bloodletter but, according to Galen, preferred

[30] See Brain 1986, 113–121. Brain also argues that Galen, being "an enthusiastic venesectionist", interpreted Hippocrates in ways that influenced and colored modern evaluations of the Hippocratic Corpus, although the evidence presented by Brain shows that phlebotomy was not the primary treatment advocated by the Hippocratics and that it was employed with caution.

fasting and diet. In his treatise on venesection, Galen complains that Erasistratus has virtually nothing to say about venesection, despite Erasistratus being "so meticulous about the minutest detail as to describe even the boiling system of certain vegetables and of plasters" [Brain 1986, 15]. Galen complains that Erasistratus only mentions bloodletting in passing without attributing any weight to the procedure. Nevertheless, as Elizabeth Craik points out, Celsus is quite emphatic that this knowledge is widespread and that procedures to arrest the flow of phlegm by treating the vessels are a matter of common and universal practice

> celebrated not only in Greece but among other peoples too, to the extent that no part of medicine is more widely practiced throughout the world.

While the aim was universal, a wide range of diverse procedures was used in different communities and at different dates to attain it: some made a series of incisions at various points in the scalp; some used cautery at various points instead or as well [Craik 2006, 65–66].

In effect, within Greek and later Roman medicine, bloodletting can be seen as a development within the context of fasting and purgatives, as a means of manipulating internal imbalances, as clearly shown by Joanna's comprehensive study of Hippocratic treatises. The question is whether any aspect of the technology of uses of bloodletting can be found within Mesopotamia in any of the Babylonian sources being considered by the present study. If there is no anatomical imbalance or theory of humors involved, what purpose would bloodletting have served? This is the question that we will have to ask again, once we review bloodletting in later Talmudic medicine from Babylonia.

C. Bloodletting in the Babylonian Talmud

The question of bloodletting in Babylonia becomes more interesting if one follows up the Akkadian evidence with that from the Babylonian Talmud, which has a significant contribution to make to this discussion. Like in Akkadian texts, there is no obvious logic behind the use of bloodletting in Babylonian Talmud passages, nor is there any clear theoretical framework for bloodletting apparent from any Talmudic passages dealing with procedures usually identified as bloodletting.

The entire topic of bloodletting in the Talmud is first associated with a Babylonian scholar known as Mar Samuel or Samuel, who lived in the first half of the third century AD and was known for his interests in astrology, calendar, and healing arts, and many narratives referring to phlebotomy either refer to Samuel or were attributed to him. The crucial detail that affects

descriptions of phlebotomy is that Samuel, together with his Babylonian colleague Rav, were both thought to have spent time in Palestine and show knowledge of tannaitic traditions from Palestinian academies. This raises the question of whether phlebotomy could have been a technique used by doctors in Palestine who had some familiarity with Greek medicine, which was then brought to Babylonia as part of this process of *Wissenstransfer*.

As in the case of Akkadian texts that may have dealt with phlebotomy, we will marshal the evidence by examining all relevant terminology thought to refer to bloodletting. It is worth pointing out that modern translations of Talmudic medical passages and dictionaries are often influenced by medieval commentators, leading to unnecessarily complicated meanings that make little sense medically; the nature of medical instructions is that, for practical purposes, we expect them to be clear and unambiguous.

C.1 Hebrew «hqyz dm» (to puncture the blood)

This Hebrew expression[31] became frequently and consistently used in the Babylonian Talmud as a loanword and is assumed to refer to phlebotomy.[32] This is despite the fact that Babylonian Talmud Aramaic has its own vocabulary to express the notion of drawing blood: «mḥyn' lkw bsylw' dl' mb^{c} dm'» (I shall strike you with a thorn which does not draw blood), an idiomatic expression making a metaphoric threat [cf. Ket 91a(40); BB 151b(7)]. One also wonders why other comparable Aramaic terms were not used, as in the phrase «ḥrzyh sylw' bbyṣym» (a thorn pierced (*ḥrz*) him in the testicles).[33] Neither of these terms is used in bloodletting contexts in the Babylonian Talmud. The surprising feature of Hebrew «hqyz» is the semantic analogy to Akkadian «takāpu» (to puncture), which appears in passages above suggesting drawing blood [see Texts 7–8, p. 63 above]. The procedure involved is assumed to be similar to descriptions in Roman sources, such as that provided by Celsus:

> But whether any one of these is curable or not is easily learned by this test. The skin should be cut into or pricked with a needle: if blood escapes, which it usually does in the first two species, there is place for a remedy; if a whitish

[31] A *hiphil* (causative) form: «hqyz» < «nqz» (to puncture).

[32] The root «nqz» is unattested in Babylonian Talmudic Aramaic although it appears (rarely) in Syriac, but not as a term for bloodletting. The Aramaic equivalent, «'qyz dm» (to let blood), is used once in the Jerusalem Talmud [Ber 5c: Text 22, p. 88] and is clearly a calque on the Hebrew expression.

[33] Yev 75b.1: cf. Sokoloff 2020, 434, giving evidence for an *aphel*-form, «mḥryz» (to cause to pierce), which would conform semantically with Heb. «hqyz».

> humor, cure is impossible, and then we should even refrain from treating it. [Celsus, *De med*. 5.28.19.C: Spencer 1935–1938, 2.172–173]

There are certain key passages in the Talmud where bloodletting is discussed, foremost among which is Shab 129a–b, which tells us little about the practice of phlebotomy but raises questions regarding how the patient who undergoes the procedure should react, whether he feels a chill or should stand up or have a meal afterward. The overall impression is one of confusion, that the editors of the Talmud had no clear vision of what the procedure consisted of, why it was being used, and under what conditions it should be applied. As in all other examples of medicine in the Talmud, it is important to note the language in which passages appear, since statements in Hebrew may have been imported from Palestine academies, while those in Babylonian Talmudic Aramaic were more likely to have originated locally.

An appropriate place to begin is with an enigmatic Hebrew aphorism attributed to Samuel that has been badly misunderstood in all modern translations. The usual meaning attached to Samuel's dictum amounts to "if one ate wheat and let blood (*hqyz dm*), he only pricked (*hqyz*) the same wheat".[34] The basic idea appears to be that phlebotomy was to be performed while fasting, since eating before this procedure cancels its effectiveness. The actual expression *hqyz ḥṭh* is problematic: how does one "prick" or "puncture" wheat? The usual explanation is that the previously consumed wheat had replaced the blood, thus nullifying the effectiveness of bloodletting, but given the difficulties in imagining how this would work, it seems highly improbable. The misunderstanding can be clarified, however, since the term «ḥṭh», as well as meaning "wheat", can also refer to a gland or nipple on the body [see Hul 18b; Jastrow 1903, 453; Sokoloff 1992, 196], while the term «'kl», normally meaning "to eat", commonly refers in Akkadian medicine to being in pain.[35] Hence, Samuel's statement becomes a more focused medical instruction, based on familiarity with Akkadian medical terminology: "if a gland hurts

[34] Shab 129b(24):

> אמר שמואל אכל חטה והקיז דם לא הקיז אלא לאותה חטה
> *'mr šmw'l 'kl ḥṭh whqyz dm l' hqyz 'l' l'wth ḥṭh*

[35] There is some difficulty in interpreting Samuel's Hebrew aphorism within the semantics of Akkadian «akālu» (to be painful) and Pal. Aram. «ḥṭh» (nipple, gland). But since the Hebrew statement makes little sense as it stands, this interpretation rests on a supposition: the attribution to Samuel implies a Babylonian source for this statement, where nuances of Babylonian medicine could have been understood.

and he lets (lit. punctures) blood, he only punctures that same gland", i.e., the "puncturing" should apply to the source of the pain. The editors of the Talmud were generally confounded by this statement, adding a remark (in Aramaic) to say that it remained unresolved whether drinking and eating (after walking) had beneficial or adverse effects.[36] The discussion inspires little confidence that the Talmud actually understood the procedure of *hqyz dm*.

Samuel features again in a general comment on "puncturing the blood", together with his contemporary and colleague Rav, with whom he often disagrees, but the Talmud in Shab 129a–b records a number of joint statements on this very theme, attesting to the agreement of the scholars.

Text 14. Shab 129a(48)

רב ושמואל דאמרי תרוייהו כל המקיל בסעודת הקזת דם מקילין לו מזונותיו מן השמים ואומרים הוא על חייו לא חס אני אחוס עליו

rb w-šmw'l d-'mry trwyyhw kl hmqyl b-sᶜwdt hqzt dm mqylyn lw mzwnwtyw mn hšmym w-'wmrym hw' ᶜl ḥyyw l' ḥs 'ny 'ḥws ᶜlyw

Rav and Samuel both said: anyone who makes light of the meal of *hqzt dm*, his sustenance from heaven is made light of, as they say, (since) he took no pity on his life, should I take pity on him?

Context This is the first of four joint statements by Rav and Samuel (third-century AD Babylonia) on the topic of phlebotomy. It follows immediately after an account of how the Babylonian scholar Ea-uballiṭ (Ablaṭ) found Samuel sitting in the Sun after undergoing "puncturing" (*hqzh*).

This statement is somewhat philosophical and refers specifically to the Hebrew expression «hqzt dm» and its associated meal, although without specifying whether the meal should come before or after bloodletting. The implication of this passage is that bloodletting is dangerous and needs to be carried out in conjunction with a substantial meal, and anyone ignoring this advice is reckless.

[36] Shab 129b(27):

'ybᶜy' lhw štyyh l'ltr mᶜly 'bl btr hky 'w dylm' l' qšy wl' mᶜly tyqw

It was asked by them, is drinking immediately beneficial but afterward this harmful, or perhaps neither harmful nor beneficial; (the question) remained (undecided).

What is of interest here is the fact that a heavy meal was clearly not recommended by Greek and Latin authors who advocated the use of bloodletting. Celsus, for example, gives the following warning prior to treatment: "the patient should eat in moderation, and for three days beforehand drink water, for the day before abstain from everything" [Celsus, *De med.* 7.7.14.B: Spencer 1935–1938, 3.351]. It seems clear that Rav and Samuel's source for this aphorism was unlikely to have come from classical writers on venesection.

Another example showing considerable misunderstanding of the topic of *hqyz dm* as bloodletting occurs in a Hebrew passage in the Talmud (a *baraita*),[37] which probably originated in Palestine. It refers to seven examples of ascetics (lit. separatists, *prwšyn*)[38] who punish themselves physically, among whom are *prwš qyz'y*, with the latter thought to be bloodletters.[39] In this same passage, a later Babylonian scholar (R. Nachman bar Yitzhaq) explained the term «prwš qyz'y» as «zh hmqyz dm lktlym» (this is the one letting blood for the walls).[40] This puzzling statement is explained by medieval commentators (and accepted by modern translators) as referring to someone who walks with his eyes closed in order not to gaze upon a women and bangs his head against a wall, thus drawing blood. As expected, however, this medical context is actually making reference to human anatomy, with Aramaic «kwtl'» as a loan from Akkadian «kutallu» (the back of the

[37] Sot 22b(2), and the anonymous reader has drawn attention to a parallel «baraita» in the Jerusalem Talmud Ber 9.5, 14b. See also Geller 2021, 175, explaining the relationship between the extraneous «baraita» in the Talmud and noncanonical *ahû*-texts in Akkadian.

[38] See Muraviev 2015, 8 on medicine among eastern Syriac ascetics, suggesting that bloodletting was part of the medical regime of the Syriac medical tradition. The idea of *prwšyn* in Sot 22b being ascetics (rather than separatists) makes good sense, also in terms of their eclectic medical practices. It is important to note, however, that the Syriac technical medical terminology assembled by Muraviev [2015, 13–15] is predominantly Greek with virtually no overlap with technical medical vocabulary in the Talmud. The same pattern applies to Syriac medical terminology based mostly on Greek in a Genizah text published in Bhayro 2017 and also commented on in Müller-Kessler 2017. These texts are likely to be later in date than relevant passages in the Talmud.

[39] Sot 22b(2). The term «qyz'y» is considered to be derivative from «nqz» (puncture) [Jastrow 1903, 1357 (a *hapax*)]. Note that this same term also appears in the parallel passage in the Jerusalem Talmud [Ber 9:5, 14b].

[40] Sot 22b(7). אמר ר' נחמן בר יצחק זה המקיז דם לכתלים.

neck or head).[41] With this meaning in mind, the reference to *hmqyz dm lk<w>tlym* is indeed phlebotomy, that "this is the one letting blood from the rear parts (of the head/neck)".

Another question raised in the Talmud was about what measures are to be taken by someone who has undergone bloodletting in terms of keeping warm and what foods to eat. The discussion is framed in Hebrew, except for obscure remarks in Aramaic that *npš' ḥlp npš'* and *swmq' ḥlp swmq*, "breath replaces breath" (referring to living flesh) and "red replaces red" (referring to wine and blood).

Text 15. Shab 129a(35)

אמר רב יהודה אמר רב לעולם ימכור אדם קורות ביתו ויקח מנעלים לרגליו הקיז דם ואין לו מה יאכל ימכור מנעלים שברגליו ויספיק מהן צרכי סעודה מאי צרכי סעודה רב אמר בשר ושמואל אמר יין רב אמר בשר נפשא חלף נפשא ושמואל אמר יין סומקא חלף סומקא

'mr rb yhwdh 'mr rb lᶜwlm ymkwr 'dm qwrwt bytw wyqḥ mnᶜlym lrglyw ḥqyz dm w'yn lw mh y'kl ymkwr mnᶜlym šbrglyw wyspyq mhn ṣrky sᶜwdh m'y ṣrky sᶜwdh rb 'mr bśr wšmw'l 'mr yyn rb 'mr bśr npš' ḥlp npš' wšmw'l 'mr yyn swmq' ḥlp swmq'

Rab Yehudah said that Rav said: a man should always sell the beams of his house and he takes from the shoes for his feet, (if) he lets blood (*ḥqyz dm*) but he has nothing to eat; he should sell from the shoes of his feet and supply from this the requirements of a meal. What are the requirements of a meal? Rav said, "meat", and Samuel said, "wine". Rav said "meat: breath (life) replaces breath (life)", and Samuel said, "wine: red (wine) replaces red (blood)".

Context That this passage is mostly in Hebrew suggests that it may have been an aphorism originating in Palestine academies. Rav Yehudah (bar Ezekiel), a Babylonian scholar from the third century AD, often cited the sayings of Rav and Samuel, who are also attributed for a medical aphorism in Aramaic.

This passage clearly refers to bloodletting, but with characteristic hyperbole the Talmud calls for desperate measures for the patient who undergoes this procedure to procure meat and wine.[42] Fatty meat and red wine were favorite recipe ingredients in the Talmud, as in the aphorism, "if a woman ate meat

[41] See Sokoloff 2020, 523 and Celsus, *De med.* 6.6.9.B [Spencer 1935–1938, 2.203] for bloodletting from the back of the head: "after incising the skin of the occiput, a cup is to be applied there".

[42] Another passage with similar terminology is Hul 111a, which refers to the fatty nature of an animal spleen, which is why Samuel was served a meal of spleens on the day that he "did the thing" (*ky h' d-šmw'l ᶜbdy lyh tbšyl' dṭḥly bywm' dᶜbyd mlt'*), i.e., bloodletting: see the discussion below. This passage alludes to Shab 129a, which is the main source for a discussion of this theme, with the inference being that

and drank wine, she will have healthy children".[43] However, the theoretical background of bloodletting is hardly understood in this passage, since bloodletting as a therapy in Roman medicine was employed with fasting or moderation and abstinence, as can be seen from Celsus' postoperative advice:

> Subsequently the patient must have rest, abstinence, and inunction with soothing medicaments; the day following will be soon enough for food, which at first should be liquid to avoid the use of the jaws then, when the inflammation is over, such as has been prescribed for wounds, and in addition to these directions it is necessary that water should for some time be the only drink. [Celsus, *De med*. 7.7.14.F: Spencer 1935–1938, 3.353]

The idea behind phlebotomy is that it purges the body of harmful excess blood, in conjunction with purges and vomiting, but this cannot be reconciled with having a large meal of meat and wine immediately afterward. Caelius Aurelianus, for instance, reviews (and rejects) all major earlier authorities (the "ancients") on venesection, and in each there is no suggestion of a substantial meal with meat and wine being prescribed after phlebotomy; if anything is to be given, it is usually barley gruel or oxymel (a mixture of vinegar and honey), which are never mentioned in the Talmud. In fact, Caelius refers specifically to meat and wine as causing disease, rather than as treating it: "note that catalepsy arises from the same antecedent causes from which other diseases also arise, namely, indigestion, excessive drinking of wine, the eating of meat, and similar causes" [Caelius, *Acute Diseases* 2.65: Drabkin 1950, 166–167]. Similarly, Caelius refers to other physicians who prescribe abstinence from meat and wine; he refers to no less an authority than Diocles of Carystus, whom he says, "prescribes venesection in cases of epilepsy resulting from excessive drinking of wine or eating of meat".[44] In cases of the psychic ailment of phrenitis, wine after cupping was forbidden, and certain foods such as vegetables or barley should be prescribed instead of foods that the patient requests [Drabkin 1950, 52–53]. In another treatment for obesity, Caelius observes, "but if, as it happens, that the patient has actually eaten an immoderate amount of food, vomiting should then be

bloodletting required the consumption of fatty meats to compensate for the loss of blood.

[43] Cf. Ket 60b–61a. See also Git 67b, in which for a "three-day fever", the patient is given red meat and wine, and Git 70a, another recipe recommending fatty meat and wine.

[44] See Caelius, *Epilepsy* 1.125 [Drabkin 1950, 521] and 1.131 [Drabkin 1950, 526].

prescribed; for the weighing down of the body by excessive eating is more serious than the agitation caused by the remedy"; one of the remedies is venesection [*Chronic Diseases* 4.141: Drabkin 1950, 999]. In the same passage, Caelius listed the malpractice of other physicians (as was his usual practice): they prescribe coitus after bathing on the day when the patient is subjected to venesection, as well as purgative drugs, or a clyster, with minimal food or drink, or induced vomiting after the evening meal. It is instructive to see from this evidence how contradictory advice existed even in Roman circles regarding venesection and similar treatments, but comparisons show how descriptions of *hqyz dm* in the Talmud appear simplistic and naïve, as well as being at odds with classical sources.

C.2 Aramaic «ᶜbd mylt'» (doing the thing)

Another expression used in the Babylonian Talmud, *ᶜbd mylt'* (one does something), may have originally had little to do with phlebotomy but could have referred to any kind of medical or even magical procedure.[45] As such, it may have been a calque on Akkadian medical terminology, since cuneiform medical texts are often divided into three separate categories of treatment, marked by different labels, one of which is "its procedure" (DÙ.DÙ.BI or KÌD.KÌD.BI), literally equivalent to Akkadian «epuštašu» (its act). The expression reasonably corresponds to Aramaic «ᶜbd mylt'» (doing the thing). However, modern translations associate the expression «ᶜbd mylt'» with phlebotomy when used in medical passages in the Babylonian Talmud, as in the following example.

Text 16. Tan 21b(35)

ומאי הוו עובדיה דאבא אומנא דכי הוה עביד מילתא הוה מחית גברי לחוד ונשי לחוד ואית ליה לבושא דאית ביה קרנא דהוות בזיעא כי כוסילתא כי הוות אתית ליה איתתא הוה מלביש לה כי היכי דלא ניסתכל בה

wm'y hww ᶜwbdyh d'b' 'wmn' dky hwh ᶜbyd mylt' hwh mḥyt gbry lḥwd wnšy lḥwd w'yt lyh lbwš' d'yt byh qrn' dhwwt bzyᶜ' ky kwsylt' ky hwwt 'tyt lyh 'ytt' hwh mlbyš lh ky hyky dl' nystkl bh

[45] In Tan 25a, the story is told about Eleazar ben Pedat, a disciple of Rav and Samuel, that while he was sorely pressed financially (*dḥyq' lyh mylt' ṭwb'*), he (did the thing)—assumed to be bloodletting—but since he had nothing to eat (*wlyt lyh mydy lmyṭᶜm*), he took a clove of garlic in his mouth and slept. When the rabbis came to check up on him, they found him weeping and crying with a "tuft of fire" (*ṣwṣyt' dnwr'*) emanating from his forehead. It may be that the "thing" being performed in this case was some kind of incubation ritual, rather than bloodletting.

> And what was the (meritorious) deed of Abba the expert («'wmn'» = Akkadian «ummânu»)? That when he did the thing, he used to strike[46] men and women separately, and he had a garment which had a horn (*qrn'*) which was split like a scalpel, and when a woman came to him, he would cover her (with it) in order not to look upon her.
>
> *Context* Further details given in this text for Abba's good deeds have nothing to do with treatments but that he handles his patients with generosity. From a social viewpoint, it is of interest that Abbaye, another Talmud scholar interested in medical matters, was suspicious of Abba and sent colleagues to investigate, but Abba passed the test by demonstrating his excessive generosity.

Abba's title, «'wmn», is usually translated as "bloodletter", a term that indicates a low-grade profession, along with an elementary teacher, vine dresser, scribe, or tanner. Nevertheless, in medical contexts, the Akkadian meaning of "expert" for «ummânu» may be relevant, casting a very different nuance on any passage in which this term appears. Like «'wmn'», Akkadian «ummānu» has various meanings, including "craftsman", but in technical contexts it refers to an expert. An Akkadian eye prescription, for instance, refers to an ointment tested by the *ummânu*, while a Late Babylonian recipe collection refers to a prescription "from the hand of the *ummânu*".[47] Moreover, within Babylonian schools and academies, the *ummânu* was the professor or ordinarius.

The Talmud's narrative emphasizes Abba's *gentilesse* by covering his subjects with a garment for reasons of modesty; his attentions concentrated on parts of a woman's body that would normally be hidden from view, which may not apply to phlebotomy.[48] Nevertheless, it is compelling that Abba's "doing the thing" in this context refers to letting blood, judging by the description

[46] Interpreted as a calque on Akkadian «mahāṣu» (to strike) as a technical term for bloodletting: cf. Texts 3–6, pp. 59–62 above. A root «mḥṭ» was cited in Sokoloff 2020, 618 but without examples. This technical meaning in the present context is preferred to the more neutral translation: that Abba used to place (<*nḥṭ*) his clients separately.

[47] BAM X.172 [Geller and Panayotov 2020, 3, 96′]; Stadhouders and Johnson 2018, 581. See also Oshima and Van Buylaere 2018, 395–396, explaining both meanings of Akkadian «ummânu» as "scholar" and "craftsman", but without the connotation of low social status attributed to this profession in the Talmud.

[48] See Celsus, *De med.* 2.10.12 [Spencer 1935–1938, 1.162–163]: "it is not possible to let blood from everywhere, but only from the temples, arms and near the ankles".

that he struck (*mḥyt*) his male and female clients, similar to how a patient's vein was struck in Akkadian recipes cited above [see n46, p. 79]. It is further tempting to relate this account to bloodletting in some form because of the reference to the horn shaped like a scalpel. The obvious parallel comes from the works of Celsus and a lengthy discussion on bloodletting in book 2 of his work, where he refers to the use of the horn as a cupping instrument, described as a "less severe remedy" in relation to the use of a scalpel.

> Now there are two kinds of cups, one made of bronze, the other of horn. The bronze cup is open at one end, closed at the other; the horn one, likewise at one end open, has at the other a small hole. Into the bronze cup is put burning lint, and in this state its mouth is applied and pressed to the body until it adheres. The horn cup is applied as it is to the body, and when the air is withdrawn by the mouth through the small hole at the end, and after the hole has been closed by applying wax over it, the horn cup likewise adheres. [Celsus, *De med.* 2.11: Spencer 1935–1938, 1.165–167]

One other passage in the Talmud, Nid 20a, refers to the use of a horn in relation to bloodletting, recalling three Babylonian sages from the fourth–fifth centuries AD who "sat before an *'mn'*-expert who took (blood) with a horn" (*ytby qmyh 'wmn' šqly lyh qrn'* [see Text 21, p. 86 below]).[49]

C.3 Rav and Samuel on "doing the thing"

There is a rubric introducing four separate passages in Shab129a–b, attributing statements on phlebotomy to both of these contemporary authorities. The passages are not always in sequence but are interrupted by inserted non-contextual interpolations. We will deal with only three of the Rav and Samuel passages, since the first of these has already been discussed above [Text 14, p. 74 above].

[49] I am grateful to the anonymous reader for drawing my attention to the important variant readings in Ms. Munich 140, which reads,

> דאבא אומנא הוה עביד ליה דוכתא דגברי לחודיהו ודנשי לחודיהו והוה ליה לבושא דאית ביזעי ביזעי דכי הוה אתיא איתתא מלביש לה כי היכי דלא ליסכל בה [ביה]
>
> Abba the bloodletter ('wmn') made a place for men separately and for women separately and he had a garment that had [in it] slits, that when a woman came, he would dress her (in it) so that he would not look at her.

It is clear that the Munich manuscript has a completely different view of events without allusions to bloodletting found in the Vilna edition, but this witness does not allow us *a priori* to ignore the evidence of the printed edition, which is supported by readings in other manuscripts.

One observation on bloodletting attributed to both Rav and Samuel, in Aramaic, has undeniably significant parallels with Babylonian diagnostic texts [see Geller 2004a, 318–319].

Text 17. Shab 129a(52)

רב שמואל דאמרי תרוייהו האי מאן דעביד מילתא ליטום מידי והדר ליפוק דאי לא טעים מידי אי פגע בשכבא ירקי אפיה אי פגע דקטל נפשא מית אי פגע בדבר אחר קשה לדבר אחר

rb w-šmw'l d-'mry trwyyhw h'y m'n d-ᶜbyd mylt' lyṭwm mydy w-hdr lypwq d'y l' ṭᶜym mydy 'y pgᶜ b-škb' yrqy 'pyh 'y pgᶜ d-qṭl npš' myt 'y pgᶜ b-dbr 'ḥr qšh l-dbr 'ḥr

Rav and Samuel both said: If someone did the thing, let him eat something and afterwards go out. But if he did not eat something (and) if he met a corpse, his face will turn yellow (i.e., he will suffer from jaundice). If he met someone who had committed murder, he will die. If he met a pig (lit. another thing), he will be *liable* to leprosy (lit. another thing).[50]

Context This is the third in the sequence of comments on "doing the thing" attributed to both Rav and Samuel. It immediately follows a remark about Samuel, which says that he "did the thing" in a house of seven and a half bricks, but noticing that a half brick was missing. The latter passage is actually a Babylonian mathematical problem misunderstood as a comment on medicine.

The Babylonian *Diagnostic Handbook*, a collection of some 3,000 entries, gives predictions as to whether the patient will live or die or have a chronic illness, with diagnoses based on symptoms. It is a gold mine of information for medical historians.[51] This passage in Shab 129a matches up quite closely with one short section of Akkadian diagnostic omens. The context of each text is different, with ominous encounters in the Talmud reflecting the aftereffects of phlebotomy, while similar occurrences in the *Diagnostic Handbook* are meant to predict the patient's general fate, that is, whether he lives or dies. Nevertheless, comparison renders surprising results.

Just to recap: the Talmud stipulates three (typically Babylonian) "if-then clauses" for fasting after bloodletting: if one meets a corpse, he may get jaundice, if he meets a murderer, he may die, if he meets a pig, he may contract leprosy. In a similar vein, the opening chapter of the Babylonian *Diagnostic Handbook* is concerned, not with symptoms but with omens that

[50] Lit. "it will difficult (for him) in regard to another thing". This usage is a calque on Akkadian «kabātu» in diagnostic omens.

[51] See Labat 1951; Heeßel 2000 (partial with commentary); Scurlock 2014, 13–271; and Schmidtchen 2021 (partial with commentary). Labat and Scurlock translate the text without explanatory notes.

the exorcist encounters while en route to the patient's house for diagnosis. One such omen says, "if he (the exorcist) encounters a human corpse, the patient will recover" [George 1991, 151.35]. The idea is simple: equilibrium. A corpse means that if one person has died from illness, someone else may survive an illness, which also applies to our Talmud passage. The cuneiform text stipulates that if the exorcist encounters a "prowling god" [George 1991, 151.30] this will bring illness, since "prowling" suggests someone with criminal intent; this is our murderer in the Talmud pasage.[52] A third omen refers to the exorcist encountering a pig [George 1991, lines 5–10], predicting that the patient will die. Pigs were hardly prestige animals in Babylonia, since they were not normally sacrificial animals in temples, and although it is unclear why pigs were so ominous in this context, it is remarkable that the Talmud passage takes a similar view. These correspondences appear to be something more than merely coincidental.

Another observation attributed to both Rav and Samuel (with the same rubric as the passage mentioned above) may not actually refer to bloodletting, since it discusses the influence of "wind" on one who "does the thing" (*ᶜbyd mylt'*).

Text 18. Shab 129a(49)

רב ושמואל דאמרי תרוייהו האי מאן דעביד מילתא לא ליתיב היכא דכריך זיקא דילמא שאפי (שפי) ליה אומנא ומוקים ליה ארביעתא ואתי זיקא ושאיב (ושאיף) מיניה ואתי לידי סכנה

rb w-šmw'l d'mry trwyyhw h'y m'n dᶜbyd mylt' l' lytyb hyk' dkryk zyq' dylm' š'py (špy) lyh 'wmn' wmwqym lyh 'rbyᶜt' w'ty zyq' wś'yb (var. wš'yp) mynyh w'ty lydy sknh

Rav and Samuel both said: if one "did the thing", it should not be situated where "wind" (flatulence) circulated. Perhaps the expert (*'wmn'* = Akkadian *ummânu*) smears (*materia medica*) on it and sets a quarter measure (of *materia medica*). Should flatulence come and (blood) is drawn from him, it can (still) lead to danger.

Context This is the second in a series of statements attributed jointly to Rav and Samuel regarding "doing the thing".

The meaning of "doing the thing" (*ᶜbyd mylt'*) as a euphemism for phlebotomy works well for this text. The usual understanding of the passage in both medieval and modern versions[53] is that phlebotomy should not be

[52] Cf. Scurlock 2014, 96, 98: *qāt eṭemmi šaggaši* (hand of a murderous ghost) (and frequently), and Scurlock 2014, 17, 89 *qāt ili šaggaši* (hand of a murderous god).

[53] The famous 11th-century commentator Rashi assumes that the wind comes through an open window, which is essentially how modern translations interpret the text.

carried out while the patient sits in a draft (*l' lytyb hyk' dkryk zyq'*). But there is no medical basis for this interpretation, nor does it make sense with the additional reference to "smearing" the patient. What is the actual medical condition being treated?

Clearly, the medical problem is «zyq'», corresponding to Akkadian «šāru» (wind), frequently used in medical texts to indicate flatulence within the body but also attested in the Talmud.[54] Hence, the passage is concerned with "wind" or flatulence circulating in the body and smearing or rubbing or massaging the body as an external treatment was common in Akkadian medicine. Many recipes in the *Syriac Book of Medicine* likewise employ the same term «šwp» meaning "to smear" on medical ingredients. In fact, the treatment in the Talmud passages has two quite separate clauses. In the first, the *'wmn'* expert "establishes" a dosage, since the *rby^{c}t'* (quarter measure), normally refers to a liquid measure.[55]

The second clause, however, is a prognosis, that "should flatulence occur and it (i.e., blood) is drawn from him, it can (still) lead to danger".[56] Hence, for the problem of "flatulence" in the body, two separate remedies were employed. The first was bloodletting ("doing the thing") but not on the exact place where the flatulence was acute (indicated by pain), and the second was massage. Of the two remedies, bloodletting was considered to be more dangerous, as the text explicitly points out. The tacit warning of the danger is consistent with the fact that bloodletting was seldom employed in Babylonian medicine and remained controversial even within Greek and Roman medicine.[57]

[54] See CAD Š/2.138 and Av Zar 28b(41), remarking that beetroot (is good) for flatulence (*sylq' lzyq'*). A second possibility is that «zyq'» refers to a disease-causing demon, which can still be treated medically. Although the anonymous reader for this journal has questioned this interpretation, there is no medical evidence known to the author warning against phlebotomy being carried out in windy conditions.

[55] Cf. Sokoloff 2020, 1033. The expression «mwqym lyh 'rby^{c}t'» can simply mean that the expert has "provided"—Akkadian «šakānu» (to set, establish)—a quarter amount (shekel or liquid measure) of *materia medica* for the patient. The translation in Sokoloff 2020, 972 seems hardly credible: "lest the bloodletter let (the blood) flow from him and reduce it to a *revi'it*".

[56] The meaning of «ś'b» is based on Mandaic «s'b dm'» for bloodletting: see below.

[57] Even Celsus, a strong advocate of bloodletting, recommended caution in relation to applying the procedure.

The final anecdote in Shab 129b in the sequence of comments attributed to both Rav and Samuel provides typical advice on diet and regimen in connection with bloodletting.

Text 19. Shab 129b(1)

רב שמואל דאמרי תרוייהו האי מאן דעויד מילתא לישהי פורתא והדר ליקום דאמר מר חמשה דברים קרובים למיתה יותר מן החיים ואלו הן אכל ועמד שתה ועמד ישן ועמד הקיז דם ועמד שימש מטתו ועמד

rb w-šmw'l d-'mry trwyyhw h'y m'n d^{c}byd mylt' lyšhy pwrt' whdr lyqwm d'mr mr ḥmšh dbrym qrwbym lmyth ywtr mn hḥyym w'lw hn 'kl w^{c}md šth w^{c}md yšn w^{c}md hqyz dm w^{c}md šymš mṭtw w^{c}md

Rav and Samuel both said: If someone "did the thing", let him stay a little and afterwards rise, just as the Master said, (in Hebrew): five things bring someone nearer to death than to life, and they are: one ate and stood up, one drank and stood up, one slept and stood up, one let blood and stood up, one had sex and stood up.

Context This is the fourth in the sequence of joint statements from Rav and Samuel regarding "doing the thing". It is predominantly a Hebrew aphorism that probably did not originate in Babylonian schools.

This type of advice on how to stay healthy is a typical feature of the Hippocratic Corpus and later Greek and Latin medical writings, but it is completely unknown to cuneiform medicine. Caelius Aurelianus, for instance, states categorically that "coitus weakens the parts of the body and reduces the general strength" [Drabkin 1950, 998–999]. In another treatise on dropsy, Caelius refers to a prescribed regime of having the patient walk around before dinner but then observes that "one must feel concern about the digestion of even healthy persons who eat at that time" [Drabkin 1950, 806–807]. The fact that this kind of statement from Rav and Samuel is in Hebrew further suggests that it was brought to Babylonia from abroad, but it is unlikely to reflect any deep penetration of Hellenistic culture into Babylonia.

It is the part of a good practitioner to show that without the withdrawal of blood there is no hope, and to confess how much fear there may be in that step, and then at length, if the attempt is demanded, to let blood. In such a case there should be no hesitation about it; for it is better to try a double-edged remedy than none at all; and in particular it should be done: when there are paralyses; when a man becomes speechless suddenly; when angina causes choking; when the preceding paroxysm of a fever has been almost fatal, and it is very probable that a like paroxysm is about to set in which it seems impossible for the patient's strength to sustain. [Celsus, *De med.* 2.10.8–9: Spencer 1935–1938, 1.159].

C.4 Aramaic *pwrs' ddm'*

One term assumed to mean "bloodletting" in the Bavli is «pwrs' ddm'» [see Geller 2004a, 311–312], which appears in connection with a Hebrew medical aphorism:

> Text 20. BT Shab 129b(1)
>
> אמר שמואל פורסא דדמא כל תלתין יומין ובין הפרקים ימעט ובין הפרקים יחזור וימעט
>
> *'mr šmw'l pwrs' ddm' kl tltyn ywmyn wbyn hprqym yḥzwr wymᶜṭ*
>
> Samuel said, phlebotomy (*pwrs' ddm'* lit. staunching of blood)—every 30 days; and between periods of age, he should reduce it; and between (further) periods of age, he should again reduce (it).
>
> *Context* This passage, another attributed to Samuel, introduces a number of statements regarding which days of the week are favorable or unfavorable for bloodletting, more relevant to astrology than phlebotomy.

The passage is problematic, since it appears that the Aramaic expression «pwrs' ddm'» should mean phlebotomy here or a procedure carried out monthly, although progressively less over time. The problem is that the Aramaic term matches closely with Akkadian «parāsu dāma» (to staunch blood), which occurs regularly in Akkadian medical texts in response to bleeding from various orifices. The question is how to explain the expression «pwrs' ddm'», based on the common Akkadian expression that means precisely the opposite, stopping the flow rather than the letting of blood.[58] The likelihood is that the choice of the expression «pwrs' ddm'» was an attempt to domesticate the unfamiliar technology of phlebotomy by finding suitable terminology from Akkadian medicine. Since the most commonly used Akkadian idiom associated with blood flow was «parāsu dāma» (or perhaps «pirsu ša dāmi»), this technical expression was adopted by the Talmud for phlebotomy, even though the meaning was hardly apt.

One possible way of explaining the connection between Aramaic *pwrs' ddm'* and Akkadian «parāsu dāma» may come from an interpretation of venesection by the Roman writer Caelius Aurelianus, who commented that Erasistratus used venesection as a "revulsive" to stop hemorrhage, although this was considered to be controversial by other physicians [see Brain 1986, 17 n8, citing Caelius Aurelianus]. The idea of a "revulsive" is that it transfers blood congestion from one part of the body to another, which could explain

[58] Another Aramaic expression for staunching blood is «lmypsq dm'», which occurs in Ab Zar 28a(37).

how an Akkadian medical term for staunching blood, «parāsu dāma», became an Aramaic term for phlebotomy, «pwrs' ddm'». However, one cannot assume that Talmudic medicine was aware of third-century AD medical writings in either Greek or Latin.

C.5 Aramaic *šbq dm'* (pour out blood)

The usual meaning assigned to this Aramaic root is to "leave, let", which is then assumed to refer to letting blood, but this kind of coincidental shared idiom is unlikely between languages. It is more probable that the rare Aramaic expression (also infrequent in Syriac and Mandaic) conforms to idiomatic Akkadian («šapāku»/«tabāku») for spilling out blood. The only clear example of this expression from the Talmud occurs in Shab110b(38), referring to blood being drawn from a donkey foal (also interpreted as bloodletting): «wlyšbwq lyh dm' m'pwtyh» (let one shed blood from its forehead). Similarly, recipes in the third section of the *Syriac Book of Medicine* usually make no mention of phlebotomy, with the only exceptional case being the expression «dm' šbq» (blood poured out).[59] The expression «šbq dm'» for bloodletting in case of plethora occurs only in a few other instances in the *Syriac Book of Medicine*, in passages with a possible Greek *Vorlage*.[60]

C.6 «šql dm'» (to take blood, let blood)

The phrase is unusual and only occurs in two clear contexts of bloodletting. The first is in Sanh 109b in an imaginative account (in Aramaic) about four judges in Sodom with colorful names (liar, forger, case-bender, etc.) who perverted justice. In the last example, the judge would say to the Sodomite who was wounded by his comrade, "give him a fee, since he has let blood for you!" (*hb lyh 'gr' dšql lk dm'*).

In this second case, the term «šql qrn' lyh» (lit. to take the horn to him) only makes sense if it refers to taking blood with a horn, probably cupping.

Text 21. Nid 20a(2)

אמימר ומר זוטרא ורב אשי הוו יתבי קמיה אומנא שקלי ליה קרנא קמייתא לאמימר חזייה אמר להו אדום דתנן כי האי שקלי ליה אחריתי אמר להו אשתני אמר רב אשי כגון אנא דלא ידענא בין האי להאי לא מבעי לי למחזי דמא

[59] See Budge 1913, 557 *ḥšḥ lhwn kwy' db'spwg' dṭmšyn lhwn bmy' šḥyn' wšbwq dm'* (cauterizing is useful for them with a sponge, so that you cleanse them in hot water, and pour out blood).

[60] Cf. Budge 1913, 1.150, 10 *šbq dm'* (bloodletting in case of plethora); 16.11, 13. The passages contrast with recipes in the third section of Budge 1913, which have closer parallels to medicine in the Babylonian Talmud.

> *'mymr wmr zwṭr' wrb 'šy hww ytby qmyh 'wmn' šqly lyh qrn' qmyyt' l'mymr ḥzyyh 'mr lhw 'dwm dtnn ky h'y šqly lyh 'ḥryty 'mr lhw 'štny 'mr rb 'šy kgwn 'n' dl' yd^{c}n' byn h'y lh'y l' mb^{c}y ly lmḥzy dm'*
>
> Amemar and Mar Zutra and Rab Ashi [all fourth/fifth-century Babylonian *amoraim*] were sitting before an expert (*'wmn'*); a horn was taken for Amemar first; he saw (the blood and) said to them: (It is) red, like what we learned (in the Mishnah). When a horn was taken for one (of them) again, he (Amemar) said to them: It (the color) has changed. Rav Ashi said: I, for instance, do not know (the difference between) this and that, I am not sought out to examine blood.
>
> *Context* The context is a discussion that originated in Palestine academies (in the Mishnah), regarding five potential shades or colors of impure menstrual blood, including blood seen as black or green. One rabbi equates the color of blood taken during bloodletting as one of the shades of red discussed in the Mishnah.

The passage concerns three Babylonian sages from the fourth/fifth century AD, which places the event much later than the early third-century traditions attributed to Samuel. The salient points are that blood appears to be extracted with the use of a horn as a cupping instrument and that the color of the extracted blood changed between the first and second bloodletting procedures. Otherwise, no other details of how or why the procedure was performed are recorded.[61] Nor is this the chief interest of the Talmud. This passage in Tractate Niddah is concerned with the color of blood as relevant to menstrual blood and ritual cleanliness. The fact that Amemar was apparently treated by cupping in the company of two colleagues may indicate that by the fourth/fifth centuries AD, there was sporadic use of bloodletting in Babylonia, as indicated by this neutral witness who was not concerned with the medicinal aspects of this procedure. Nevertheless, the extent and popularity of the use of phlebotomy cannot be judged by this or other accounts in the Talmud.

[61] For a roughly contemporary discussion, see Drabkin 1950, 204–205 and 212–213, on Caelius' remark on the color of extracted blood changing from being red to bluish. See also Celsus, *De med.* 2.18 regarding bloodletting:

> It more often happens that the flow of blood continues as black as on the first day; although this be so, nevertheless, if enough has flowed out, bloodletting should be stopped, and always an end should be put to it before the patient faints. [Spencer 1935–1938, 1.164–165]

C.7 Was there phlebotomy? The view from Palestine

A comic view of bloodletting can be seen in an anecdote in the Jerusalem Talmud.[62]

Text 22. JT Ber 5c[63]

רבי זעירא כד סלק להכא אזל אקיז דם אזל בעי מיזבון חדא ליט׳ דקופד מן טבחא אמ׳ ליה בכמה ליטרתא אמ׳ ליה בחמשין מניי וחד קורסם אמ׳ ליה סב לך שיתין ולא קביל עילוי סב לך שבעין ולא קביל עילוי סב לך פ׳ סב לך צ׳ עד דמטא מאה ולא קביל עילוי אמ׳ ליה עביד כמנהגך ברומשא נחית לבית וועדא אמ׳ לון רבנן מה ביש מנהגא דהכא דלא אכיל בר נש ליטרא דקופד עד דמחו ליה חד קורסם אמרין ליה ומה הוא דין אמ׳ לון פלן טבחא שלחון בעיי מייתיתיה ואשכחון ארוניה נפקא אמרין ליה ר׳ כל הכין אמ׳ ליה וייתי עליי דלא כעסית עילוי מי סברת דמנהגא כן

rby zᶜyr’ kd slq lhk’ ’zl ‘qyz dm ’zl bᶜy myzbwn ḥd’ lyṭ` dqwpd mn ṭbḥ’ ’mr lyh bkmh lyṭrt’ ’mr lyh bḥmšyn mnyy wḥd qwrsm ’mr lyh sb lk šytyn wl’ qbyl ᶜylwy sb lk šbᶜyn wl’ qbyl ᶜylwy sb lk p` sb lk ṣ` ᶜd dmṭ’ m’h wl’ qbyl ᶜylwy ’mr lyh ᶜbyd kmnhgk brwmš’ nḥyt lbyt wwᶜd’ ’mr lwn rbnn mh byš mnhg’ dhk’ dl’ ’kyl br nš lyṭr’ dqwpd ᶜd dmḥw lyh ḥd qwrsm ’mryn lyh wmh hw’ dyn ’mr lwn pln ṭbḥ’ šlḥwn bᶜyy myytytyh w’škḥwn ’rwnyh npq’ ’mryn lyh rby kl hkyn ’mr lyh ’mr lyh wyyty ᶜlyy dl’ kᶜsyt ᶜylwy my sbrt dmnhg ’kn

Rebbi Zeïra went to have himself bled (*’zl ’qyz dm*) when he ascended here. He went and wanted to buy a pound of red meat from a butcher. He asked him: How much is that pound? He (the butcher) said to him: 50 minas and a *blow* (*qwrsm*). He (Zeïra) said to him: Take 60, but he (the butcher) did not accept (it). Take 70, but he did not accept (it). Take 80, take 90, until he came to 100 and he did not accept (it). Then he (Zeïra) said: Do what is your routine. The next morning, he (Zeïra) went to the Academy and said to them: Rabbis, what is this bad practice here that nobody can eat a pound of red meat unless they strike him a *blow*! They said to him: Who is that? He said: So-and-so the butcher. They sent to bring him (the butcher) but they found that his coffin was being carried out. They said to him (Zeïra): Rabbi, is that all? He said to them: It happened to me, but I was not angry about it; did I not think that this was general practice?

The idea behind this humorous piece was that buying meat from a butcher was required as an antidote for the effects of phlebotomy. There is no explanation given as to why the butcher wishes to “strike” his customer, but it is clearly based upon a pun on phlebotomy. The key term is Aramaic «qwrsm»

[62] We have slightly modified the translation of Kiperwasser 2019, 357. The passage is also translated by Guggenheimer 2000, 248.

[63] JT Ber 5c based on readings of the Leiden ms., p. 13 of the facsimile edition.

for a blow, presumably a loanword from Greek «κρουσμός» (smiting),[64] (striking, tapping) as well as «κροῦμα» (stroke, usually referring to sound). This also happens to be one of the meanings of the root «nqz» [in Syriac, cf. Sokoloff 2009, 945], along with bloodletting in the expression «'qyz dm'» in this passage. This provides the clue to understanding the humor .

The Jerusalem Talmud relates how the customer, Rabbi Zeïra, kept raising the amount he wished to pay for meat, while the butcher kept refusing the price but insisted on giving his customer a "slap" or blow. The opening line of this passage is the clue to the humor but only serves as explanatory background information that Rabbi Zeïra "went to let blood" (*'zl 'qyz dm*). This is certainly how the butcher understood the situation. If one reads the opening line slightly differently, matters become clear: that «'zl 'qyz dm» means, "he proceeded (as if) to let blood". When the butcher saw that Rabbi Zeïra wished to purchase red meat, he naturally assumed that this was because the customer was to be bled. For this reason, the butcher did not accept the offered price, even when doubled or tripled, because he intended to charge his customer for *both* the meat *and* the treatment, since «qwrsm» (a blow), was a euphemism for phlebotomy (*'qyz dm'*) [see Texts 14 and 15, pp. 74, 76 above]. This clearly puzzled poor Rabbi Zeïra, because he had moved from Babylonia and was unaccustomed to local customs in Palestine, where ordering red meat was considered a normal prerequisite purchase for someone wishing to undergo bloodletting. It is clear that this Babylonian immigrant to Palestine made no connection between purchasing meat and bloodletting.[65]

The background issue for this passage is who was qualified for carrying out phlebotomy? One possible suggestion is that it was the barber, but this model is based on later medieval parallels, since there is no evidence for a barber-surgeon in the Talmud. As we have seen above [Texts 16, 18, and 21, pp. 78, 82, and 86 above], the *'wmn* expert was occasionally associated with bloodletting, but not exclusively. This leaves the *ṭbḥ* or butcher as another possible candidate, which is the point of the present anecdote, since the term for "butcher" could also be rendered in Mishnaic Hebrew as «ṭbḥ 'wmn» (expert butcher) [cf. Beṣ 28a], which brings us closer to the traditional Talmudic term for bloodletter, namely, the *'wmn* expert. In any case,

[64] So Guggenheimer 2000, 249: cf. Sokoloff 1992, 484 (with an incorrect etymology). LSJ, *s.v.* κρουσμός gives this term as a biform of «κροῦσις».

[65] See, by contrast, the treatment of Kiperwasser 2019, 356–361.

this passage from the Jerusalem Talmud is a parody on phlebotomy but cannot be used to reflect normative medical practices.

D. Conclusion

As already pointed out in a previous study [Geller 2004a, 309], there is minimal cuneiform evidence in Babylonia for dieting, purging, fasting, and bloodletting, all of which are relatively minor in comparison with the common applications of prescriptions in the form of solids, liquid potions, clysters, massages, and drugs being blown into orifices through tubes. The lack of anything corresponding to humoral theory in cuneiform is decisive in distinguishing between Babylonian and Hippocratic medicine: the concept of anatomical imbalances as causing disease is a "Pythagorean" approach in which relatively simple procedures (e.g., purging, fasting) govern treatment rather than the cumbersome calculations required to administer a large repertoire of drugs. Bloodletting developed naturally out of this system as a means of correcting imbalances and plethora. Since any connection with later Greek theory is to be ruled out, the sporadic use of bloodletting within Babylonian and Assyrian medical texts must have some other rationale, which we can only surmise as being another type of purging of bodily fluids thought to be toxic or infectious.

The most serious difficulty in assessing Talmudic evidence for phlebotomy is to see how it fits in with evidence from elsewhere. The main feature of phlebotomy within Hippocratic medicine is that it was not often used or that it was used in conjunction with enemas and purgatives, since Greek medicine was attuned to the idea of restoring the body's internal balances.[66] None of these other procedures, including fasting, is ever employed in Talmudic medicine, and only rarely are purgatives recommended in earlier cuneiform medicine from Babylonia.

Nevertheless, despite problems of terminology and a lack of any explicit theoretical framework, the possibility remains that bloodletting was to some undetermined extent practiced in Babylonia, as attested in a few cuneiform texts as well as anecdotal evidence in the later Babylonian Talmud, as supported by some random references to bloodletting in the Mandaic *Book of the Zodiac*. Nevertheless, the picture remains complex and difficult to explain as a diachronic development. For instance, bloodletting was probably

[66] See Brain 1986, 112–113, 118, for the contention that the Hippocratic treatise on diseases of women only refers once to phlebotomy but has numerous references to other medical procedures, such as fumigation, purgatives, and pessaries.

familiar in Roman Palestine, since medical aphorisms in the Talmud in Hebrew (probably originating in Palestine) show a clear preference for diet and regimen, which was a favorite Hippocratic topic but unattested in cuneiform. On the other hand, there is little information in the Talmud regarding accurate knowledge of human anatomy, which is demonstrated in both Greek and Latin sources to be a requirement for the procedure of correct bloodletting.[67] The Mandaic *Book of the Zodiac*, on the other hand, appears to be squarely Babylonian, with no indications of influence of Greek medical theory, and this also reflects bloodletting data in Aramaic passages in the Babylonian Talmud; it is likely that these Babylonian Aramaic texts were indebted to earlier cuneiform medicine. However, by the late fourth century or fifth century AD, the situation in Babylonia had changed, since by this time cuneiform tablets were no longer legible, and the large corpus of medical pharmacology was moribund and inaccessible. The new form of healing that took hold consisted of incantations on ceramic bowls, with virtually no recorded medical prescriptions or procedures. For this reason, Babylonian sages may have experimented with alternative forms of healing that did not require a large repertoire of ingredients and medicines; and, hence, may have offered a reasonable option, since the procedure could be performed by poorly trained practitioners. In any case, phlebotomy probably served as a symbol of medical sophistication, at least in the minds of the general public.

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Appendix
Mandaic terminology for bloodletting

There are several different expressions for bloodletting/cupping in Mandaic texts, which indicate some usage of the procedure in Mesopotamia in texts that coincide with the final phases of cuneiform medicine while being contemporary with the Talmud. Selected Mandaic texts represent independent evidence for Aramaic technical medical vocabulary, without any suggestion of Greek influence. Most of the examples, cited below, are drawn from

[67] Jouanna 1999, 155–160, also points out that bloodletting needed to be practiced by someone familiar with veins and arteries.

the *Book of the Zodiac*, which in addition to astrology [Rochberg 2010, 223–235; Scurlock 2005] also records medical information:

1 Mandaic «s'b zma» (draw blood) from the *Book of the Zodiac*[68]
   - Drower 1949, 100 = 160.15 *kḏ baiit misaiubia zma^{c}u mipta siriana* (lest you seek to draw blood or open a vein).
   - Drower 1949, 71 = 110.12–13 *la-kašar misaiubia* (var. *misaibia*) *zma dhul mn mipta širiana* (it is not fitting to draw blood and be afraid of opening a vein).

2 Mandaic «šry zma» (release blood) and «nqp zma» (withdraw blood)
   - Drower 1949, 90 = 142.15 (20th day of the month) *ṭab l-mišria u-mapuqia zma* (is good for releasing (*šry*) and withdrawing (*npq*) blood).
   - Drower 1949, 93 = 147.109–110 (*šry zma*): *man ḏbšumbulta hua mikṣar ^{c}u šarilḫ zma la-maiit* (whoever is ill under Virgo and blood is drawn, it will not be fatal).
   - Drower 1949, 101 = 161.8–10 (*npq zma*): *kḏ baiit mapuqia zma hauia sira b^{c}mbra u-aria u-hiṭia u-apuqia zma šapir* (if you seek to draw blood and the Moon was in Ares or Leo or Sagittarius and one draws blood, it is favorable).

3 Mandaic «šbq zma» (pour out blood)
   - Drower 1949, 77 *šbiqlḫ zma mn zma šuplḫ minḫ asqḫ,* (leave aside (or let) the blood, smear him with the blood, give him to drink from it). The patient is brought into the steppe and in the sunlight, and to leave blood for him (*šibqlḫ*) but then to smear the blood and have the patient drink it. This is unique and unlikely to be human blood but the blood of an animal. Nevertheless the terminology may refer to phlebotomy.[69]
   - Drower 1960 [ATS 2.3, 1445, cited in CAL *s.v. šbq*]: *luat zauḫ laniqrab uzma lanišbuq* (he should not approach his wife or shed blood). This is the same usage found several times in the *Syriac Book of Medicine* recipes.

[68] Drower and Macuch 1963, 320 translates this term by "defile", followed by CAL *s.v.* «s'b». But this meaning makes little sense in context and a more likely cognate is Aramaic «š'b» (to draw, e.g, water), in Jastrow 1903, 1505.

[69] See MQ 10b(6), *lmšql dm' lbhmh* (letting blood from an animal).

The expression «šbq dm'» (to pour out blood) as a technical term for phlebotomy only appears once in the Babylonian Talmud in Shab 110b(38), and not referring to human bloodletting. The only other analogous expression is the Mandaic «npq zma» for drawing blood. The Talmud does not follow this Aramaic usage but prefers the Hebrew equivalent «hqyz dm». The Babylonian Talmud also does not usually employ the Mandaic expressions «s'b zma» or «šry zma» (draw blood or release blood), except in one case [see Text 18, p. 82 above]. This pattern shows that the Talmud did not generally utilize local Aramaic terminology when discussing bloodletting.

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Abbreviations

BAM Babylonische-assyrische Medizin
BT Babylonian Talmud: Tractates
- Ab Zar *Tractate Abodah Zarah*
- BB *Tractate Baba Batra*
- Ber *Tractate Berakot*
- Beṣ *Tractate Beiṣah*
- Git *Tractate Gittin*
- Hul *Tractate Hullin*
- Ket *Tractate Ketubot*
- MQ *Tractate Moed Qatan*
- Nid *Tractate Niddah*
- Sanh *Tractate Sanhedrin*
- Shab *Tractate Shabbat*
- Sot *Tractate Sotah*
- Tan *Tractate Taanit*
- Yev *Tractate Yevamot*

BRM *Babylonian Records in the Library of J. Pierpont Morgan*
CAD *Chicago Assyrian Dictionary*
CAL *Comprehensive Aramaic Lexicon*. Online: https://cal.huc.edu/
Hh HAR-*ra hubullu* (lexical series)
JA *Journal Asiatique*
JT *Jerusalem Talmud*
LSJ H. G. Liddell, R. Scott, and H. S. Jones, *A Greek-English Lexicon*
MSL *Materials for the Sumerian Lexicon*
STT Sultantepe Texts

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