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Fluids, rivers, and vessels: metaphors and body concepts in Mesopotamian gynaecological texts[1]

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Abstract

This paper discusses the peculiar disease condition of "locked fluids" found in a number of gynaecological texts from 2nd and 1st millennium BCE Mesopotamia. To venture an interpretation of the underlying disease concept, the condition of "locked fluids" is first examined in the context of related and contrasting symptoms and female health problems connected to body fluids within the gynaecological corpus. The second part of this article turns to the physiological concepts of the (female) body linked to the disease condition of "locked fluids". The author highlights metaphors and comparisons with objects from daily life and the natural environment, which can be found in medical incantations and therapeutic rituals used to combat gynaecological disorders, as a key to indigenous concepts of physiology. The use of the same metaphors in connection with intestinal disorders points to an intuitive understanding of different processes within the body on the basis of comparisons and equations stemming from daily-life experiences. The last section presents similar notions to the Mesopotamian disease concept of "locked fluids", which are contained in gynaecological treatises of other cultures and times.

This paper argues on the one hand that it is possible to reach a limited understanding of the discussed disease concept of "locked fluids" on the basis of Mesopotamian medical texts alone. On the other hand, a comparative approach can be helpful to render the interpretations of physiological and pathological concepts in texts from one particular culture more plausible, although such an approach also has its limitations. By drawing on intercultural comparisons, the author does not suggest a transmission of the discussed disease concept in question ("locked fluids") between Mesopotamia on the one hand and Egypt, Greece and China on the other. In contrast, it is suggested that there existed (beside many differences) similar basic notions of the body and its inner processes as well as similar explanations for what goes wrong in the body when certain disease conditions occur.[2] These intercultural similarities

[1] This contribution forms the reworked version of two talks presented at the UCL Ancient Science Conference 2012 and the BANEA conference 2013 in Cambridge and is an extract of my current research project entitled "Gynaecology in the Medical Texts of Ancient Mesopotamia from the 1st Millennium BCE" funded through a Medical History and Humanities Fellowship of the Wellcome Trust, London during 2011-2013. Within this project, the author is currently preparing an edition of the Babylonian gynaecological corpus. I would like to thank the Wellcome Trust for funding this research, as well as Andrew George and Martin Worthington for their helpful remarks concerning the interpretation and analysis of the disease label "locked fluids". I am also grateful to Marten Stol who drew my attention on the diarrhoea-incantation in Th. 1905-4-9,90+ discussed here, and moreover I would like to express my gratitude to Mark Geller who shared his preliminary edition of this text with me. I would also like to thank Annie Attia, Gilles Buisson as well as M. Geller and M. Stol who kindly provided additional comments to earlier versions of this article which led to numerous textual improvements.

[2] Especially in the field of ancient medicine, it is still extremely difficult to establish proof for the direct influence of medical theories or therapeutic ideas between different cultures; in many cases intercultural

seem to some extent to be based on common cognitive mechanisms and characteristics of medical systems in pre-modern societies:

a) It can be expected that health specialists in Mesopotamia, Egypt, Greece and China had to cope with very much the same health problems of women, and that many conditions relating to menstruation, pregnancy and birth occurred in all these societies.[3]
b) Although medical knowledge and treatment in ancient societies was to varying degrees based on empirical observation of patients, pre-modern medical systems share similar limitations in their knowledge of internal anatomy, the physiology of the inner body and in their understanding of the exact causes of disease (keep in mind that even our present-day knowledge of many disease causes is still limited).
c) Concepts of the body and physiology in pre-modern societies are to a good extent based on metaphors, comparisons with natural phenomena and experiences from daily life, and many of these experiences are the same cross-culturally.

1. *Female health problems in Mesopotamian medical texts: blood and fluids, flow and retention*

Despite the well-known difficulties of retrospective diagnosis, a good part of the female health problems treated in the Mesopotamian gynaecological corpus can be determined on a general level. Not unlike the modern medical sub-discipline, the gynaecological therapies from 2nd and 1st millennium BCE Mesopotamia are mainly concerned with problems of fertility and fertility regulation, pregnancy, childbirth and postpartum issues, but also include urological and gastrointestinal complaints, as the following chart shows:

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similarities can as likely be a result of independent development, see Lloyd 1979, 232 with n. 21; Nutton 2005, 40ff.; for a comparison of Mesopotamian and Hippocratic diagnosis and therapy cf. Geller 2004; Stol 2004; for the possible exchange of knowledge and interaction in the medical sphere between Greece and the Near East in the Archaic and Classical periods see Thomas 2004, 181ff. E.g., the Greek textual sources of these periods such as the Hippocratic Corpus and Herodotus indicate that Greek interest in the medicine of foreign regions was restricted to Egypt, Libya, Scythia, the Black Sea and Asia Minor, while Persia and Babylonia barely feature at all. Regarding Herodotus' claim about Babylonian medicine, that the Babylonians did not use the service of physicians at all, but that the sick hoped for information about a cure from passers-by in the market place, this reference has often been seen as an indication that Herodotus had never been to Mesopotamia. For a differing interpretation see Attinger 2008, 2f.

[3] For a very instructive historical study of women's health and illnesses concentrating on Europe, see Shorter 1991. Many of the health problems described by Shorter, to which women in the past were prone to be affected by through their reproductive lives, still pose major problems today in developing countries (e.g. puerperal sepsis as a cause of maternal mortality) and were very likely of crucial importance in ancient societies as well.

- To help conception (also after menopause)	- Retention of the lochia (postpartum blood)
- Contraception/ Abortion	- To expel a dead foetus?
- To provoke the menstrual flow	- To relief pain after childbirth
- To stop bleeding	- Prolapse of the uterus
- Fertility/pregnancy tests	- Prolapse of the rectum (postpartum)
- To prevent miscarriage	- Puerperal sepsis
- Bleeding during pregnancy	- Vaginal/Uterine discharge
- Preterm / premature rupture of the membranes	- Fevers
- Dystocia (To ease/speed up a difficult delivery)	- Urological complaints
- Acute bleeding during/after delivery	- Uterine tumours?
- To expel the afterbirth/placenta	- Rectal and Gastrointestinal complaints (e.g. diarrhoea, "wind", constipation, colic)

Identified complaints and therapies in Mesopotamian gynaecological texts

Most of these topics are treated in gynaecological works of other ancient cultures as well, e.g. in the Hippocratic corpus or in Chinese texts.[4] Thus, Mesopotamian gynaecology seems to possess a (non-exclusive) focus, which is similar to the view of women's diseases as the conditions "below the girdle" found in Chinese treatises.[5] Especially in comparison with Greco-Roman writers, a lack of attention regarding the breasts and lactation seems noticeable in the Mesopotamian texts, but this impression could be related to the fragmentary nature of our sources and is likely to be corrected in the future. Another focus of Mesopotamian texts on women's illnesses, which forms the main topic of this article, is the treatment of vaginal/uterine haemorrhage and discharges of various kinds on the one hand (partly comparable to the symptoms described as "leaking in five colours" in Chinese texts) and the abnormal retention of fluids in the womb on the other hand.[6]

[4] See especially the Hippocratic treatises *Diseases of Women* I and II, *On Sterile Women* and *Nature of Woman* (Littré VIII, 10-463; Bourbon (2008)); *Superfoetation* (Lienau 1973). For ancient Chinese medicine for women see e.g. Leung (2006).

[5] E.g. in the 2nd cent. BCE biography of the mythological physician Bian Que, the expression "physician treating conditions below the girdle" (*daixia yi*) refers to a person engaged in the medical treatment of women. Similarly, the Eastern Han physician Zhang Ji pointed out that in women, only the conditions "below the girdle" (those related to the reproductive and digestive systems) require gender-specific treatment, see Wilms (2006), 82f. The term *daixia* was later increasingly used in the sense of "vaginal discharge".

[6] According to Wilms (2006, 82), in the Chinese prescription collections, the female body is seen as "characterized by uncontrollable and often life-endangering leaking and flooding of vital fluids from orifices above and below, …, and by its openness and vulnerability to such pathogenic substances such as wind, cold, and postpartum blood, in addition to chronic vacuity and weakness that result from the ravages of pregnancy, childbirth, and lactation." The expression "leaking in five colours" can be found in a work of the 7th cent. CE scholar Chang Yuanfang who described various vaginal discharges.

The most important body fluid in Assyro-Babylonian gynaecology is blood (Akk. *damu*). A considerable number of medical treatments are concerned with stopping gynaecological haemorrhage, referred to as "a woman's blood" which is "flowing" (*alāku*):

SpTU 4, No. 153: 1, 17 (LB, Uruk):
diš munus múd.meš-*šú* du.meš-*ma la ip-par-ra-su ana pa-ra-si*
"If a woman's blood flows and cannot be stopped: to stop (it)"[7]

BM 45736: 13' (unpubl., LB, from Babylon):
[KA.inim].ma[?] munus múd.me-*šú at-ru-ma nak-da-a*[*t*]
"[Incantation] for a woman whose (menstrual?) blood is excessive in quantity so that she is in critical condition"[8]

It is notoriously difficult to tell if "a woman's blood" refers to unusually heavy menstrual bleeding (the medical texts by convention deal only with pathological symptoms, not with normal body functions such as regular menstruation), but the expression "it cannot be stopped" (nu tar-*su*, *lā ipparrasū*) in some text examples points to acute, abnormal haemorrhage, which occurs e.g. in cases of uterine tumours or fibroids.[9] A few texts provide additional information that the haemorrhage referred to is occurring during pregnancy (and the intention of the therapies in these instances is to prevent a miscarriage) or in childbirth:

SpTU 4, No. 153: 8 (LB, Uruk):
šá munus.peš$_4$ *šá* 3 4 iti.meš-*šú u* múd *i-ta-nam-ma-ru*
"For a pregnant woman who is three (or) four months (pregnant) and keeps seeing blood"

BM 42313+ rev. 12 (unpubl., LB, Sippar?):
diš munus *šá* 3 iti múd-*šú* du-*ak ana šà* šà-*šà* [nu šub]
"If a woman who is three months (pregnant) bleeds, (remedy) so that she does [not abort] her foetus"

SpTU 4, No. 153: 7 (LB, Uruk):
munus *šá*$^{!}$(šú) ù.tu-*ma* múd.meš *la ip-par-ra-su* sum-*s*[*u*]
"You administer (it) to a woman who[?] gives birth and subsequently her blood does not stop"

Beside blood, the Akkadian word *mû* "water" is used for several different body fluids in the gynaecological corpus. In connection with pregnant women or in the context of delivery it

[7] See also BAM 235: 14 // BAM 236 rev. 6': múd munus tar-*si* ("Incantation) to stop a woman's blood"; BM 40152 iii 6) [diš] munus múd.meš-*šá* du-*ku-ma la* tar-*su*; ibid. iii 17) *ana* múd kir$_4$ *u* múd munus tar-*si* "to stop nosebleed and a woman's blood"; BM 42313+ obv. 25', 28': *ana* múd munus tar-*si* "to stop a woman's blood", K. 263+10934: 1: [diš munus múd-*šá* du-*k*]*u*[?] nu tar-*su a-na* tar-*si* "[If a woman's blood flow]s (and) does not stop, to stop it".
[8] See CAD N/1, 154 sub 3.
[9] See for the latest discussion Steinert 2012 with further literature.

seems to refer to the amniotic fluid, which is said to flow out - very likely describing a preterm or premature rupture of the foetal membranes:

BM 42313+ rev. 16:
diš munus peš$_4$ a.meš du-*ku* x[….]
"If a woman is pregnant (and the amniotic[?]) fluid flows …"

BM 51246 rev. 15' (unpubl., NB, Sippar or Babylon):
diš ki.min a.meš[?] du-*ku*[?] *šà*[?] šà-*šá a-n*[*a*] ⌈*la*[?]⌉[*na*-]*de*[?]-*e*
"If ditto (i.e. she is pregnant, and) the (amniotic) fluid flows, (remedy) so that she does not abort her foetus"

In other cases, "fluids flowing or dribbling from a woman's vagina" seem to refer to other pathological discharges:

BAM 237 iv 29 (NA, Aššur):
diš munus ú.ḫi.a *ze-ru-te šu-ku-ul* a.meš *ina* šà gal$_4$.la-*šá ma-gal* du-*ku*
"If a woman has been given herbs of hate-(magic) to eat (and because of this) 'fluids' flow abundantly from her vagina"[10]

Ibid., 44:
[diš munus a.m]eš *ina* šà gal$_4$.la-*šá* du-[*ku* ...]
"If [fluid]s flow from [a woman's] vagina"

BAM 241 ii 12' (NA, Aššur):
munus *ta-ti-ka-at ú-ri-ša* gig[……]
"(If) a woman suffers from vaginal discharges (lit. dribbling from her vagina)"[11]
In contrast to the purpose of stopping gynaecological haemorrhage and discharges, a few recipes also concern the contrasting purpose of provoking bleeding, when a woman's blood is "cut off" (*parāsu*):

SpTU 1, No. 59: 14':
diš munus múd-*šá* tar-*ma* múd-*šá* nu [*innamir*]
"If a woman's blood is cut off so that her blood is not [seen]"

[10] Cf. for this line the discussion of parallels in Abusch / Schwemer (2011), 36 note to l. 21'. In the past, vaginal discharges (leukorrhea) were typically seen as a disease in themselves, not as a symptom of different underlying diseases, see Shorter 1991, 256.

[11] Compare further Akkadian *mūṣu*, a term for a discharge from the genitals, occurring in men and women, see for references CAD M/2 246b sub c; differently CAD S, 293a sub b: "calculus (formed) in the vagina" (unlikely); AHw 679b; cf. Kinnier Wilson (1968), 246 identifying *mūṣu* with bilharzia or urinary schistomiasis; Geller / Cohen (1995, 1812f.) connect the discharge with urethritis. For the textual references see Geller 2005, 34 No. 1 (BAM 396): 23'-31'; ibid., 104 No. 10 (KAR 73): 2, 18; ibid., 64 No. 4 (BAM 112): 17'-20' // BAM 111: 16'f. // ibid., 54 No. 2a (AMT 58,6): 2'ff.; ibid., 70 No. 5 (BAM 114): 1-4 // No. 4 (BAM 112): 13'-16'. Note that Geller / Cohen (1995) normalise the word as *muṣû* "that which comes out" (from (*w*)*aṣû* "to come out"). It is clear that the *mūṣu*-discharge has to be differentiated from *šarku* "pus", and that *mūṣu* probably denotes more than one disease (in the modern sense), since in women the discharge is emitted from the vagina, not from the urethra. On the other hand, it could have been difficult for ancient healers to differentiate between discharge from the vagina and urethra, in some cases.

Moreover, a variant phrase "to make (a woman's) flow appear" (*sagûša ana kullumu*) is used:

BM 38624 obv. ii 28' (unpubl., NB, Babylon):
ana munus *sa-gu-šá ana kul-lu-mu*
"(Remedy) for a woman to make her (menstrual[?]) flow (*sagû*) appear"

The rare term *sagû* could be a word for menstruation (it is explained as *dam ardati* "the blood of a (young) woman" in SpTU 1, No. 39: 6, a commentary to Tablet 36 of the Diagnostic Handbook, concerned with pregnant women).[12] One possible interpretation for the therapies to provoke uterine bleeding, stemming from comparative sources, is that they were aimed at interrupting an undesirable early-term pregnancy, although it is true that amenorrhea (the absence of menstruation) can have many causes beside pregnancy and that ancient healers had no definite means to distinguish between different causes for a missed period.[13]
Another related issue of fluids blocked in a woman's body which is found in the Mesopotamian gynaecological corpus, is the retention of the lochia, the discharges (or postpartum blood) normally emitted by women for a few weeks after a delivery. One Neo-Assyrian text from Assur, BAM 240, describes this problem as "the blood of a woman in childbed (*dam harišti*), which has been blocked in her womb", using the verb *sekēru* "to dam up, to block":

BAM 240: 39'f. (NA, Aššur):
diš munus ù.tu-*ma* kúm *er-ri* tuk-*ši i-ár-ru* šà *ši* […] / múd *ḫa-riš-ti šá ina* šà-*šá it-te*-[*es*]-*ke-ru* munus bi *ina* ù.tu-*š*[*á* ...]
"If a woman has given birth and subsequently she has intestinal fever, vomits, […]: (it is) the blood of the woman in childbed, which has been blocked/detained in her womb; this woman […] during h[er] labour […]."[14]

The textual examples cited so far provide the necessary background for the discussion of the disease condition of "locked fluids". They have shown that Mesopotamian gynaecology treated contrasting processes in connection with body fluids: an overabundance or abnormal

[12] *Ardatu* more likely refers to women of childbearing age, i.e. including all girls/women after menarche and before menopause, than to girls at the point of menarche. Although the sign sequence of the entries in the Diagnostic Handbook Tablet 36: 100-102, which SpTU 1, No. 59: 6 comments on and explains, remains unclear and seems to have been re-interpreted by the commentator who did not understand it (see Genty 2010, 27), there can be no doubt about the existence of the word *sagû*, as the textual attestations cited in this article show.
[13] See e.g. Riddle 1992, esp. 26; Shorter 1991, 179f.; see for a cross-cultural anthropological study of fertility regulation and emmenagogues Newman 1985. According to Marten Stol (2012, 278f.), SpTU 1, No. 59 could also refer to a late menarche. Note moreover in connection with SpTU 1, No. 59: 14' cited above that the expression "a woman whose blood is cut off" usually refers to a post-menopausal woman.
[14] This symptoms description can be compared to endometritis, an inflammation of the lining of the uterus caused by a puerperal genital tract infection, which results in a febrile condition. Such bacterial infections are often triggered by retained parts of the afterbirth (secundines), which block the lochial flow (cf. Hacker / Gambone / Hobel 2010, 136f.; Shorter 1991, 103ff.).

leakage on the one hand and the abnormal retention of fluids on the other. It is proposed here that the "locked fluids" have to be understood in this context as well. The correct understanding of the Akkadian phrase describing this medical problem, *mê turru*, in most instances constructed in the stative with the woman as the subject, poses some difficulties. The literal translation "she is turned around/reversed regarding (her) fluids" could trigger (possibly) misleading associations. The first strategy to reach an understanding of the described problem was to look at occurrences of the verb *târu* "to return" in the D-stem together with *mû* "water" in other medical texts outside the gynaecological corpus. One (at first glance) similar usage occurs in the phrase "to bring back up food (*akalu*) and fluids" (the latter often replaced by *šikaru* "beer") in connection with intestinal disorders or symptoms, often found beside constipation, colic, tense intestines:

AMT 47/1+ and dupl. ii 1 (rectal disease), Geller 2005, 150:
šumma amīlu … akala u mê turrā
"If a man …, food and fluids are regurgitated" (the patient is also constipated, has intestinal colic, wind in his anus)

BAM 578 iv 44 (jaundice):
šumma amīlu … qerbūšu našû akala u šikara utarra
"If a man …, his innards are tense(?)[15] (and) he regurgitates food and beer"
The relation between these symptoms seems to be that the intestines are blocked and excretion is hindered, thus consumed food is going back in the wrong (upward) direction.

Although not attested in the medical texts so far, a second semantic nuance of the verb *târu* in the D-stem provides an even more fitting translation for the phrase *mê turru* in the gynaecological texts. This meaning of *târu* D in the stative is found in connection with gates and doors, and *turru* then assumes the meaning "to lock, to close"[16]:

CT 52, 50: 9 = AbB 7, No. 50 (Old Babylonian letter), see also No. 49: 1':
abullum adi Šamaš lā išqâm lā ippette ištu Šamaš izzaz lū turrat
"The city gate must not be opened until the sun is up, as soon as the sun reaches the horizon (in the evening) it should be closed (lit. turned back (from an "open" position))."

[15] Cf. the semantic nuance "to heave", said of the stomach, expressed by the combination of the verbs *elû* "to rise" and *našû* "to lift" with *parû* and *arû* "to vomit", see CAD A/2, 316; CAD P, 208; but in this case the former verbs are not used in the stative (cf. CAD N/2, 85f. sub 3' for *našû* in the stative referring to body parts, probably indicating a different meaning, e.g. "to be tense/swollen").
[16] See CAD T, 273b sub 11d; CAD S, 143 sub 11. See further the *Laws of Hammurapi* § 32 (Roth 1995, 87) with the nuance "to be taken captive": *šumma lu rēdûm ulu bā'irum ša ina ḫarrān šarrim turru tamkārum ipṭuraššuma ālšu uštakšidaššu* "If there is either a soldier or a fisherman who is taken captive on a royal campaign, a merchant redeems him and helps him to get back to his city …".

K. 2315 + K. 3125+ 83-1-18,469 (Oppenheim 1959, 283: 38f.; var. OECT 6, pl. 12: 8 (Prayer to the gods of the night)):
sunnuqā (var. *parkā*) *dalātu turrā abullātu / nadû ḫargullū ša ilī rabûtu*
"The doors are locked, the city gates shut (lit. turned back), the locks (of the gates) of the great gods are in place."

Since a few symptoms found in connection with *mê turru* in the gynaecological texts bear similarities to the two texts cited above, which mention "regurgitating food and drink", to answer the question if the same associations underlie the "locked fluids" in the gynaecological corpus, a close look at the texts in question is essential. In two attestations in BM 38624, a Neo-Babylonian gynaecological compendium from Babylon, the patient suffers from pain in her lower abdomen or the area below the navel, and (possibly) another body part is tense or sensitive to touch (*kupput* or *kubbut*):

BM 38624 i 24'-25' (unpubl., NB, Babylon):
[diš munus$^{?}$ *ina em*]-*ši-šú* ⌜*di*$^{?}$⌝-*ik-šú il-ta-nap-p*[*at*$^{?}$-*su-ma*] / [x x]x gu$_7$.meš-*šú* munus bi a.meš *tur-rat t*[*u*$^{?}$- x x]
"[If a woman] keeps being afflicted by a piercing pain [in her lower] abdomen [and her …] keep hurting her: this woman is locked (lit. turned back) regarding (her) fluids."

BM 38624 i 30'-31':
[diš munus$^{?}$ a.meš *tur*]-*rat u šap-la-a-nu a-b*[*u-u*]*n-na-ti-šú* / […]-*ma ku-pu-ut*
"[If a woman is loc]ked [(regarding her) fluids$^{?}$], and (the area) below her navel / [….] and it is compact/tense$^{?}$ …"

According to these examples, the writer of BM 38624 seems to attribute the symptoms to a blockage or retention of fluids in the abdomen, which have accumulated and cause pain and a compacted state. The woman is treated with a potion of powdered drugs in beer and a bandage placed on her lower abdomen. The third attestation of the phrase "locked fluids" in the same tablet provides additional information: the text states that the described therapy (a mixture of herbal drugs and fat) is a "mixture/suppository" (*maššītu*) which can be used "for a woman who is locked regarding her fluids" or for a woman who missed her period, with the word *sagû* restored in the lacuna:

BM 38624 ii 19'ff.:
maš-ši-tú šá munus […] / ⌜*lu-u*⌝ munus *šá me-e-šá tur-ra-tú* [*lu-u* munus *šá sa-gu-šá*$^{?}$] / *la im-ma-ru ana kul-lu-mu* dù-*uš*[…]
"You prepare (this) *mixture* for a woman […, or] for a woman who is locked (lit. turned back) regarding her fluids, [or for a woman who] does not get (lit. see) [her menstrual period$^{?}$], to make it appear."[17]

[17] The expression "she is locked regarding (her) fluids" is also attested in K.8678+ rev. 3', 9' (NB, from Nineveh), but the fragmentary passages do not provide additional clues: Rev. 3') diš munus a.meš gur-*át* ⌜sig$_4$$^{?}$⌝

Interestingly, two texts explicitly deal with the condition of "locked fluids" in the context of postpartum complaints. One Middle Assyrian tablet edited by W.G. Lambert speaks of "her fluids and her blood" that are "turned back" (note again that the patient is constipated and has colic):

Lambert 1969, 29: 1ff. (MA):
(diš) munus ù.tu-*ma em-rat šit*-⌈x-x⌋ [x (x)] / šà.meš-*ša es-lu* a.meš-*ša u* múd.m[eš-*ša* (x x)] / gur.meš-*ru ana šup-šu-ri-ša …*
"(If) a woman gives birth and subsequently she has colic, …, her intestines are blocked: her fluids and [her] blood are *locked* […], to bring about her release … ."[18]
Moreover, BAM 240: 67', a Neo-Assyrian tablet from Aššur, contains the following entry:

diš munus min-*ma qer-bi-s*[*a* PA.PA-*si*[?](*uzaqqassi*) *ḫa-an*]-⌈*ṣa*⌋-*tu-šá*[19] *ik-te-ner-ra-a* munus bi a *tur-re-ti* gar
"If a woman ditto (i.e. gives birth) and subsequently her womb [gives her a stinging pain (and) her hip]s[?] become shrunken more and more, concerning that woman, *locked* fluids are present."

The diagnosis is phrased differently in BAM 240 in contrast with the other textual examples cited above, and I tentatively analyse it as *sinništu šuātu mê turrēti šaknū* "regarding that woman, locked fluids are present".[20] In the Middle Assyrian tablet, the patient is treated with fumigations from below, suppositories, salves, lotions and bandages, while in BAM 240 a tampon containing drugs is inserted vaginally.

Both of the texts just cited could lead to the suggestion that the "locked fluids" might refer to the retained lochia. If this is true, the Mesopotamian healers employed a flexible terminology

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[x x x] "If a woman is locked regarding (her) fluids …"; ibid. rev. 9') diš ki.min *ḫáp-pát-ma* "If ditto (a woman is locked regarding (her) fluids) and stinks[?]".

[18] The symptoms described here might be compared with the disease pattern of peritonitis, an inflammation of the peritoneum, the membrane lining the abdominal cavity. Peritonitis can develop within a few days after delivery due to a spreading postpartum bacterial infection at the site of the uterus and articulates itself in a hard, swollen belly, pain in the lower part of the abdomen and stopping of the lochia. One of the effects of peritonitis is the inability to digest due to the stopped muscular activity of the colon. As a result of the body fighting the infection, large pockets of pus (abscesses) can accumulate in the cavity of the abdomen. See Shorter 1991, 105, 109ff.; Collin 2004, 300. According to Shorter (1991, 103f.), in the past, the lifetime risk for women to get puerperal infection was high (estimated 25% risk), and few women passed through their childbearing without ever getting a puerperal infection. Although there is no statistic information for puerperal sepsis and connected maternal mortality in ancient Mesopotamia and no direct evidence for the awareness of healers and midwives regarding the observance of antiseptic procedures during labour to reduce the risk of maternal infection, it is often (and in the author's opinion, rightly so) presumed from the medical texts themselves that puerperal infections posed a considerable threat to women's health, especially in cases of difficult, prolonged labour.

[19] The reconstruction partly follows the preceding entry of BAM 240: 65': diš munus min-*ma* ⌈*qer-bi-sà*⌋ PA.PA-*si qer-bé-nu* lugud tuku "If a woman ditto (gives birth) and subsequently her womb gives her a stinging pain: she has pus inside." Possibly it is preferable to restore [*mi-na*]-⌈*a*⌋-*tu-šá* "her features" instead of *ḫanṣātuša*, the sign traces leave both possibilities open. Note that pale and shrunken features (beside fever) can be among the symptoms of puerperal infection, see Shorter 1991, 103.

[20] The form *tur-re-ti* could be a similar variant formation of *tūrtu* "turning", as in *ṣertu/ṣerretu* "breast". Another possible and perhaps preferable analysis of the form is to see it as the plural of the verbal adjective *turru* with change from *–ūti* to *-ēti* due to vowel attraction.

for the discharges after childbirth, since there is also the phrase *dam harišti* mentioned earlier. We shall return to this point once more below.

2. *Leakage and retention of fluids*: *the body imagery of incantations and rituals*

To reach a deeper understanding of the expression "locked fluids", it is worthwhile to approach the problem from a different angle and to look at the imagery for leakage and retention of body fluids in healing incantations and rituals. The metaphors and images found there provide implications regarding underlying concepts of the physiology of the inner body and womb, which help to clarify the concept of "locked fluids" as a contrasting condition to haemorrhage/abnormal flux of body liquids. The disease concept "locked fluids" is interconnected with notions of the womb as a container (for liquids, the foetus etc.) and the image of channels inside the body, which are metaphorically compared with rivers and canals. The Mesopotamians perceived a route between mouth and anus, through which fluids/food flowed as in a river or canal. As with rivers and canals, the normal flow in this body channel is in one direction (downstream), and the flow has to be regulated, controlled (is desirable under certain circumstances, while not desired in other situations). This imagery of physiology seems to have been extended to the abnormal of flow of fluids, namely blood, as is suggested by the imagery employed in a number of incantations and healing rituals.

Although there are no preserved medical incantations to treat the problem of "locked fluids", incantations against gynaecological haemorrhage contain the imagery of vessels and the rivers/canals from the contrasting angle of overflow/leakage. For instance, the incantation "Her blood is a carnelian river" (*nār sāmti damša*) in BAM 235: 10-16 // BAM 236 rev. 1'-9' from Aššur), describes the woman's haemorrhage as "a carnelian river, a carnelian canal (*atappu*)", the inside of her body as a meadow (*tamirtu*) which has to be dammed up (*sekēru*). In the same way, the incantation incipit partially preserved in the Neo-Babylonian tablet K. 263+10934: 42 (a collection of recipes against gynaecological haemorrhage from Nineveh) speaks of the woman's canals, which need to be blocked; and in the following ritual the womb is symbolised by a waterskin, which is sealed and buried (Steinert 2012). A third incantation used against haemorrhage, *mimmû ilū ibnû amēlūtu* "All of the gods (that) created mankind" (BAM 237 ii 1'-6' // BAM 386 iv 1'-6' // SpTU 4, No. 129 i[!] 11-27' // K. 3304+8785+9217 i 1'-7')[21], compares the leaking womb with a fermenting vat (*namzītu*) whose stopper is defect, and with a waterskin whose knot and drawstring are failing:

[21] For an edition of the incantation see von Weiher SpTU 4, 28ff.; Collins 1999, 177-180; see also Schuster-Brandis 2008, 109f. Kette 62; ibid., 322ff. Text 11.

SpTU 4, No. 129 i 20'-22':
gi[m] ⌜*ta-mir-ti*⌝ *ša la kul-lu-u ka-lu-ú-šá*
⌜gim⌝ ^{dug}níg.dúr.bùr *šá* ⌜*pu*⌝*-ru-*⌜*sa-šá*⌝ *la pár-súm*[22]
[g]im *na-a-a-du šá la* ⌜*dun*⌝*-nu-nu* kešda *la tak-lu* sa
"([The blood] … from the vagina of the young woman … drips and flows constantly) li[ke] ⌜a waterlogged⌝ meadow whose dike is not holding back (the water), ⌜like⌝ a fermenting vessel whose stopper *does not block* (the outflow), like a waterskin whose knot is not strong, whose drawstring is untrustworthy."

Interestingly, the same images can be found in connection with the bowels, digestion and in incantations used to treat gastro-intestinal diseases[23], for instance in an incantation against diarrhoea (šà.si.sá):

Th. 1905-4-9,90 (=BM 98584)+95 (=BM 98589) +K. 5416a (= AMT 45,5) iii 4-28[24]:

4) én *bat-qat* íd *šur-*⌜*da-at a-tap-pu*⌝
5) *ina* illu(*mīli*) *gap-ši* ⌜*ib-ba-tiq bit-qu*⌝
6) *ša* dug.*nam-zi-ti ma-qit pu-ru-us-su*
7) *šá* nenni a ⌜nenni *ma-qit ir-ra-šú*⌝*-ma ki-lu ul i-ši*
8) *i-*⌜*mur-šu*⌝*-ma* abgal dingir.meš ^{d}ama[r.utu]
9) *a-na* ^{d}*é-a* ad-*šu a-mat šu-a-tú i-qab-*[*bi*]
10) *a-bi bat-qat* íd *šur-da-at a-tap-p*[*u*]
11) *ina* illu *gap-ši ib-ba-tiq bit-qu*
12) *ša* dug.*nam-zi-ti ma-qit pu-ru-us-su*
13) *šá* nenni a nenni *ma-qit ir-ra-šú-ma ki-lu ul i-ši*
14) ⌜*al*⌝*-kam-ma a-lik ma-ri* ^{d}amar.utu
15) [ki]-*ka* zi-*ú* 7 *zik-ri* dingir.meš kalag.meš[25]
16) ^{d}alad *šá* é[26] *za-bi-lu ku-du-ru*

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[22] Cf. von Weiher's alternative interpretation of *pár-ṣu* "(dessen Spund) nicht zerbrochen ist" (SpTU 4, 38), from *parāṣu* "to make a breach"; CAD P, 529b reading BAR-*ṣu*, does not offer a solution or translation. However, a connection with *parāsu* "to block; to stop" seems more likely given the context and the derivation of *purussû* "stopper" from the same verb.

[23] The references were discussed by Stol 2006, 114ff. See e.g. the old Babylonian incantation CT 4, 4 No. 8a: 1ff. (against "constipation"), where the sick belly (šà.gig.ga / *libbu marṣu*) is "covered like a basket", "like water in a river, it does not know where to go, like water in a well, it has no flow. It is covered over like a brewing vat (*kakkulu*) … ." (cited from Foster 1996, 124 II.9; see Stol 2006, 114 with n. 103). For the bowels as a fermenting vessel (*namzītu*) see also the incantation BAM 574 iii 54; Collins 1999, 128ff.; for the imagery of watercourses in connection with the intestines see moreover the incantation BAM 508 ii 4ff.; STT 252: 17ff. and dupl.; Collins 1999, 134ff.

[24] This tablet (including all duplicates) will be edited by M.J. Geller in the next volume of BAM. For a photo of the tablet see the appendix in L.W. King (1914), Catalogue of the Cuneiform Tablets in the Kouyunjik Collection of the British Museum, Supplement, 59 No. 500; for a translation of this incantation see Geller 2010, 65. A discussion of this text can also be found in Stol 2006, 115. For a similar imagery see also SpTU 2, No. 25: 1ff., an incantation against witchcraft ($uš_{11}$.búr.ru.da), where the canal and ditch seem to be real, not metaphorical channels: én *man-nu ib-tuq* íd *ú-šar-da a-ta*[*p*]*-p*[*i*] / *saḫ-ḫa-a-ti šá* íd-*ia ú-šá-bi-la* a.meš / *bur-*x[…]*-a-nu* abzu *bi-nu-ut* a.ab.b[a] / *ib-tuq* íd *ú-šar-da a-tap-p*[*i*] / *saḫ-ḫa-a-ti šá* íd-*ia ú-šá-bi-la* a.[m]eš "Incantation. 'Who cut through the canal, made the irrigation ditch flow over? The water carried away the meadows of my canal. The … of the *apsû*, the creature of the sea, has cut through my canal. The water carried away the meadows of my canal." Cf. von Weiher (SpTU 2, 130f. with note to l. 2) who interprets *ú-šá-bi-la* as Š stem of *abālu* "to dry, to cause to dry up", with *saḫḫātu* "meadows" as subject.

[25] See CAD Z, 115a reading un.meš instead of kalag.meš; cf. CAD Z, s.v. *zikru* B.

17) ^{d}nin.gìrima *mu-ter-rat pu-ru-us-su*
18) ^{d}*gu-la ra-pi-iq* bappir numun babbar.ḫi.sar *šá* dib *ina* izi *li-šab-ši-il*[27]
19) *i-na pi-i* íd *lim-qut šu-tuk-ki*
20) *ina* ka *a-tap-pi lid-du-u áš-šu-ul-tu*$_4$
21) *ina* ka *bit-qa lit-bu-ku ṣa-pí-tu*$_4$
22) ^{d}nin.gìrima *šá nam-zi-ti li-tir pu-ru-su*
23) [^{d}*g*]*u-la ku-pa-tin-nu šá ra-pi-qi li-kap-pit-ma*
24) [nenni a n]enni *li-šá-*⌜*kil*⌝*-ma ir-ra-š*[*ú l*]*i-in-né-gir-ma*
25) [……..]x *liš-kun*
Two lines lost
28) [é]n ⌜^{d}nin.gìrima en én⌝ tu$_6$ én

4) Incantation. "The canal is cut through, the irrigation ditch flows over,
5) a breech has been made by the violent flood.
6) The stopper of the fermenting vessel has fallen (out),
7) NN, son of NN, has diarrhoea (lit. 'his gut has fallen'), it has no halt!
8) The wise one of the gods, Mard[uk], saw him and
9) he said to Ea, his father:
10) 'My father! The canal is cut through, the irrigation ditch flows over,
11) a breech has been made by the violent flood!
12) The stopper of the fermenting vessel has fallen (out),
13) NN, son of NN, has diarrhoea (lit. 'his gut has fallen'), and it has no halt!'
14) 'Come (now), my son Marduk, and go!
15) [With] you shall rise the seven *famous ones*[?] (lit. 'names') of the powerful gods,
16) (also) the *šēdu*-spirit of the house (who) carries the (earth) basket[28],
17) (and) Ningirima who puts the stopper back into place.
18) Gula, let her heat over a fire a *paste* of 'beer bread' (and) seeds of *papparḫû*-plant (purslane[?]), which *are sticky*[?] (lit. 'which grasp, seize')!
19) Let a reed bundle fall into the mouth of the river,
20) let them put *aššultu*-grass at the mouth of the canal!
21) Let them heap up *ṣapītu*-grass[29] on the opening of the breech![30]
22) Let Ningirima put the stopper of the fermenting vessel back in place!
23) Let Gula roll pill(s) of the *paste*[31] and

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[26] Alad may stand for Išum, cf. Parpola 1983, 295 citing II R 50: 11f.; cf. also ^{d}*Ra-bi-ṣu-bīti* "guardian of the house" in the *tākultu* ritual (IIIR 66 iii 30).
[27] *Ra-pi-iq* is to be interpreted as a nominal form of *rabāku* "to decoct". See CAD B, 96b sub h (obscure); CAD P, 109b; CAD R, 20f. s.v. *rabīku* with discussion. The meaning of the logogram dib is unclear in this context. It has to refer to a quality of state of the *papparḫû*-seeds. The translation "sticky" is a guess stemming from the equation of dib with *ṣabātu* "to seize", yet the nuance "to stick, to be sticky" is not attested for *ṣabātu* (or the verbal adjective *ṣabtu*). Following a suggestion by G. Buisson (personal communication), dib could denote germinated seeds. The only expression known to me in this connection is *qarnānû* "sprouted (lit. 'horned')", said of *uḫūlu*, an alkali plant. Geller (2010, 65 n. 154) suggests to read numun nunuz.sar i[?!] (*šá*) udu "seed of the *papparḫû*-plant and sheep's fat" instead.
[28] Baskets were used to carry earth, e.g. to erect up dikes, which is alluded to here (filling the breech with earth). Cf. also the passage in the incantation *urbatu urbatu* "The worm, the worm" used when "fluids" collected in a patient's skull (CT 23, 37 iii 66f.): *mīlu sāmu itbīma nāra sāmta imla* / *errēšu sāmu marra sāma tupšikka sāma lišīma mê sāmūti liskir* "A red flood arose, it filled the red river. Let the red farmer take up the red spade and the red hod, let him dam up the red water!". See for this incantation Finkel 1998, 81 n. 10; Collins 1999, 104ff.; Worthington 2005, 31.
[29] Possibly a weed, cf. CAD Ṣ, 97; AHw 1082a.
[30] For ll. 19-21 see CAD Š/3, 412b.

24) Let her make [NN, son of] NN, eat it, so that his gut may be *coiled.*[32]
25) Let her place […….]!
…
27) (It is the) incantation of Ningirima, the master of incantation(s).” Incantation formula.

While the image of the fermenting vessel (*namzītu*) is used for the bleeding womb and a patient with diarrhoea, the image of the waterskin was applied both to the womb, the belly (*karšu*) and the bleeding nose.[33] Both vessels perfectly represent the anatomy of the female genital organs, i.e. the round shape of the womb (equated with the body of the container), its neck and its narrow opening (equated with cervix and vagina).[34] Another example for the canal-metaphor of the body channels is the use of the word *rāṭu* “channel, runnel” for a part of the womb (the birth canal?)[35], and for the “gullet”:

Tukulti-Ninurta Epic (Lambert 1957/58, 50 Rm. 142 Col. Y 9; cf. Foster 2005, 301 i (= A obv.) 17’):
ina purussî bēl mātāti ina rāṭ šassūr ilī šipikšu ītešra
“By the decree of the lord of the lands his (Tukulti-Ninurta’s) *formation* went smoothly in the canal of the divine womb.”[36]

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[31] See CAD R, 20 s.v. *rabīku*; CAD K, 549b sub b (*kupatinnu*). Although *rabīku* is translated in CAD R as “decoction” (see also AHw 935a “ein Absud”), it has to denote a solid substance (see also l. 18) rather than a liquid, i.e. a paste or mash, which is here rolled into pills to be swallowed by the patient, parallel to the instructions in the ritual following the incantation. See the discussions in Goltz 1974, 47f. translating *rabāku* as “rühren” and *rabīku* as “Brei”; also Köcher 1995, 211 n. 11’ “einen (Mehl)brei bereiten”; similarly Attia/Buisson 2003, 18 etc. “délayer jusqu’à obtention d’une pâte molle”.

[32] The meaning of the verb *egēru* “to twist; to coil around” in this context can be explained in contrast to the Sumerian expression for diarrhoea, šà.si.sá, lit. “straight gut”, which is equated with Akk. *ešēru* “to straighten up; to move the bowels”. It seems that diarrhoea was conceptualised in terms of the bowels assuming a straight instead of the natural coiled position in the body, letting fluids flow “downstream” in an uncontrolled way.

[33] See Reynolds 2002, 120: 12. Note that the same incantations and rituals were used for different types of bleeding, specifically gynaecological haemorrhage and nosebleed, see e.g. BAM 237 ii 1’-6’ // BAM 386 iv 1’-6’ // SpTU 4, No. 129 i! 11-27’ // K. 3304+8785+9217 i 1’-7’; BM 40152 iii 17-25.

[34] For the fermenting vessel see Maul 1994, 104; Röllig 1970, 26. It was a large bulgy vessel placed on a stand, with a narrow opening at the top, which was closed during the fermenting process. It had holes at the bottom through which the fermented beer trickled down into a collection container. For a further reference of the comparison between womb and fermenting vessel see Geller 1989, 198: 36, a Sumerian incantation against a witch, which includes the following curse against the fiend: arḫuš kaš ^{dug}níg-˹dúr˺-bùr-gin$_7$ ˹ḫé˺-bi-iz-bi-iz-e “May (her) womb drip beer like a fermenting vat!” (i.e. may she have a constant discharge from her vagina). Cf. BAM 237 iv 29 cited above, where vaginal discharge is seen as a result of witchcraft performed against the woman.

[35] Note the equation of *rāṭu* with *libbu* “heart; entrails; womb” in *malku* = *šarru* V 7 (= LTBA II no. 1 xiii 122 and dupl.), see Hrůša 2010, 395 (among other synonyms for *libbu*).

[36] Foster translates: “he was cast sublimely from the womb of the gods”. The word *rāṭu* is used for irrigation and drainage runnels as well as for the tubes through which molten metals flow during casting. This process of casting seems to have been associated with the process of insemination and gestation. The connection between the womb, vessels/contained fluids, gestation and the casting of metals can moreover be seen in the meanings of the word *agarinnu*, a Sumerian loanword (from Sum. aĝarin): 1. beer mash (sometimes vessel for beer mash); 2. mother; womb (it is a synonym for *šassūru* “womb” in lexical lists); 3. crucible (see CAD A/1, 145f.; CAD S, 254b sub *sikkatu* C; cf. the meanings of Sum. aĝarin given in *The Sumerian Dictionary of the University of Pennsylvania Museum* (PSD) Vol. 1, Part III, 60f., *Electronic Philadelphia Sumerian Dictionary* (ePSD), http://psd.museum.upenn.edu/epsd/nepsd-frame.html, sub aĝarin); Cavigneaux / Al-Rawi 1995, 195).

Enūma eliš III 134f. (Talon 2005, 50):
ašnan īkulū iptiqū kur[*unnu*] / *širīsa matqu usanninū rāṭīšu*[*n*]
"They (the gods) ate grain, they drank fine beer, they poured sweet beer down their throats."

These attestations show that not only the Mesopotamian healers interpreted and expressed a variety of body processes and disease symptoms in terms of metaphors involving vessels and canals, but that the use of these metaphors and related body concepts stemming from experiences of daily life were a general cultural phenomenon.

From the image of an overflowing canal or a leaking vessel for the abnormal flow of body fluids it is possible to infer how contrasting physiological processes and disease symptoms as "locked fluids" and vomiting might have been conceptualised by the Mesopotamians. The "natural" route for the motion of substances in the body is "downstream": food and drink enter the body at the top end and come out at the bottom ends of the channel (urethra, anus). In extension, the "natural" route for the purging of gynaecological fluids was perceived in the same way. When a blockage of the inner channels occurs, it leads either to an accumulation of fluids within the body (e.g. in the use of *turru* "to lock, turn back" in connection with fluids accumulating in the womb) or to a reversal of flow (e.g. in the use of *turru* for "to vomit", when food and fluids go in the wrong direction within the body (upstream) to find a way out instead of being expelled in the "natural" way).

3. *Intercultural parallels for the "locked fluids" and related body concepts*

We will now turn to intercultural parallels for the disease label "locked fluids", which show similarities, but at the same time point to differences in the conceptualisation of disease. It has to be noted that although there are no identical expressions for the Akkadian expression "locked fluids", one finds corresponding basic notions and to some extent the use of a similar imagery.

To begin with, similar metaphors for the womb and channels in the body occur for instance in Egyptian papyri and the Hippocratic corpus. The comparison of the womb with a container is very widespread. Notably, in the Greco-Roman tradition the womb is likened to and depicted as a cupping vessel, e.g. on amulets worn by women.[37] Second, both in the Egyptian medical papyri and in the Hippocratic corpus, one can find the conception of an internal route between the orifices and the vagina, which makes it possible for menstrual blood to be diverted and

[37] See Hanson 1995, 286 with references from the Hippocratic corpus; Michel 2004, 127f., 153ff., 178ff. with further literature. For a large collection of amulets with the uterus motif, often depicted with a lock at the bottom, see also The *Campbell Bonner Magical Gems Database*: http://classics.mfab.hu/talismans/object/search?description1=uterus. Jewish scholars in the Talmud and Midrash associated the womb with a container made of skin and a filled money-bag (the money stands for the foetus), see Preuss 1993, 381f.

exit through other body openings.[38] To visualise and address the symptoms of gynaecological or obstetrical haemorrhage, incantations in Egyptian medical papyri employ the imagery of a flood, which has to be dammed up, similar to Mesopotamian metaphors of overflowing rivers and breeches in canals.[39]

Even more striking parallels can be found with regard to the "locked fluids" of the Mesopotamian gynaecological texts. At this point, we have to take up again the question of the nature of these fluids. In the first section, it was asked if the "locked fluids" could refer to the retained lochia, at least in the context of the recipes that refer to a postpartum problem. We surmised that the Mesopotamian healers used a flexible terminology for the discharges after delivery, because they refer to them as *dam ḫarišti* "blood of a woman in childbirth", *damu* "blood" and *mû* "fluids".[40] Such flexibility in terminology can be compared with a similar tendency noted in ancient Greek medical texts, which do not distinguish clearly between blood and amniotic fluid on the one hand, and menstrual blood and lochia on the other (King 1998: 90). Thus, Hippocratic writers explained that stored menstrual blood from the first weeks of pregnancy not used by the foetus for its nourishment comes out as the lochia after childbirth (Lonie 1981: 170, 192). Ann Ellis Hanson (1994: 181f.) describes an inconsistency in the Hippocratic gynaecology regarding the terminology for the fluids resulting from the rupture of the foetal membranes, "perhaps because it was thought best if these merged with the lochial flows of the postpartum".[41] The interchangeability between of the terms "blood" and "fluids" for the lochia in the Mesopotamian texts can maybe be explained with the observable changes in the colour of these discharges over time.[42]

Moreover, Hippocratic gynaecological treatises contain two different dominant explanations for a variety of women's diseases: that they can either be caused by retained body fluids or by fluids going the wrong way within the body. Thus, the Hippocratics believed that women have spongy flesh and are wetter than men and that menstruation was a natural mechanism in

[38] King 1998, 28, 79f. and *passim*; Frandsen 2007, 84ff. for parallel concepts in Egyptian texts. The notion of a channel connecting the mouth/nose and the vagina can also be grasped from Egyptian and Hippocratic fertility tests, where female fertility is proved by inserting a smelling substance into the vagina and testing if the smell reaches her head or mouth, see e.g. Lloyd (1983), 65 n. 21, 83f. with textual references. For the diversion of blood from the uterus to other parts of the body see also below. Widespread is also the idea that menstrual blood stored in the uterus during pregnancy rises to the breasts after delivery and is converted into milk. It can be found not only in Greece, but also in China (Yates 2006, 41).

[39] See e.g. Papyrus London 25-30 and 33 (ca. 1350 BCE; see Leitz 1999, 67ff; Westendorf 1999, 421ff.).

[40] Note here especially the Middle Assyrian text in Lambert 1969, 29: 2 cited above.

[41] See p. 181 note 70 with references. These liquids were called either *hygron*, *lochia*, *hydatodea* or *katharsis*.

[42] The lochia, the discharges from the uterus after parturition, consist of dedicua (tissue, debris, blood, mucous) and have three stages: 1) the *lochia rubra*, during the first four days after parturition, are stained with blood, 2) the *lochia serosa*, from five to fourteen days after childbirth, which are brownish pink, and 3) the *lochia alba*, lasting up to six weeks after parturition, which are pale and creamy. See Newell 2007, 47.

women to evacuate these overabundant fluids. If a woman did not purge herself of the excess blood every month, she would be prone to various illnesses (see e.g. *Diseases of Women* I, Hanson 1975), including pain, swelling of the limbs, fever, blood turning into fetid pus in the womb, and the formation of a kind of uterine tumour.[43]

The Hippocratic writers also held that retained lochia accumulating or actually flowing upward in the body cause several pathological symptoms. Thus, in *Diseases of Women* I ch. 35, the writer discusses the retention of "the lochia and the things emitted after delivery", and the symptoms that he describes, especially pain in the flanks, groin, thighs and lower back, a swollen belly, chills, high fever, occur in his opinion either if a woman does not get rid of the lochia, or if the menses were retained (Hanson 1975, 581). According to *Diseases of Women* I ch. 36, the fluids, which should come out with the child during delivery, can either turn to the head or the belly, causing problems in childbirth. If this flux turns into "lochial purgation" (*lochia*), the situation improves (Littré VIII, 84f.). The text continues to describe the symptoms of suppressed lochia, which are partially similar to those in the Mesopotamian texts: the woman gets fever, chills, and the belly swells up. The whole body is painful to touch, especially the belly; from time to time there can be pain in the heart; pain in the loins; sleeplessness, loss of appetite, and the sensation of stinging pain (Littré VIII, 86f.).[44] If, on the fifth or seventh day, the patient has sudden evacuations of the bowels, the symptoms improve (i.e. evacuation through other orifices is interpreted as lochia taking a different route).[45] In Chapter 41, the writer argues that the suppressed lochia could move upward to the head, chest or lungs, and that the woman would die if she was not treated or if the flux was not released through the mouth or nostrils (Littré VIII 98f.). In comparison with the "locked fluids" in the Mesopotamian texts, which occur both postpartum and in non-pregnant women, is interesting that *Diseases of Women* I also contains three chapters on "dropsy of the womb" (Chapters 59-61), which was differentiated from suppressed menses and lochia, but is characterised by

[43] For a discussion concerning notions of suppressed and diverted menses from the Hippocratic corpus to the 19th century see e.g. King 1998, esp. 14f., 29f., 36f., 69 (for the different routes in the body, which suppressed menstrual blood can take), 78, 146, 196f, 216f. Compare also the idea in Greco-Roman gynaecology of the "wandering womb" as a cause of female ailments. Two examples from Egyptian papyri dated to the 1st half of the 2nd millennium BCE are known to me, which involve related concepts (Westendorf 1999, 412, 687). Papyrus Ebers 833 contains the case of a woman whose menstrual blood has accumulated over many years in her uterus during which she did not get her period. The disease symptoms include vomiting and her belly burning like fire. The second example is Papyrus Kahun 1, in which the patient suffers on her eyes (has become blind) and her neck, which is diagnosed as caused by an "overflow" of fluids from the uterus.

[44] See also *Diseases of Women* I, Chapter 40 (the case of Phrontis), Littré VIII 96ff.; *Nature of Woman* Chapter IX.1 (Bourbon 2008, 12f.).

[45] If these evacuations do not occur or the lochia do not set in in due time, the illness becomes incurable and the patient will die within twenty-one days (Littré VIII ibid.).

similar symptoms. In this illness, the womb fills with fluids,[46] the belly swells up as if the woman was pregnant, pain spreads in the lower belly, loins, thigh, and groin; the menses become little (Littré VIII 116ff. ch. 59; cf. also ch. 61, VIII 122ff.). Interestingly, this illness is said to occur (among other causes) after a miscarriage or if the menses are suppressed, which implies a connection between retention of blood and an accumulation of liquids in the uterus.

The assumption that Mesopotamian healers did not clearly differentiate between the retained lochia and other retained uterine discharges, which is suggested by the label "locked fluids", can be compared further with disease theories in other medical traditions as far as ancient China. In the prescription section of his medical encyclopedia *Beiji qianjin yaofang*, the 7th century CE scholar Sun Simiao describes the pathology of the "noxious dew" (*e lu*) referring to postpartum blood left over in the uterus after childbirth, which rots for a long time and is responsible for various disease symptoms including blocked menstruation and vaginal discharge (Wilms 2006: 89f., 98f.), which indicates that different fluids as menstrual blood and the lochia can be seen as interrelated.

Extending the perspective some centuries further, medieval Jewish treatises on diseases of women and the genital organs are influenced by a variety of sources, especially Greco-Roman writers, mediated through the transmission of these works in Byzantine, Arabic and medieval writings (Barkai 1998). These treatises contain references to pathological conditions of the womb characterised by swelling of the belly ("with malign water"), which are accompanied by pain. These conditions are referred to as "uterine surplus", "an excess of three humours in the cavity"; sometimes they are also called "collections" or are compared to dropsy.[47] Although the descriptions of these conditions seem to present concepts that have not so much in common with the symptoms connected to "locked fluids" in the cuneiform texts - for instance humoural concepts dominant in Greco-Roman medicine (e.g. Galen) cannot be found in Mesopotamia – nonetheless these examples show the longstanding continuity of the basic idea that fluids which should evacuate can become accumulated in the womb and cause illnesses in women, an idea already present in Mesopotamian gynaecology. It is remarkable that the Akkadian phrase *mê turru* potentially embraces the two different notions of retention and reversal of flow that were current especially in the Hippocratic tradition. Because the medical cuneiform texts lack elaborate and detailed theoretical explanations about disease

[46] Chapter 61 actually speaks of the uterus being full of "water" (ὕδατος, Littré VIII 124.10)

[47] See the Hebrew treatises *A Record of the Diseases in the Genital Members* (see Ron Barkai 1998, 133f., 143f.), and *Galen's Book on the Womb, Which Is Called Genicias* (Barkai 1998, 171, 177f. (original in Latin)).

processes and physiology, which are typical for the Greco-Roman medical writers, it is impossible to say that Hippocratic and Mesopotamian medical scholars had identical ideas.[48] Yet, small details in the symptoms associated with "locked fluids" might point to differences in conception: The described symptoms in the Mesopotamian gynaecological texts seem by and large to be restricted to the abdomen and pelvic area, which points more to the idea of accumulation than to the concept of a reversed flow of fluids. In contrast, the Hippocratic doctors also attributed symptoms of female patients affecting organs in the upper half of the body, such as the lungs or heart, to fluids rising from the uterus.

[48] For an overview of the development of Greek anatomical theories see Lloyd 1979, esp. 21ff., 157ff.

4. *Literature*

Abusch T. / Schwemer, D. (2011), *A Corpus of Mesopotamian Anti-Witchcraft Rituals*, Vol. 1, Leiden/Boston.

Attia, A. / Buisson, G. (2003), "Si le crâne d'un homme contient de la chaleur, deuxième tablette", in: *Le Journal des Médecines Cunéiformes* 1, 1-24.

Attinger, P. (2008), "La médecine mésopotamienne", in: *Le Journal des Médecines Cunéiformes* 11-12, 1-95.

Barkai, R. (1998), *A History of Jewish Gynaecological Texts in the Middle Ages*, Leiden/Boston/Köln.

Bourbon, F. (2008), *Nature de la Femme. Hippocrate* Tome XII 1re Partie, Les Belles Lettres, Paris.

Cavigneaux, A. / Al-Rawi, F.N.H. (1995), "Textes Magiques de Tell Haddad (Textes de Tell Haddad II). Troisième Partie", in: *Zeitschrift für Assyriologie und Vorderasiatische Archäologie* 85, 169-220.

Collin, P. (2004), *Dictionary of Medical Terms*, 4th edition, London.

Collins, T.J. (1999), *Natural Illness in Babylonian Medical Incantations*, Ph.D. University of Chicago, Ann Arbor.

Finkel, I.L. (1998), "A Study in Scarlet: Incantations against Samana", in: S.M. Maul (ed.), *Festschrift für Rykle Borger Zu Seinem 65. Geburtstag*, Groningen, 71-106.

Foster, B.M. (2005), *Before the Muses. An Anthology of Akkadian Literature*, 3rd edition, Bethesda.

Frandsen, P.J. (2007), "The Menstrual "Taboo" in Ancient Egypt", in: *Journal of Near Eastern Studies* 66, 81-106.

Geller , M.J. (1989), "A New Piece of Witchcraft", in: H. Behrens, D. Loding, M.T. Roth (eds.), *DUMU-E$_2$-DUB-BA-A. Studies in Honor of Åke W. Sjöberg*, Philadelphia, 193-205.

Geller, M.J. (2004), "West Meets East: Early Greek and Babylonian Diagnosis", in: H.F.J. Horstmanshoff / M. Stol (eds.), *Magic and Rationality in Ancient Near Eastern and Graeco-Roman Medicine*, Leiden, 10-61.

Geller, M.J. (2005), *Renal and Rectal Disease Texts.* Die babylonisch-assyrische Medizin in Texten und Untersuchungen (BAM), Vol. 7, Berlin/New York.

Geller, M.J. (2010), "Nieren-, Darm- und Afterkrankheiten", in: B. Janowski / D. Schwemer (eds.), *Texte zur Heilkunde*. Texte aus der Umwelt des Alten Testaments, Neue Folge, Band 5, Gütersloh, 63-68.

Geller, M.J. / Cohen, S.L. (1995) "Kidney and Urinary Tract Disease in Ancient Babylonia, with Translations of the Cuneiform Sources", in: *Kidney International* 47, 1811-1815.

Genty, Th. (2010), "Les commentaires à TDP 3-40, Première Partie", in: *Le Journal des Médecines Cunéiformes* 17, 1-38.

Goltz, D. (1974), *Studien zur altorientalischen und griechischen Heilkunde. Therapie-Arzneibereitung-Rezeptstruktur,* Wiesbaden.

Hacker, N.F. / Gambone, J.C. / Hobel, C.J. (2010), *Hacker and Moore's Essentials of Obstetrics and Gynecology*, 5th edition, Philadelphia.

Hanson, A.E. (1975), "Diseases of Women 1", in: *Signs* 1/2, 567-584.

Hanson, A.E. (1994), "A Division of Labor. Roles for Men in Greek and Roman Births", in: *Thamyris* 1/2, 157-202.

Hanson, A.E. (1995), "Uterine Amulets and Greek Uterine Medicine", in: *Medicina nei Secoli Arte e Scienza* 7, 281-299.

Hrůša, I. (2010), *Die akkadische Synonymenliste malku = šarru : Eine textedition mit Übersetzung und Kommentar*, Alter Orient und Altes Testament 50, Münster.

King, H. (1998), *Hippocrates' Woman. Reading the Female Body in Ancient Greece*, London, New York.

Kinnier Wilson, J.V. (1968), "Gleanings from the Iraq Medical Journals", in: *Journal of Near Eastern Studies* 27, 243-247.

Köcher, F. (1995), "Ein Text medizinischen Inhalts aus dem neubabylonischen Grab 405", in: R.M. Boehmer / F. Pedde / B. Salje (eds.), *Uruk. Die Gräber* (Ausgrabungen in Uruk-Warka Endberichte 10), Mainz, 203-217.

Lambert, W.G. (1957/58), "Three Unpublished Fragments of the Tukulti-Ninurta Epic", in: *Archiv für Orientforschung* 18, 38-51 (with plates A-D).

Lambert, W.G. (1969), "A Middle Assyrian Medical Text", in: *Iraq* 31, 28-39.

Leitz, C. (1999), *Magical and Medical Papyri of the New Kingdom.* London.

Leung, A.K.C. (ed.), (2006), *Medicine for Women in Imperial China*, Leiden/Boston.

Lienau, C. (1973), *Hippokrates: Über Nachempfängnis, Geburtshilfe und Schwangerschaftsleiden*, Berlin.

Littré, E. (1962), *Oeuvres complètes d'Hippocrate*, Tome 8. Amsterdam.

Lloyd, G.E.R. (1983), *Science, Folklore and Ideology. Studies in the Life Sciences in Ancient Greece*, Cambridge.

Lonie, I.M. (1981), *The Hippocratic Treatises 'On Genereation', 'On the Nature of the Child', Diseases IV',* Berlin, New York.

Maul, S.M. (1994), *Zukunftsbewältigung: Eine Studie altorientalischen Denkens anhand der babylonisch-assyrischen Löserituale (Namburbi),* Baghdader Forschungen 18, Mainz am Rhein.

Michel, S. (2004), *Die Magischen Gemmen. Zu Bildern und Zauberformeln auf geschnittenen Steinen der Antike und Neuzeit*. Berlin.

Newell, R.C. (2007), "The thanksgiving of women after childbirth: a blessing in disguise?", in: M. Kirkham (ed), *Exploring the Dirty Side of Women's Health*, London, New York, 44-59.

Newman, L.F. (1985), *Women's Medicine. A Cross-Cultural Study of Indigenous Fertility Regulation*, New Brunswick/New Jersey.

Nutton, V. (2005), *Ancient Medicine.* London, New York.

Oppenheim, A.L. (1959), "A New Prayer to the Gods of the Night", in: *Analecta Biblica* 12 (= Studia Biblica et Orientalia Vol. III), 282-301.

Parpola, S. (1983), *Letters from Assyrian Scholars to the Kings Esarhaddon and Assurbanipal. Part 2, Commentary and Appendices.* Alter Orient und Altes Testament 5. Kevelaer.

Preuss, J. (1993), *Biblical and Talmudic Medicine*, translated and edited by Dr. Fred Rosner, Lanham, Md./Oxford [Preuss, J., (1911), *Biblisch-Talmudische Medizin. Beiträge zur Geschichte der Heilkunde und der Kultur überhaupt,* Berlin].

Reynolds, F.S. (2002), "Descripting the Body of a God", in: C. Wunsch (ed.), *Mining the Archives: Festschrift for Christopher Walker on the Occasion of his 60th Birthday 4 October 2002,* Dresden, 215-227.

Riddle, J.M. (1992), *Contraception and Abortion from the Ancient World to the Renaissance,* Cambridge/Mass., London.

Röllig, W. (1970), *Das Bier im Alten Mesopotamien*, Berlin.

Roth, M.T. (1995), *Law Collections from Mesopotamia and Asia Minor,* Atlanta.

Schuster-Brandis, A. (2008), *Steine als Schutz- und Heilmittel. Untersuchung zu ihrer Verwendung in der Beschwörungskunst Mesopotamiens im 1. Jt. v. Chr.,* Münster.

Shorter, E. (1991 [1997]), *Women's Bodies. A Social History of Women's Encounter with Health, Ill-Health, and Medicine*, New Brunswick/London.

Steinert, U. (2012), "K. 263+10934, A Tablet with Recipes Against the Abnormal Flow of a Woman's Blood", in: *Sudhoffs Archiv. Zeitschrift für Wissenschaftsgeschichte* 96/1, 64-94.

Stol, M. (2004), “An Assyriologist Reads Hippocrates”, in: H.F.J. Horstmanshoff / M. Stol (eds.), *Magic and Rationality in Ancient Near Eastern and Graeco-Roman Medicine*, Leiden, 63-78.

Stol, M. (2006), “The Digestion of Food According to Babylonian Sources”, in: L. Battini / P. Villard (eds.), *Médecine et médecins au Proche-Orient ancient*, Oxford, 103-119.

Stol, M. (2012), *Vrouwen van Babylon. Prinsessen, priesteressen, prostituees in de bakermat van de cultuur.* Utrecht.

Talon, Ph. (2005), *The Standard Babylonian Creation Myth: Enūma Eliš*, State Archives of Assyria Cuneiform Texts 4, Helsinki.

Thomas, R. (2004), “Greek Medicine and Babylonian Wisdom: Circulation of Knowledge and Channels of Transmission in the Archaic and Classical Periods”, in: H.F.J. Horstmanshoff / M. Stol (eds.), *Magic and Rationality in Ancient Near Eastern and Graeco-Roman Medicine*, Leiden, 175-185.

Westendorf, W. (1999), *Handbuch der altägyptischen Medizin*, Leiden/Boston/Köln.

Wilms, S. (2006) “‘Ten Times More Difficult to Treat’: Female Bodies in Medical Texts from Early Imperial China”, in: Leung, A.K.C. (ed.), *Medicine for Women in Imperial China*, Leiden/Boston, 74-107.

Worthington, M. (2005), “Edition of UGU 1 (= BAM 480 etc.)”, in: *Le Journal des Médecines Cunéiformes* 5, 6-43.

Yates, R.D.S. “Medicine for Women in Early China”, in: Leung, A.K.C. (ed.), *Medicine for Women in Imperial China*, Leiden/Boston, 19-73.

Abbreviations (for other abbreviations see also R. Borger 1975, *Handbuch der Keilschriftliteratur*, Band II, Berlin, New York):

AbB = Altbabylonische Briefe in Umschrift und Übersetzung, Leiden 1964-.

BAM = Köcher, F. (1963-1980), *Die babylonisch-assyrische Medizin in Texten und Untersuchungen,* Berlin.

Littré = *Œuvres complètes / Hippocrate / traduction nouvelle avec le texte grec en regard, collationné sur les manuscrits et toutes les éditions; accompagnée d'une introduction, de commentaires médicaux, de variantes et de notes philologiques par É. Littré*, Amsterdam 1961-1978.

SpTU 1 = Hunger, H., (1976), *Spätbabylonische Texte aus Uruk.* Teil I. Ausgrabungen der Deutschen Forschungsgemeinschaft in Uruk-Warka Band 9, Berlin.

SpTU 2 = Weiher, E. von (1983), *Spätbabylonische Texte aus Uruk.* Teil II. Ausgrabungen der Deutschen Forschungsgemeinschaft in Uruk-Warka Band 10, Berlin.

SpTU 4 = Weiher, E. von, (1993), *Uruk: Spätbabylonische Texte aus dem Planquadrat U 18* (SpTU IV), Ausgrabungen in Uruk-Warka 12, Mainz am Rhein.

The abrasive stone in Assyrian and Babylonian Medicine*

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[kà]š.meš-*ku-nu ki-ma* ⌜*ti*⌝*-ki ana qaq-qar lit-ta-tuk*[1]
May your urine constantly drip to the ground like raindrops![1]

Abstract
The aim of this paper is to discuss the medical significance of a stone which the lapidaries of ancient Mesopotamia used as an abrasive. Since said stone had different names, first we shall study the cuneiform sources which lead us to the meaning 'abrasive stone'. Then, we shall deal with the stone in therapeutic texts, which frequently employed it in the treatment of a group of renal illnesses. As will be shown, the medical importance of abrasive stone was based on a peculiar ideological background rather than real medical experience.

Due to various sources of Ancient Mesopotamia it can be established that there was a certain kind of stone used as abrasive[2] by lapidaries. Among these sources the most informative one is the epic *Lugale* that tells the story of how Ninurta fixed the fate of different stones. Besides *Lugale*, this stone appears in many administrative documents describing the ways abrasive was used in the lapidary craft. Its importance, however, was not restricted to cutting of precious stones, for there are several magical and medical texts that mention it, although they call it in different names.

The first part of this paper intends to examine the expressions denoting abrasive stone. In order to understand the broad phraseology concerning this material, it is essential to examine *Lugale*, administrative sources and lexical lists. The second part of the paper discusses those medical texts in which this stone is mentioned, to establish the illnesses that were cured with it. As it will be shown, the answer for this question can also reveal the ideological background concerning the use of the abrasive stone as *materia medica*.

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[1] One of the curses in Esarhaddon's Vassal Treaty; SAA 2, 6: 470-471; see Scurlock – Andersen 2005: 107. Additionally see the new treaty of the same king that was recently published by Lauinger 2012: 87-125 who read this line as ⌜úš⌝.meš-*ku-nu ki-m*[*a t*]*i-ki ina qaq-qar lit-tu-tuk* (ibid. p. 102).
[2] Note that in the first part of the paper the word 'abrasive' is used to express a type of stone, as well as the way this stone was employed in stone-working craft. On the other hand, while discussing medical texts, this word only refers to the material that was employed among others as *materia medica* in the healing art. Further see note 43.

The names of the abrasive stone in Ancient Mesopotamia

The epic *Lugale* tells the story of how Ninurta, guardian of peace of the civilized world triumphs over the demon Asakku who behaves hostile in the mountains.[3] Asakku does not fight alone against the god, but creates an army of personified stones for himself.[4] After creating the army, a stone is chosen to be its king – the ú (*šammu*) stone.[5] In accordance to its role as king, ú is the first stone the destiny of which is fixed by Ninurta after defeating Asakku.[6]

The passage of the epic containing the descriptions of destinies fixed by Ninurta for the stones is an aetiological account, as it has been claimed many times before.[7] In other words, it explains the origins of the ways stones were employed and seeks explanations for the physical differences that exist among many kinds of stones.

That passage of *Lugale* in which the destiny of the ú stone is fixed, played an important role in its interpretation. Accordingly, ú was among Ninurta's worst enemies; quoting the god's own words, it committed the following sins: 'ú-stone, since you rose against me in the mountains, since you seized me so as to detain me, since you swore to put me to death, since you frightened me, Lord Ninurta, on my great throne'.[8] Therefore, the god curses the ú stone. According to the interpretation of Heimpel,[9] three topics can be determined that are in connection with its future fate:

'What happens to the ú-stone when it is put to use?'

[3] van Dijk 1983; ETCSL c./t. 1.6.2.
[4] *Lugale* 34.
[5] *Lugale* 35-36.
[6] *Lugale* 416-434.
[7] van Dijk 1983 (tome I): 43; Durand 1983: 136 n. 41; Kramer 1985: 138; Jacobsen 1987: 235; Heimpel – Gorelick – Gwinnett 1988: 196; Postgate 1997: 214; Selz 2001: 386; Schuster-Brandis 2008: 17.
[8] *Lugale* 419-422; the translation follows ETCSL t.1.6.2. The translation of ETCSL concerning line 420 is probably based on the Akkadian version of a bilingual Middle Assyrian manuscript from Assur (KAR 14 ii 6): *ana ka-mi-ia ki-i tak-mi-*[*in-ni*]; on the archaeological context of the tablet see Pedersén 1986: N 1, no. 88; Weidner 1953: 207, no. 14. The culture-historical importance of the Middle Assyrian bilingual manuscripts was discussed by Geller 1990: 210-211; moreover, see Seminara 2000: 443-468; idem 2001 (*non vidi*; on its review see Geller 2005b: 122-128).
A manuscript written in the first half of the second millennium contains a rather obscure sentence (SEM 32 ii 4): šu sì-ge$_5$-ĝu$_{10}$-šè mu-e-dab$_5$-ba-gin$_7$ (Falkenstein's translation is possibly based on the context of the passage: 'weil du, mich zu binden, mich gepackt hast'; Falkenstein 1950: 64-65). Although the meaning of this sentence is similar to the one in the Middle Assyrian manuscripts (i.e., the stone wants to hinder Ninurta), the literal translation of its first part is problematic: 'in order to *be* my hands *placed'*. The phrase šu sì-ge$_5$-ĝu$_{10}$-šè may have been obscure for the scribe of the bilingual manuscript too, since he has written the sign KIN instead of SÌ(.GE$_5$) (šu KIN-ĝu$_{10}$-šè; see CAD K s.v. *kamû* A lex. sec, *contra* van Dijk 1983 [tome II]: 119, who transcribed the sign as ŠÍG). The sign KIN has no meaning that would fit for the context.
Some Old Babylonian manuscripts contain another fragmentary sentence the meaning of which is similar to the above mentioned ones (ISET II, Lev. 23, Ni 4395: obv. 5 and SEM 36 obv. 4): […] mu-e-gib-ba-gin$_7$ 'since you blocked the way […]'.
[9] Heimpel – Gorelick – Gwinnett 1988: 197-198. Although it is worth mentioning that Durand 1983: 136 n. 41 also raised the possibility of ú being identical with abrasive.

‘What happens to that on which it is used?’

‘What is its most outstanding ability?’

The answer for the first question is that the stone continuously loses its form and turns into a material that can be heaped up like flour.[10] The second and third questions have much in common. The ú stone is put to use on other stones. Using the words of the epic, it sinks its teeth into their corpses,[11] polishes (sì) them,[12] and cuts them into pieces.[13] The outstanding ability of ú is in connection with its stone-working tasks; one of the hardest stones known by contemporary people, the carnelian, can be worked by it, therefore, Ninurta gives it the name ^{na4}gug bùr-da (lit. ‘drilled carnelian’; see below).[14] Finally, in the last two lines of the passage we read ‘From now on, according to the destiny fixed by Ninurta, when a stone is worked (lit. touched) (or) a carnelian is drilled; let it be so!’[15]

On the basis of these three topics, Heimpel correctly believed that ú was a kind of stone that could be turned into the form of sand and it was used as abrasive in lapidary craft. Furthermore, he suggested that this sand was harder than quartz sand and raised the possibility that ú may have been identical with emery, a very hard natural abrasive.[16]

Besides *Lugale,* thirteen administrative tablets are known from Mari in which ú appears.[17] First, these tablets mention its weight, which is always given in minas and

[10] *Lugale* 426.
[11] *Lugale* 427.
[12] *Lugale* 428. The interpretation of this line is based on Heimpel *et al.* 1988: 197 n. 5 who read hé-sì-dè (‘may polish’) instead of GAN.SUM-gim (van Dijk 1983 [tome II]: 121). The plausibility of Heimpel’s interpretation may be proved on the basis of the bilingual manuscript that contains a rather similar Akkadian sentence (KAR 14 ii 22b): *i-na pu-su-si na-ag-mir*, ‘be used up in abrasion’ (cf., CAD Š/III *šisītu* A lex. sec.).
On the reading of the sign SUM as sum (‘give’) instead of sì see Geller 1985: 218 who translated the line as ‘when your shout has indeed occurred, or has been given, may it be ended’.
[13] *Lugale* 429.
[14] *Lugale* 432. The verb bùr (‘drill’) appears only in the Middle Assyrian manuscript (KAR 14 ii 27), the unilingual manuscripts mention other expressions: kul (‘peck’; UET VI/1, 4 rev. 13) and gul (‘carve’; BE 29/1, 6 rev. ii 1). The latter expression may have had a great importance, for its reduplicated form (i.e., ^{na4}gul-gul) also denotes a type of stone or a type of stone tool, which is discussed by the epic in connection with grinding stones (*Lugale* 448-462; see Civil 2006: 121-138).
[15] *Lugale* 433-434. The translation is based on the Akkadian version of the bilingual manuscript (KAR 14 ii 31): *u$_4$-ma i+na* kur *ab-nu il-la-pat*$^{!}$ *sa-an-tu ip-pa-la-áš ši-i lu* [*ki-a-am*].
[16] Heimpel-Gorelick-Gwinnett 1988: 199. Emery is a type of rock that contains the very hard mineral called corundum (Mohs 9) and iron oxides (see *McGraw-Hill Dictionary of Geology and Mineralogy*, 2003^2, p. 108). The archaeological evidence proving the use of emery was convincingly discussed by Gorelick and Gwinnett; see Heimpel – Gorelick – Gwinnett 1988: 202-210. The theory of Heimpel has been generally accepted later; see Moorey 1994: 82; Degreave 1996: 24; Postgate 1997: 216; Schuster-Brandis 2008: 435; but Selz 2001: 385 ‘harter weißer Kalkstein’.
On the difficulties concerning the identification of Sumerian and Akkadian stone names with modern ones see Yalvaç 1965: 330; Al-Rawi – Black 1983: 138; Steinkeller 1987: 94-95; Moorey 1994: 78-79; Schuster-Brandis 2003: 266-267.
[17] ARM 21 221, 265, 269; ARM 23 67, 68, 380, 525, 526, 527, 528, 529, 530, 531; see Soubeyran in ARM 23, pp. 448-452; Heimpel – Gorelick – Gwinnett 1988: 198 and CAD P s.v. *pallišu* 3a.

shekels,[18] followed by the description of the ways the stone was used. According to these texts, the ú stone was needed to produce different stone objects (*ana šipir*)[19] and it was employed in drilling (*ana palāš*),[20] polishing (*ana sapān*)[21] and cutting (*ana šarām*)[22] of stones.

The tasks of the ú stone mentioned in the texts from Mari are very similar to those described in *Lugale*. The verb *palāšu* with its Sumerian equivalent (bùr) and the Sumerian equivalent of the word *sapānu* (i.e., sì) also appear in the epic. Furthermore, one of the administrative texts from Mari contains an epithet after the stone name,[23] which is very similar to the one that was given to ú by Ninurta in the bilingual manuscript of *Lugale*: *pallišu* ('drilling stone'). This epithet appears without the stone name in two other texts from Mari: 150 kilogrammes (330 pounds) of 'drilling stone' was delivered to a certain Abi-Addu,[24] and two leather cases were filled with it for a royal expedition.[25]

The administrative texts from Mari are not the only sources in which the epithet *pallišu* is mentioned with or without ú. Another administrative document from Assur dated to the Middle Assyrian period records the distribution of ú *ša palliše* ('drilling ú stone') the weight of which is 15 kilogrammes (33 pounds).[26] Besides this document, the epithet appears on its own in three royal inscriptions of Tukulti-Ninurta I who claims that while preparing the terrain for his new city, Kar-Tukulti-Ninurta, he cut passages through high mountains using *pallišu* ('drilling stone').[27]

Further evidence for the importance of the epithet can be found in the sixteenth tablet of Ur_5-ra lexical series.[28] The ú stone appears in three different manuscripts of this tablet exhaustively listing the names of stones and stone objects. Two manuscripts are Old

[18] Since the weight of ú stone was given in round numbers, Heimpel saw it as evidence for being used in the form of sand rather than block (Heimpel – Gorelick – Gwinnett 1988: 198).
[19] ARM 21 265; ARM 23 67, 265, 380, 531.
[20] ARM 21 269.
[21] ARM 23 525. According to CAD S s.v. *sapānu* 1c, the verb means 'smooth'. Furthermore, see the list *Malku* = *šarru* II 259 (Hrůša 2010: 70-71) where it is given as a synonym for the verb *mêsu*, 'crush, squash (people, stone or plant)'; cf., CAD M/II s.v. *mêsu* lex. sec. The meaning 'polish' fits for the usage of the abrasive and it is based on the translation of Heimpel *et al*. 1988: 196-197.
[22] ARM 23 526, 528, 529, 530.
[23] ARM 23 525, 1-3: 1 ma-na 4 gín ú *pa-li-šú a-na sà-pa-an* 1 ^{na4}*sú-i-im*, '1 mina 4 shekels drilling ú stone for polishing a *sû* stone'.
[24] ARM 5 13, 9-11: 5 gun na_4.há *pa-a-li-šu.* The passage was collated by Durand 1987: 188-189.
[25] ARM 23 104, 33: *aš-šum* 2 ^{kuš}*na-ah-ba-at pa-lí-ši-im*. On the word *nahbātu* see ibid. p. 102.
[26] KAJ 178; see Pedersén 1985: M 11, no. 44; Jakob 2003: 264.
[27] RIMA I, A.0.78.23: 101-102; A.0.78.24: 48-49; A.0.78.25: 18-19: *pu-šuq hur-šá-ni ṣi-ru-ti i-na* ^{na4}*pa-li-ši* (var. ^{na4}*pa-li-še*) *lu-še-tiq*; additionally see Durand 1983: 136 n. 41.
[28] MSL X, pp. 1-75.

Babylonian forerunners of the canonical text and the third one is its recension from Ras Shamra (Ugarit).[29]

Nippur[30]	Late Old Babylonian[31]	Ras Shamra recension[32]		
^{na4}ú	^{na4}ú	^{na4}ú-šeg$_6$	=	*ma-ši-li-tu*[33]
^{na4}ú-bùr-bùr	^{na4}ú-še[g$_6$]	^{na4}ú-ú$^{(ú)}$	=	*ša-mu*
	^{na4}níg-bùr-bùr	^{na4}ú-níg-bùr-bùr	=	*ša-mu pa-la-ši*
	^{na4}an-ta	^{na4}ú-níg-sù-sù	=	[*s*]*a-pi-nu*
	^{na4}ki-ta	^{na4}ú-ú-an-na	=	*e-lu*
		^{na4}ú-ú-ki-ta	=	*šap-lu*[34]

On the basis of these lists it is obvious, that the only expression that appears in all three passages besides ú is the well-known bùr (*palāšu*). It is important to note, however, that the lexical lists mention different forms of this expression. The Ras Shamra recension and the Late Old Babylonian forerunner contain a longer form with the abstract prefix níg than the forerunner from Nippur in which bùr is reduplicated after the name of the stone. Although the long form is mentioned in the former two texts, they are by no means similar. While the Ras Shamra recension mentions a 'regular' expression containing ú, the Late Old Babylonian forerunner does not, but uses only the long form without mentioning the actual name of the stone (i.e., ú) itself.

The Ras Shamra recension of Ur$_5$-ra contains another word that is known from the Mari texts: the finite form of the Akkadian verb *sapānu* ('polish'). The well-known Sumerian equivalent of this word (sì) is mentioned in *Lugale*. The expression sì, however, does not appear in this lexical list, but another word, sù does. Besides this passage, there are many bilingual texts where sù seems to be the Sumerian equivalent of *sapānu*.[35]

[29] On the appearance of the stone in the Ras Shamra recension see Schuster-Brandis 2008: 435.
[30] Nippur forerunner 156-157; see MSL X, p. 59.
[31] Late Old Babylonian forerunner 192-196; see MSL X, p. 53.
[32] Ras Shamra recension 325-330; see MSL X, p. 49. The fragmentary passage of the canonical tablet (398-403) was reconstructed on the basis of the Ras Shamra recension (MSL X, pp. 15, 29).
[33] In the first line of the Ras Shamra recension the Akkadian translation of ^{na4}ú-šeg$_6$ (i.e., *ma-ši-li-tu*) has probably been mistaken for *bašiltu* ('heat-treated'); see MSL X, p. 49 n. 325. That the Ras Shamra recension of Ur$_5$-ra XVI has many errors was already mentioned by Stol 1979: 94.
[34] The words an-na and ki-ta were often used to name the two parts of grinding stones (Salonen 1965: 47; Stol 1979: 91-92; L. Milano in *RlA* VIII s.v. *Mühle* A.I. § 2, p. 395a). Besides this lexical list, there are not known any passages where ú-an-na and ú-ki-ta appear.
[35] See CAD S s.v. *sapānu* lex. sec.

The abrasive stone was named in different ways by the above-mentioned sources. The epic *Lugale* and most of the administrative texts from Mari call it ú and this word also appears in all lexical passages. It is important to note, however, that the word ú does not refer only to abrasive stone, but it has another, more common meaning: 'plant'.[36] The probable homonymic nature of ú is reflected in the second half of the relevant passage of the epic *Lugale*. In fact, it seems that one goal of this passage is to solve the problem caused by the homonymic nature of ú: the abrasive stone gets a *new name* from Ninurta, which must be used instead of the former one in the future.[37] The new name of the abrasive stone varies, however, in the different manuscripts of the epic. In the Old Babylonian manuscripts two different words appear that do not seem to be mentioned with ú elsewhere.[38] These words have been replaced in the Middle Assyrian manuscript by a third one that is well known from other sources as well: bùr (*palāšu*). It denotes the most important aspect of the abrasive stone, i.e., stones could be drilled with it. Its Akkadian equivalent appears in all other texts discussed above as the predicate of the sentence or as an epithet after the name of the stone, or it stands on its own. Furthermore, it is mentioned in the lexical lists as follows: ^{na4}ú-bùr-bùr, ^{na4}níg-bùr-bùr (*pallišu*), ^{na4}ú-níg-bùr-bùr (*šammu pallišu*).

The other word that appears rather frequently in connection with ú is *sapānu,* the Sumerian equivalents of which are, according to the sources, both sì and sù. These words denote another aspect of the abrasive, i.e., stones could be polished with it.

Turning to magical and medical texts, we can establish that the designation of the abrasive stone became more specific, since the word ú never appears alone in these sources, when they refer to this material. On the basis of magical texts in which the stone appears (see Table 1) it can be established that most often the form ^{na4}níg-bùr-bùr was used and the 'regular' expression, i.e., ^{na4}ú-níg-bùr-bùr is mentioned only three times.[39] Medical texts, on the other hand, contain much more words for the abrasive stone than magical sources do; these are listed in Table 2. There are many instances where the 'regular' expression containing ú appears, although the determinative na_4 is missing. Since this ú standing at the beginning of the word is the determinative of plants, it seems reasonable to interpret this ú as being used instead of na_4 in this position.[40] This suggestion is possible indeed, although it might be supposed that the material denoted this way did not differ from the one standing

[36] Therefore the stone name was translated as 'plant-stone' occasionally; see Falkenstein 1950: 64-65; van Dijk 1983 (tome I): 104.
[37] *Lugale* 432.
[38] The two other expressions are kul 'peck' and gul 'carve'; see note 14.
[39] Table I, no. I (silim ^{d}Ea and *šimmat ša* gìr 150).
[40] Geller 2005: 3.

with na_4. If we identify ú as a determinative, sometimes used instead of na_4, and not as the name of the stone, we need to explain the inconsistent use of determinatives. It may have been the result of the fact, that the original name of the abrasive stone, ^{na4}ú standing alone was not known for the authors of some medical texts. Since there are a lot of different plants mentioned in these texts, sometimes the authors may have failed to recognize that the more specific designation of the abrasive stone, ú-níg-bùr-bùr, meant rather a kind of stone than a kind of plant and they interpreted ú as a determinative.[41] Another reason for this inconsistency may have been that abrasive stone did not have the characteristics of stones, for it was used in pulverised form.[42] For this reason, sometimes the specialists may have been unable to recognize that the material they had was a pulverised stone and not a ground plant.[43]

Besides $^{(na4)}$ú-níg-bùr-bùr, there are also instances in medical texts where other names of the abrasive appear. These names are also familiar, since they are mentioned by the epic *Lugale,* administrative documents and lexical sources. These terms are $^{(na4)}$ú-níg-sì-sì and $^{(na4)}$ú-níg-sù-sù; the determinative na_4 is used inconstantly in this case, too.[44] Although the meaning of the latter expressions is different (rather 'polishing stone' than 'drilling stone'), it seems reasonable if we suggest that the materials denoted by these words are the same. It is not alien to Mesopotamian thinking that a kind of stone was given different names, which refer to different aspects of the same stone.[45] The different names, therefore,

[41] As evidence for this interpretation one can refer to Table 2, nos. 10 and 12. Both instances have parallel passages and while one of them contains the expression ú-níg-bùr-bùr (and ú-níg-sù-sù), the other mentions ^{na4}ú-níg-bùr-bùr (and probably ^{na4}ú-níg-sù-sù; further see Appendix G.1.1). Besides medical texts, there are some administrative sources as well, that do not use the determinative na_4: ARM 21 269: 1 (10 su *ša-am-mu*); ARM 23 525: 1 (see note 23); ARM 23 104: 33 (see note 25); ARM 23 531: 2 (3 ma-na *ša-am-mu*).

[42] According to *Lugale* 426, ú can be heaped up like flour; see note 10.

[43] However, it is important to bring the attention to M. J. Geller's very interesting remark. In a letter dated on 11 January 2013, Professor Geller raised the possibility of the existence of a plant that may have been called ^{ú}níg-bùr-bùr (i.e., 'abrasive-plant'), since it resembled abrasive stone. In this case, the abrasive stone would have nothing to do with the medical context, but this 'abrasive-plant' would have been used instead of the abrasive stone as *materia medica*.

[44] However, Geller 2005: 72 n. 1, 146 n. 1 raised the possibility that the materials expressed by the words ^{na4}ú-níg-sù-sù, ú-níg-sù-sù and ú-níg-sì-sì are different.

[45] For example, there are at least four expressions referring to basalt: two of them were in connection with the stone's place of origin (*kašurrû*, *šimurrû*), one of them refers to its colour (*ṣallamtu*) and the fourth one's etymology is not known (ad-bar = *adbaru*; it has been suggested that ad-bar was a place name in Northern Mesopotamia or Syria, see Stol 1979: 84). It is, of course, uncertain that these words were perceived by Mesopotamian people as four different expressions for the one and the same kind of stone. There is, however, textual evidence that proves the connection between some of them. One can find the following line in Ur_5-gud (line 123; see MSL X, p. 34; Stol 1979: 85): ^{na4}ad-bar = ŠU-*rum* = *ṣal-lam-tú*. In this text the Sumerian ad-bar the Akkadian equivalent of which is *adbaru* is explained with the word *ṣallamtu*.
On the different expressions denoting basalt see Stol 1979: 83-86. On the identification of ad-bar-stone as basalt see Thompson 1936a: 160-162; Stol 1979: 83-84; Schuster-Brandis 2008: 393. The expression *kašurrû* was also identified as basalt on the basis of archaeological evidence; see Meissner 1922: 244; Luckenbill 1924: 127 e; Thompson 1936a: 162-163; Stol 1979: 84-85.

possibly meant the drilling and the polishing aspects of the one and the same stone, ú, which might be identical with emery, this very hard natural abrasive.[46]

The abrasive stone in Assyrian and Babylonian medicine

The abrasive stone is mentioned as *materia medica* almost without exception in the corpus of those medical texts that discuss the ailments of kidneys, bladder, urethra, penis and groin.[47] Outside this corpus this stone also appears in a single rectal disease text, where it was used with other drugs to cure the 'stricture of the diseased anus'.[48] For two reasons, however, this passage cannot be interpreted as evidence for the use of abrasive as a cure for rectal diseases. On the one hand, the drugs that are listed under the incipit 'stricture of the diseased anus' are also enumerated by three other texts as medicines for the 'sick kidney'.[49] On the other hand, this incipit has two duplicates within the corpus of rectal disease texts, but the recipes belonging to the duplicates contain an entirely different set of drugs.[50]

In the focus of further discussion those nineteen renal diseases texts stand, which were published by M. J. Geller in his *Renal and Rectal Disease Texts*.[51] His publication provides an excellent basis for investigation, since he indicated those passages that have parallels in more medical texts. For this reason, it is possible to collect all incipits with their parallels appearing in this corpus. As a result, the Appendix of this paper contains altogether 59 individual[52] incipits and 15 other passages that do not have incipits but they contain either a name of a disease or a description of a symptom appearing at the end of some recipes (see Chart 1). Among these passages marked with a superscript triangle in the Appendix there is one that has two versions: no. B.16 α and β. The reason for discussing these passages separately under the heading B.16 is that the number of the drugs, as well as the method how the drugs have to

[46] *Contra* Heimpel – Gorelick – Gwinnett 1988: 198, Durand 1987: 188 and Schuster-Brandis 2008: 435 who raised the possibility that the epithet níg-bùr-bùr (*pallišu*) may have been used to denote a variety of the ú stone. Moreover, see the note of Soubeyran in ARM 23, p. 449: 'La pierre *šammu pâlišu* (…). On aurait donc ici la forme complète du nom de cette pierre-*šammu* (…)'; and Durand 1983: 136 n. 41 who interpreted the term *pallišu* as 'l'instrument tranchant'.

[47] The expression níg-bùr-bùr appears in a text dealing with diseases of lungs. It is, however, not mentioned as a kind of drug in this text, but stands as an epithet after the word ^{dug}*burzigallu*; i.e., 'drilled *burzigallu* vessel' (AMT 21,4 rev. 6-11 // BAM 557 2-6 // BAM 564 ii 21-25; see Stol 2004: 73).
On the medical problems related to the urinary tract see Scurlock – Andersen 2005: 98-115.

[48] See Appendix H.

[49] BAM 161 vi 7-21 (= Appendix no. XVII); BAM 165 ii' 15'-24'; BAM 431 v 11'-25' (Geller 2005: no. 18; and see also Table 2, no. 12). Since the two recipes following the incipit and the first prescription in BAM 161 are very fragmentary it is questionable whether they belong to the one and the same incipit.

[50] Geller 2005: 5, 15; and see Appendix H.

[51] Geller 2005: nos. 1-18 and no. 56. Before Geller's publication renal disease texts were discussed by Thompson 1934: 57-151. Two further passages were identified by Scurlock – Andersen 2005: 108, 700 n. 75: STT 95 i 42-43 (see Appendix C.10) and BAM 159 i 14 // BAM 161 v 24 (see Appendix E.5).

[52] Parallel passages are indicated in the first lines of the tables following translations and transliterations in the Appendix. For example, the incipit of Appendix A.2 occurs twice, in text I (i.e., BAM 396) i 23'-24' and in text VIII (i.e., AMT 66,7) 18-19.

be prepared is partly different. There are, however, so many similarities between them that there was a good reason to treat them as identical, while counting the different distributions.

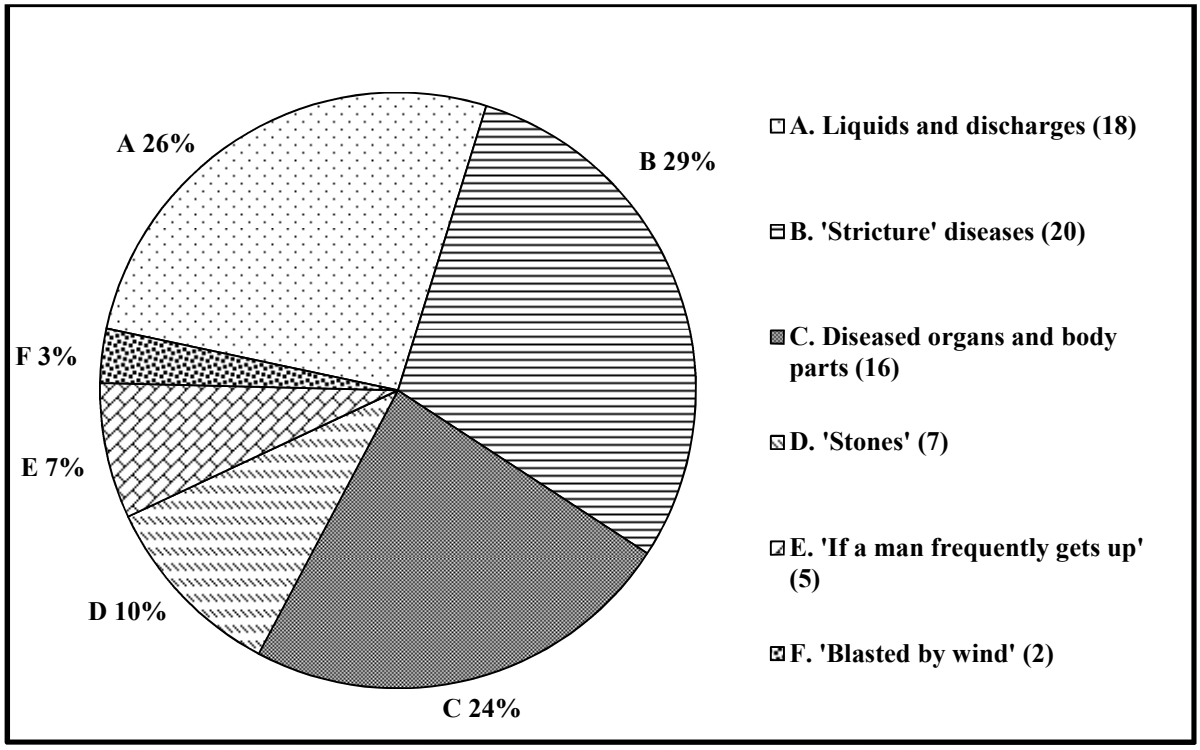
Altogether 98 recipes belong to the incipits and other important passages of the renal disease texts (see Chart 2). In the case of the recipes it needs to be emphasized, however, that sometimes the same recipe might be linked to different medical incipits.[53] For example, within the corpus of renal disease texts there is a recipe that appears in connection with a 'stricture' incipit (Appendix B.1) and another incipit discussing 'stone' (Appendix D.2). Therefore, when a recipe has duplicates linked to different incipits, the recipe itself has been counted as many times as it appears.[54]

On the basis of topics discussed by the incipits and the passages six individual groups were separated. The seventh group contains items that cannot be classified,[55] for sometimes an incipit mentions the names of several diseases and describes several symptoms that could be classified as members of more groups.[56] On the other hand, there are also incipits in which only a disease name appears[57] and probably the way in which the drugs were applied is described.[58] In this case, it was impossible to identify the topic needed for classification.

According to Chart 1, the incipits that discuss different liquids coming from the penis belong to the second largest group within the corpus of renal disease texts. One of the most common symptoms mentioned by these incipits is bleeding.[59] Blood either dribbles from the penis or the patient's urine is bloody.[60] Sometimes the incipits mentioning liquids describe other symptoms as well, therefore, there are a few overlaps between other groups; e.g., besides bleeding Appendix A.2 mentions those symptoms that could also be labelled as 'Diseased organs and body parts' (group C).[61]

[53] Geller 2010: 98-108.
[54] The number of recipes belonging to an incipit is given in the second lines of the tables following translations and transliterations. If an incipit has duplicate passages it has been taken into consideration whether the recipe linked to it is duplicated or it is not. The sign ∑ refers to the quantity of recipes that appear in connection with duplicated incipits.
[55] See Appendix G.
[56] For example, Appendix G.1.2 mentions the 'stricture' disease (group B), the symptom of 'dribbling urine' (group A) and many disease names (group G.3) as well.
[57] See Appendix G.3. The only exception is 'stricture' disease that appears so many times in the corpus that it seemed reasonable to put its passages under one heading (group B).
[58] See Appendix G.2.
[59] Red coloured urine was interpreted by Scurlock – Andersen 2005: 99 as 'Free hemoglobin from broken-down (lysed) red blood cells secondary to a condition such as trauma or tumor may cause red urine. Some food such as beets may also produce this color'. The presence of blood in one's urine can also be due to kidney stones, bilharzia and urinary tract cancer (see ibid. p. 101).
[60] See Appendix A.2; A.3; A.4; A.5; A.14; A.15.3; A.15.4.
[61] Hurting kidney and groin appear among the symptoms.

Chart 1. Distribution of incipits within the corpus of renal disease texts (68)



Blood was not the only fluid in which ancient specialists were interested. Pus discharging from penis[62] and different types of urine (i.e., on the basis of its colour and consistency) were also recorded.[63] Furthermore, some incipits mention that the patient's urine constantly dribbles and he is unable to do anything against it.[64] Another fluid mentioned by the incipits is semen; the way the patient ejaculated is a well-recorded symptom, e.g., he did not notice when it happened.[65] In other cases he felt sharp pain while ejaculating or he was not able to have intercourse at all.[66] Blisters, pustules and scales are the accompanying symptoms of these medical problems. These never appear alone as the main topic of an incipit, but are connected to ejaculating and urinary disorders.[67] According to the incipits, blisters were possibly situated on the pubic region, while scales and pustules were detected on the semen duct and the urethra.[68]

[62] See Appendix A.8; A.14. Pus is mentioned by incipit C.4 in a different context.
[63] See Appendix A.2; G.1.1.
[64] See Appendix A.1; A.9; A.10.
According to Scurlock – Andersen 2005: 107: 'Urinary incontinence is caused by a variety of neurological conditions that paralyze the muscle (sphincter) that closes the urethral opening. Also some anatomical changes in the bladder and urethra can cause incontinence'.
[65] See Appendix A.6; A.7; Scurlock – Andersen 2005: 102-103.
[66] See Appendix A.8.
[67] See Appendix A.6; A.7; A.9.
[68] *muštinnu* = 'urethra', *maṣrah ušari* = 'semen duct'; see Geller 2002: 106.

Blood in the urine, discharge of pus, stinging pain during urination and blisters were interpreted by Geller as possible indicators of urethritis or venereal disease.[69] Elsewhere he raised the possibility that some symptoms may refer to bilharzia.[70] Kinnier Wilson discussed this possibility in detail.[71] The expression *mūṣu* ('discharge') stood in the focal point of his interpretation, which is mentioned most frequently within the context of these kinds of medical problems: hurting kidneys and groin with white-coloured urine containing blood were its symptoms.[72] According to another incipit, the symptoms of *mūṣu* were stinging pain while urinating, pus coming from the penis and the patient's incapacity to have intercourse with a woman.[73] Besides its white colour, urine that looks like beer or wine dreg was also perceived as indicator of the patient being ill with *mūṣu*.[74] After listing the different symptoms of the condition, Kinnier Wilson rejected the former identification of *mūṣu* with gonorrhoea and identified it with bilharzia. Furthermore, the author referred to another medical condition often mentioned by renal disease texts: *hiniqtu* ('stricture'). He thought that stricture of the bladder was in connection with bilharzia, in fact, it was caused by accumulation and calcification of the ova of blood flukes, the parasites of this disease.[75]

Although Kinnier Wilson's interpretation is quite convincing, it needs to be noted that his identifications have not been generally accepted. Later Adamson raised again the

[69] Geller 2005: 1. On the infections related to urinary tract see Scurlock – Andersen 2005: 108-109.
[70] Geller 1995: 1815 n. 17.
[71] Kinnier Wilson 1968: 245-246.
[72] See Appendix A.2. The symptoms described by this incipit were interpreted by Scurlock – Andersen 2005: 102 as '(…) urine that was initially free of blood and with either a deep yellow color (donkey urine) or light (almost colorless: white), but became bloody at the end of urination. This type of terminal hematuria has been described in schistosomiasis [i.e., bilharzia; see below; K.S.], although it can occur in other condition as well. It is due to bleeding near the base of the bladder (trigone)'.
[73] See Appendix A.8.
[74] See Appendix G.1.1. According to Scurlock – Andersen 2005: 101 the beer or wine dregs-like urine 'probably means that it had a large amount of sediment. This material could be amorphous calcium phosphate (apatite) crystals described above, but pigmented by contaminating material such as red or white blood cells. Cellular debris by itself may also collect in urine to form a sediment'.
[75] Kinnier Wilson 1968: 246 '(…) and what we would suggest for *mūṣu* in place of gonorrhoea is urinary schistosomiasis – also called bilharziasis or bilharzia disease – with septic infection of the bladder. This condition is geographically right. The responsible parasite is to be found in canals, drains, and swamps throughout the country (as also Palestine and Egypt); incidence of the uncomplicated disease is up to 100 per cent. in some villages, (…) But what makes the identification especially attractive is that associated with the *mūṣu*-disease are *mūṣu*-stone. Thompson considered that the stones cured the disease; but since by the definition which he himself quotes [i.e., CT 14, pl. 14, K 4396: 8': ^{na4}*mu-ṣu ša libbi ú-ru-la-ti-šú* in n. 22; K.S.] these stones come from the urinary passages of the patient himself, they must, in fact, be calculi. Such stones often form in the disease with the ova of the species as their nuclei, and indeed it is these eggs which make for the whole mischief of the condition. Their sharp terminal spines pierce the wall of the bladder and thus cause the urine to become blood-stained, while, accumulating in enormous numbers, many in time form a calcified lining to the bladder making it difficult for calculi to escape, and causing pain and stricture (*hiniqtu*).'
The interpretation of *mūṣu* being identical with bilharzia was partly accepted by Scurlock and Andersen who do not reject the possibility either that this medical problem can be associated with gonorrhoea in some prescriptions; see Scurlock – Andersen 2005: 699 n. 33 with reference to previous literature. On the disease and the many medical problems it can cause further see ibid. pp. 109-110.

possibility that *mūṣu* is identical with gonorrhoea and he explained the 'stricture of the bladder' differently:

> 'Now, stricture involving the bladder is most unlikely to occur, whereas stricture of the male urethra was a relatively common condition in the past. It is suggested therefore that the anatomical site of the *hiniqti nappahi* is not the bladder but the membranous portion of the male urethra. This lies in close relationship to the base of the bladder and the prostatic gland, and is a common site for a stricture. The commonest cause of urethral stricture in the male is either from trauma or secondary to an acute gonorrhoeal urethritis.'[76]

Finally, Scurlock and Andersen have raised the possibility of many illnesses that can cause the medical problem called 'stricture':

> 'Scar tissue surrounding the urethra can narrow and obstruct the canal, resulting in slowed urine flow and eventually kidney failure. The causes are multiple including trauma, gonorrhoea, and schistosomiasis [i.e., bilharzia; K.S.]. An enlarged prostate, commonly seen in older men, may produce similar problems. Kidney stones may cause rapid cessation of urine flow.'[77]

It is hardly possible to decide which interpretation is correct on the basis of the few symptoms described by the incipits mentioning 'stricture', namely exhaustion, forgetfulness, nightmare, insomnia and hurting shoulders.[78] According to other incipits, symptoms of 'stricture' were difficulties with urination,[79] skin covered with membrane[80] and probably dehydration.[81] Nevertheless, this ailment has a feature that is very important to further investigation. Contemporary people probably perceived it as a condition when a tube-shaped part within their bodies (i.e., urethra, ureter or semen duct)[82] became narrower and they wanted to restore its original size.

The common feature of the third largest group of incipits is that they do not discuss any fluids coming from the penis or the 'stricture' disease, but the medical problems of different body parts and organs are recorded.[83] Among others, stiffed and discharging testicles, flaccid limbs, hurting groin and 'collapsed' intestines, which might refer to prolapse or dropsy,[84] are mentioned by these incipits.[85]

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[76] Adamson 1979: 5-6.
[77] Scurlock – Andersen 2005: 105.
[78] See Appendix B.1; cf., Geller 2005: 1.
[79] See Appendix B.3.
[80] See Appendix B.18.2; this incipit mentions insomnia as the symptom of 'stricture' as well.
[81] See Appendix B.18.3.
[82] That contemporary people differentiated semen duct from urethra (see note 68) may be interpreted as proof of their anatomical knowledge concerning these parts of the body.
[83] Texts related to the medical problems of the penis and the scrotum were also discussed by Scurlock – Andersen 2005: 113-115.
[84] According to Geller 2005: 2 n. 8.

One of the most characteristic renal ailments is calculus (i.e., a stone developing in hollow organs).[86] This medical problem has already been recorded in cuneiform sources, although it is impossible to decide whether the calculi mentioned by the sources were kidney stones (*nephrolith*) or bladder stones (*cystolith*).[87] The reason is that the difference between the two types of calculus was probably of no importance to contemporary people, since they used the one and the same word to express this medical problem: na$_4$ ('stone'). According to the incipits, there were many types of calculus, namely '*dissolving*',[88] 'not moving' and stone that is pushed out by urine.[89]

The last two groups in the Appendix contain those incipits that deal with the topics 'if a man frequently gets up' (*magal* zi-zi-*bi*)[90] and 'blasted by wind' (im *išbiṭ*).[91] The former one can be interpreted either as a symptom that the patient had to get up frequently in order to urinate or as a euphemistic expression of having erection.[92]

Chart 1 shows that the groups dealing with the topics 'stones' (i.e., calculus), 'if a man frequently gets up' and 'blasted by wind' have much less incipits than the other three groups. On the other hand, if we want to represent the quantity of the recipes belonging to the different categories (see Chart 2), the distribution is slightly different. The two largest groups are still those discussing the topics 'liquid' and 'stricture', but the third is the one dealing with calculus.[93] While the usual number of prescriptions added to an incipit varies between 1 and 6 in this corpus, there are only three incipits to which more than six recipes belong. An

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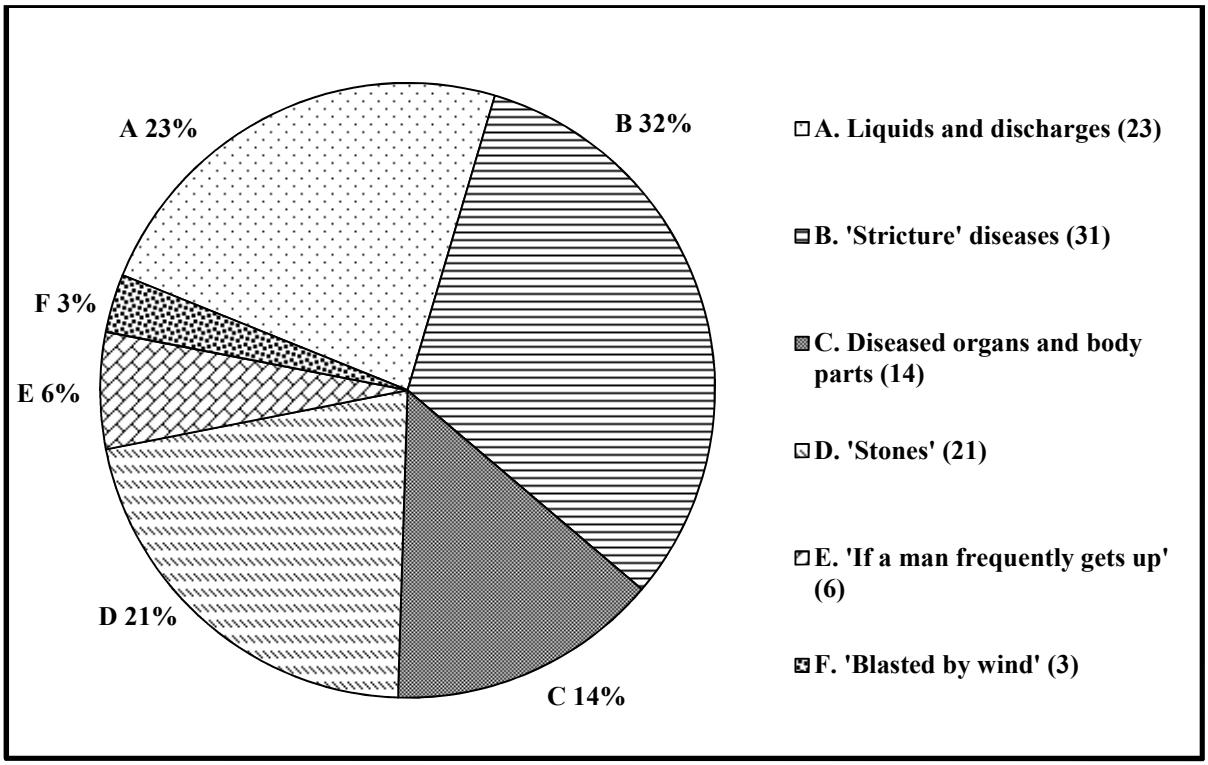
[85] See Appendix C.3 (stiffed testicles); C.4 (testicles containing pus); C.6 (flaccid limbs); C.7 (hurting groin); C.8 and C.9 ('collapse of the intestines').
[86] See Appendix D.
[87] According to Powell 1993: 65 '(…) calculi in the bladder must also have been a problem for the ancient Babylonians, the stone that is treated by giving beer to drink is probably a kidney stone stuck in one of the ureters, not a stone in the urethra (…)'. On the other hand, Scurlock – Andersen 2005: 106 discussed the stone stuck in the urethra as 'The reason for the success of beer in treating urethral stones, as described above, is uncertain, but could either be due to change in urine acidity causing the stone to dissolve, or to the anesthetic effect of alcohol leading to relaxation of muscle spam. Drinking excess water if the patient's urinary tract is obstructed could hasten kidney failure and death'.
[88] Powell argued, however, that a stone is not 'dissolvable', but it can 'fall out' or 'pass' and he interpreted the word *šahāhu* as such (Powell 1993: 65). His suggestion is followed by Scurlock – Andersen 2005: 101 who interpreted the incipit 'If (a man's) urine is white and thick, that man suffers from *dissolving* stone' (see Appendix G.1.1.) as 'Another cause of white or milky urine is the presence of calcium phosphate (apatite) crystals, which usually form in alkaline urine. This material seldom reaches a size capable of blocking the urinary tract or causing the pain associated with larger kidney stones'.
[89] See Appendix D.1 (stone pushed out by urine); D.4 (stone that is not moving); D.5.1 and D.5.3 (*dissolving* stone).
[90] See Appendix E.
[91] See Appendix F.
[92] There is an explicit reference to urine in E.3. Geller 2005: 59 n. 2, 77 n. 2 raised the possibility that *magal* zi-zi-*bi* might be interpreted as 'having an erection', while Scurlock – Andersen 2005: 110-111 interpreted it as priapism (unwanted erection).
[93] Note that the recipes appearing in fragmentary passages are not counted.

unclassified incipit mentioning only the *mūṣu* disease has 15 recipes,[94] 13 recipes were listed in connection with a 'stricture' incipit[95] and 12 recipes were added to another one belonging to the group 'stones'.[96]

Chart 2. Quantity of the recipes linked to the incipits of renal disease texts (98)



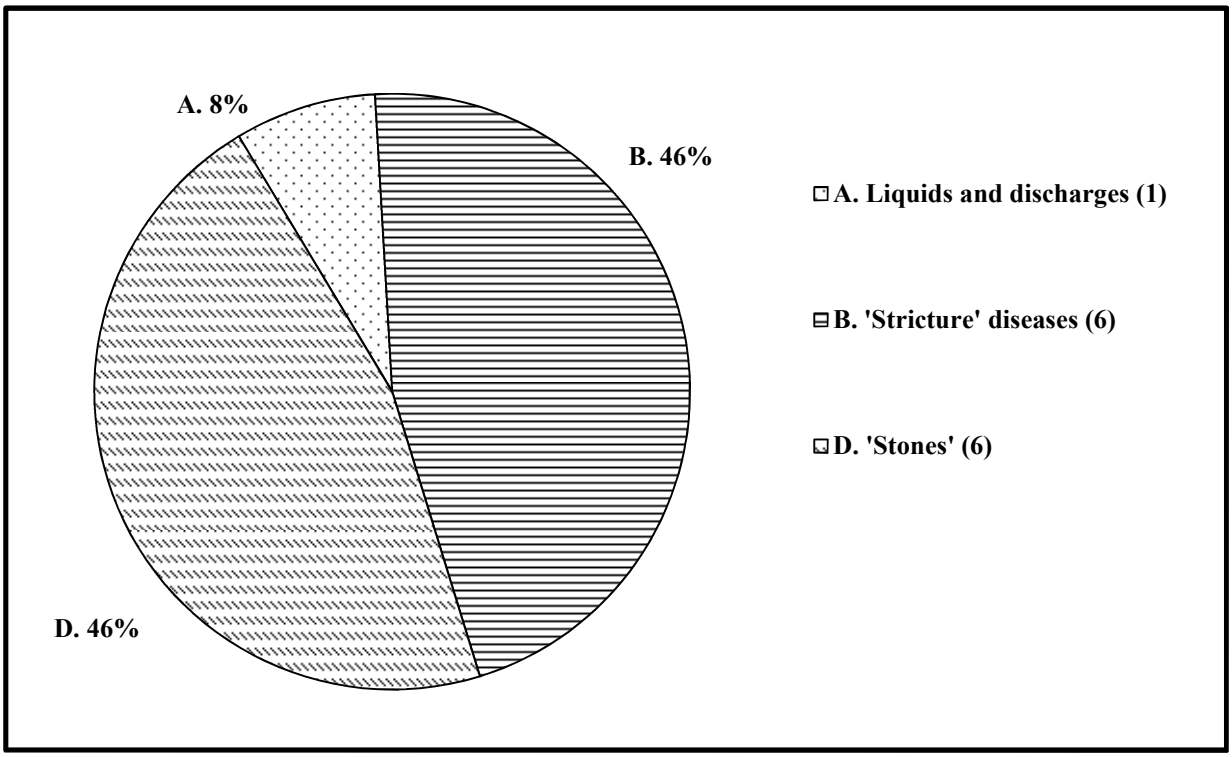
As it has been noted above, the stone used as abrasive had importance as *materia medica* almost without exception as treatment for renal diseases. In fact, this drug was prescribed quite often, although only a few renal ailments were healed with it. Chart 3 shows those medical problems for which it was used. Accordingly, the stone appears in the recipes of the categories 'liquids', 'stricture' and 'stones', but it is not prescribed for ailments labelled as 'diseased organs', 'if a man frequently gets up' or 'blasted by wind'. Furthermore, it appears in connection with two other unclassified incipits as well. One of them lists too many medical problems for exact categorization,[97] while the other only contains the expression *mūṣu*.[98]

Abrasive is mentioned only once in a recipe belonging to the group 'liquid'. It must be noted, that this incipit is very fragmentary; only the description of two symptoms, hurting

[94] See Appendix G.3.1.
[95] See Appendix B.3.
[96] See Appendix D.2.
[97] See Appendix G.1.1.
[98] See Appendix G.3.1.

groin and bloody urine are remained of the passage. Geller's reconstruction suggests, however, that the ailment in question was *mūṣu*.[99] This reconstruction seems reasonable, since *mūṣu* was cured with abrasive stone according to the above-discussed, unclassified incipit that mentions only the name of this disease. Moreover, if we have a look at the other unclassified incipit, we can see that the following ailments are in connection with this drug: *mūṣu*, 'stricture' (of the groin) and 'stone'. The 'sun-fever' is the only exception that does not fit for the context.

Chart 3. Distribution of the abrasive stone within the corpus of renal disease texts (13)



The two ailments treated with abrasive very frequently are 'stricture' and 'stones'. The terms expressing the two main aspects of the stone discussed above (i.e., its drilling and polishing aspect) appear six times in both groups. While the recipes that are in connection with the topic 'stones' contain without exception the term referring to the abrasive's drilling aspect, i.e., $^{(na4)}$ú-níg-bùr-bùr, the prescriptions for 'stricture' – as well as for the two unclassified incipits – have a broader phraseology. Besides the drilling aspect, they also

[99] See Appendix A.3 (Geller 2005: 64) [egi]r kàš.meš-*šú* múd *ú-kal-lam* na-bi [*mu-ṣa* gig]. The reconstruction is based on the similar symptoms discussed by another incipit mentioning *mūṣu* (see Appendix A.2).

mention those expressions that refer to the abrasive's importance in polishing stones, i.e., $^{(na4)}$ú-níg-sù-sù and $^{(na4)}$ú-níg-sì-sì.

It needs to be emphasized that the different terms are not in complementary distribution, for there are some recipes in which both of them appear.[100] Based on the appearance of both terms within the same recipe, one may argue that these terms cannot be interpreted as different words expressing one and the same material – the abrasive stone, but denote different drugs. Nevertheless, it seems preferable to reject this interpretation and remind of the fact that these terms always appear sequentially in these recipes. To give an example, one can notice that sequential listing of the same stone with different epithets is not rare in the lists of amulet stones. As an analogy, one can refer to the stone šu-u that is frequently mentioned by the amulet stone lists. Its two variants are called 'male' (šu-u níta) and 'female' (šu-u munus) and they are enumerated almost without exception in this sequence by the lists.[101]

The recipes mentioning abrasive stone deal with a lot of other drugs as well, the number of which varies between one and ninety-three.[102] Since a certain drug can appear in more recipes, one can separate the frequently mentioned ones from the less common ones. Table 3 shows that most often 'ostrich egg shell' (šika nunuz ga-nu$_{11}$ ^{mušen}), 'donkey vulva' shell (^{na4}peš$_4$-anše), 'sea fruit' (ka-a-ab-ba) and 'myrrh' (^{šim}šeš) appear with abrasive stone, while the otherwise so commonly mentioned plants *imhur-lim* and *imhur-ešra* are less frequent. Furthermore, on the basis of the prescriptions we know the ways in which the drugs have been prepared and applied. They have been crushed, pounded and mixed together and afterwards they have been added to different kinds of beer, wine, oil or milk. Some recipes mention that the medicine has to be placed under the stars for the night.[103] The patient usually drunk the mixture and sometimes he also had to bathe in hot water.[104]

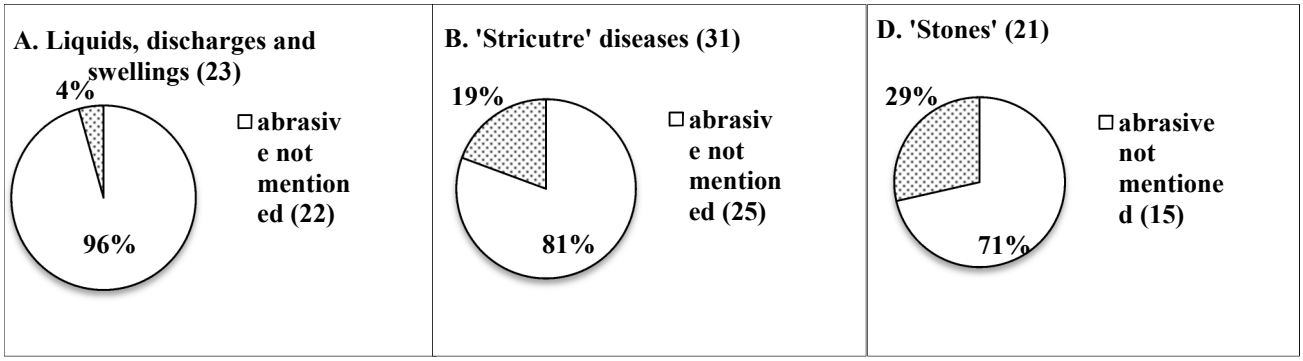
Besides the recipes dealing with many materials, there is another type of prescriptions called 'simplicia' which contains only one drug. Abrasive also appears in a simplicia recipe dealing with 'discharging stone': in order to heal this condition oil of the cedar had to be mixed with vinegar, and abrasive stone must have been blown into the urethra through a

[100] See Appendix B.13; B.16; G.1.1; G.3.1 and Table 2 nos. 3, 4, 5, 10, 11.
[101] Reiner 1995: 126-127; Schuster-Brandis 2008: 448-449.
[102] Appendix A.2 – 37; B.8 – 7; B.13 – 14; B.16.α – 90; B.16.β – 93; B.17 – 9; D.1 (recipe 2) – 7; D.2 (recipe 9) – 2; D.2 (recipe 10) – 19; D.3 (text I) – 5^{+}; D.3 (text XI) – 5^{+}; G.1.1 – 36; G.3.1 – 9.
[103] See Appendix B.16; D.2 (recipe 9); D.2 (recipe 10); the medical procedure of placing the medicine for the night under the stars in order to make it effective was discussed by Reiner 1995: 48-60.
[104] See Appendix D.1 (recipe 2); D.2 (recipe 10); on the classification of the different types of treatments see Ritter 1965: 313-314 who translated the expression in question (Sumerian ra, Akkadian *rahāṣu*) as 'to sponge' (ibid. pp. 313-314: 3'c').

copper tube.[105] It should be noted that besides this prescription there are other recipes of this type that are linked to the same incipit. Among the drugs they mention 'dog's tongue' and myrrh.[106] Since these three drugs have been used solely, it might be interpreted as evidence for their particular importance to deal with 'discharging stone'.

The particular importance of the abrasive stone in healing calculus can be emphasized by Chart 4 as well. This chart represents the frequency if this stone within the three groups in which it appears and proves that the group 'stone' was the one with recipes mentioning this material most frequently.

Chart 4. Frequency of the abrasive stone within the groups 'liquids', 'stricture' and 'stones'



Ideological background

According to Chart 3 and 4, it is possible to define that the abrasive stone was of particular significance to cure the medical conditions 'stricture' and 'stones', and in a lesser extent it was used in the context of the ailment *mūṣu*. To answer the question why this material was so important in treating the former two medical problems, we should turn again to sources dealing with its use in lapidary craft. Besides the data they provide for the identification of different terms that express different aspects of abrasive stone, these sources also tell us that it was needed in the production of stone objects. Put on the surface of stones and rubbed by the head of a drilling tool, this material helped to cut the stones into pieces, to polish and to flatten their surface, as well as to bore deep holes into them. Its significance in stone-working can also be proved by the fact that instead of mentioning its name (ú) some administrative tablets from Mari, the royal inscriptions of Tukulti-Ninurta I and most magical sources call it 'drilling stone', ^{na4}níg-bùr-bùr (*pallišu*).

[105] See Appendix D.1 (recipe 4). Simplicia recipes were discussed by Geller 2005: 4-5.
[106] Incipit D.1, prescription no. 3 ('dog's tongue'); no. 4 (abrasive); no. 5 (myrrh); no. 6 (myrrh); see Geller 2005: 36-37.

The similarity of the abrasive's medical importance to its practical use is remarkable. One of the two medical conditions frequently treated with abrasive is calculus, and it is worth mentioning that the Sumerian word denoting this ailment is identical with the one expressing 'stone' in general, i.e., na_4. Therefore, it seems reasonable to note that contemporary people may have identified common stones with the material forming inside their lower bodies; the same still exists nowadays as well, cf., English 'bladder stone' and 'kidney stone', German 'Blasenstein' and 'Nierenstein' or Hungarian 'hólyagkő' (lit. bladder stone) and 'vesekő' (lit. kidney stone). On the basis of this association, contemporary people may have thought that the ideal medicine to remove calculus was the same mineral so successfully used in shaping stones by craftsmen.

The other medical problem frequently treated by abrasive stone was 'stricture'. It has been identified either as a condition resulted by the calcification and accumulation of the ova of the blood flukes, parasites of bilharzia or as the stricture of the membranous part of the male urethra, the cause of which was trauma or gonorrhoea. As it has been stated above, the particular importance regarding this ailment can be explained on the basis of its name. It seems plausible that contemporary people may have perceived it as a condition when a tube-shaped part inside their bodies became narrower and therefore they possibly intended to restore its original size. The solution may have come from the lapidary craft again. Abrasive stone as a material capable to bore holes into stone could perforate through the narrowed part of this tube-shaped organ as well. Therefore, contemporary people probably found this material fitting for the restoration of the original size of the body part attacked by 'stricture'.

What remains to be explained is the condition *mūṣu* that was cured with abrasive according to two recipes. One of them contains the symptoms of hurting groin and bloody urine, these symptoms can be categorized as members of the groups 'diseased organs' and 'liquid' respectively, in which abrasive does not appear again. The little connection that the stone has with these groups and especially with *mūṣu* cannot be explained on the basis of its practical use. While a narrowed part within the body or a calculus was a suitable ailment for the capability of abrasive stone, the reason for using it to cure hurting kidney or bloody urine remains obscure.

Table 1: The abrasive stone in magical texts[107]

I. Lists of amulet stones	silim ^{d}Ea 'Reconcile Ea'	BAM 375 ii 18.	^{na4}níg-bùr-bùr
		BAM 376 i 7'.	$^{(na4)}$ú-níg-bùr-bùr
		BM 56148+ ii 47.	^{na4}níg-bùr-bùr
	en dug_4-dug_4 'Adversary'	SpTU II, 22 + SpTU III, 85 iii 23.	^{na4}níg-bùr-bùr
		BAM 419 ii 10'.	^{na4}níg-bùr-bùr
	šimmat ša gìr 150 'Paralysis of the left leg'	K 7964 + 9100 ii 15	$^{(na4)}$ú-níg-bùr-bùr
	šu gidim *šimmat ša* šu.II *u* gìr.II 'Hand of the ghost, paralysis of the hands and the legs'	BAM 345 rev. 7'.	$^{[n]a4}$níg-bùr-bùr
		K 2542 + ii 22.	^{na4}ú-níg-bùr-[bùr]
		UET IV, 150 obv. 9	^{na4}níg-bùr-bùr
	Lamaštu	BAM 356 i 9.	$^{(na4)}$níg-bùr-bùr
		UET IV, 149 rev. 1.	^{na4}níg-bùr-bùr
	nēmedī hajjatti '«Support» (against) *hajjattu*'	BAM 367 15.	$^{(na4)}$níg-bùr-bùr
		BAM 375 ii 46.	^{na4}níg-bùr-bùr
		BAM 376 ii 26'.	$^{(na4)}$níg-bùr-bùr
		BM 56148+ iii 42.	^{na4}n[íg$^{?}$-bùr-bùr]
		80-7-19, 109 i 6'.	^{na4}níg-bùr-bùr
		BAM 420 iii 2.	^{na4}níg-bùr-bùr
		BM 42445 rev. 3.	$^{[n]a4}$níg-bùr-bùr
II. šà-zi-ga		STT 272 4.	$^{[n]a4}$níg-bùr-bùr
		STT 280 ii 6.	^{na4}níg-bùr-bùr
III. nam-búr-bi		82-3-23, 1 rev. 5.	^{na4}níg-bùr-bùr
IV. Lists of stones		BM 42648 rev. 2.	^{na4}níg-bùr-bùr
		VR 30, no. 5 rev. 10.	^{na4}níg-bùr-bùr
		STT 401 i 1.	^{na4}níg-bùr-bùr

[107] The determinative na_4 in round brackets means that while listing different amulet stones, certain sources do not use the determinative at all (BAM 356, BAM 376) or it appears only at the beginning of the line (BAM 367, K 7964 +).
On amulet stone lists see Schuster-Brandis 2008: 82-83 (Kette 10 = silim ^{d}Ea); 103 (Kette 54 = en dug_4-dug_4; the *SpTU* texts is published as 'Text 6' in ibid. pp. 247-264); 125 (Kette 100 = *šimmat ša* gìr 150); 142-143 (Kette 138 = šu gidim *šimmat* šu.II *u* gìr.II); 145-146 (Kette 143 = *Lamaštu*); 150 (Kette 170 = *nēmedi hajjatti*). On the *Lamaštu* text further see Farber 1989: 71-72.
BM 56148+ = Schuster-Brandis 2008: 276-318 (Text 9); K 7964 + 9100 = ibid. pp. 373-390 (Text 17E); K 2542 + 2772 + 2991 + 3300 + 6030 + 10223 + 13382 + DT 85 + 170 = ibid. pp. 373-390 (Text 17A); 80-7-19, 109 = ibid. pp. 214-240 (Text 4'E'); BM 42445 = Finkel 2000: 183-184 (Text 25); BM 42648 = ibid. p. 184 (Text 26).
On the šà-zi-ga texts see Biggs 1967: 67, and the nam-búr-bi text was published in Caplice 1970: 118-124.

Table 2: The abrasive stone in medical texts

No.	Medical incipits	Appendix nos.	Abrasive
1.	[…] *his groin causes him pain* […]*, his urine contains blood: that man* […]	Appendix A.3.	^{na4}ú-níg-bùr-bùr
2.	*Seven drugs for 'stricture of the bladder'.*	Appendix B.8.	[ú$^{(?)}$-n]íg-bùr-bùr
3.	*Fourteen drugs for 'stricture'.*	Appendix B.13.	ú-níg-bùr-bùr ú-níg-sì-sì^{sar}
4.	*Total ninety drugs soaked for 'stricture'.*	Appendix B.16.α.	^{na4}ú-níg-bùr-bùr ^{na4}ú-níg-sì-sì
5.	*Total ninety-three drugs soaked for 'stricture'.*	Appendix B.16.β.	[^{na4}ú-níg-bùr-bùr] ^{na4}ú-níg-sù-sù
6.	*Nine drugs for 'stricture'.*	Appendix B.17.	ú-níg-bùr-bùr
7.	*If a man* […]*, his urine discharges 'stone' (i.e., calculus): that man* […]	Appendix D.1. (recipe 2) Appendix D.1. (recipe 4)	^{na4}ú-níg-bùr-bùr níg-bùr-bùr
8.	*If a man suffers from 'stone' (i.e., calculus).*	Appendix D.2. (recipe 9) Appendix D.2. (recipe 10)	ú-níg-bùr-bùr ú-níg-bùr-bùr // ^{na4}níg-bùr-bùr
9.	*If a man either suffers from stone (i.e., calculus), (or?) mūṣu disease* […], … […]	Appendix D.3. (text IX) Appendix D.3. (text XI)	ú-níg-bùr-bùr ú-níg-bùr-bùr
10.	*If a man's urine is like the urine of a donkey (...)*	Appendix G.1.1.	ú-níg-bùr-bùr // ^{na4}ú-níg-bùr-bùr ú-níg-sù-sù // [$^{na4(?)}$ú]-níg-sù-sù
11.	*If a man is ill with mūṣu disease.*	Appendix G.3.1.	ú-níg-bùr-bùr ú-níg-sù-sù
12.	Kidney disease drugs	BAM 161 vi 10. BAM 165 ii' 21'. (Geller 2005: no. 18, mss. YY and S_1)	^{na4}ú-níg-bùr-bùr // ú-níg-bùr-bùr
13.	Poultices (*mêlu*)	LKA 146 obv. 28. (Lambert 1980: 77-83)	ú-níg-bùr-bùr
14.		AMT 34,3 7'.	ú-níg-bùr-bùr
15.	According to BAM I, p. xv this text contains recipes for eye diseases.	BAM 16 rev. 6'.	níg-bùr-bùr

Table 3: Top eight drugs listed with the abrasive stone in medical texts**Appendix: Incipits of**

Appendix nos.	šika nunuz ga-nu$_{11}$ ^{mušen}	^{na4}peš$_4$-anše	ka-a-ab-ba	^{šim}šeš	numun ^{ú}eme-ur-gi$_7$	^{ú}igi-*lim*	^{ú}tara-muš$_{(8)}$	^{ú}igi-*ešra*
A.3.					**x**	**x**	**x**	**x**
B.8.	**x**			**x**		**x**		
B.13.	**x**	**x**		**x**	**x**	**x**	**x**	**x**
B.17.	**x**							
D.1. (recipe 2)	**x**	**x**		**x**	**x**			
D.2. (recipe 10)	**x**	**x**	**x**	**x**	**x**		**x**	
D.3. (text IX)	**x**	**x**	**x**					
D.3. (text XI)	**x**	**x**	**x**					
G.1.1.	**x**	**x**	**x**		**x**	**x**	**x**	**x**
G.3.1.	**x**	**x**	**x**	**x**				

renal disease texts[108]

Texts:

I.	= Geller 2005: no. 1.	=	BAM 396 (+ parallels)
II.	= Geller 2005: no. 2.	=	AMT 31,1 + 59,1 + 60,1 (+ parallels)
II.1.	= Geller 2005: no. 2a ms. B1.	=	AMT 61,1 (+ parallel)
II.2.	= Geller 2005: no. 2a ms. B2.	=	AMT 40,3
II.3.	= Geller 2005: no. 2a ms. B4.	=	AMT 58,5
II.4.	= Geller 2005: no. 2a ms. B5.	=	AMT 58,6 (+ parallels)
III.	= Geller 2005: no. 3.	=	BAM 111 (+ parallels)
IV.	= Geller 2005: no. 4.	=	BAM 112 (+ parallels)
V.	= Geller 2005: no. 5.	=	BAM 114 (+ parallels)
VI.	= Geller 2005: no. 6.	=	BAM 115 (+ parallels)
VII.	= Geller 2005: no. 7.	=	BAM 116 (+ parallels)
VIII.	= Geller 2005: no. 8.	=	AMT 66,7 (+ parallels)
IX.	= Geller 2005: no. 9.	=	AMT 82,1+; AMT 58,3+ (+ parallels)
X.	= Geller 2005: no. 10.	=	KAR 73 rev. 1-14.
XI.	= Geller 2005: no. 11.	=	K 6493+ (Geller 2005: pls. 11-12)
XII.	= Geller 2005: no. 13.	=	AMT 39,6
XIII.	= Geller 2005: no. 14.	=	AMT 89,4 + AMT 53,8
XIV.	= Geller 2005: no. 15.	=	AMT 2,7
XV.	= Geller 2005: no. 16.	=	AMT 66,11 (+ parallels)
XVI.	= Geller 2005: no. 17.	=	BAM 113
XVII.	= Geller 2005: ms. YY.	=	BAM 161 iv 11'-12', v 3-25, vi 7-21.
XVIII.	= Geller 2005: no. 23.	=	AMT 40,5 (+ parallels)
XIX.	= Geller 2005: no. 27.	=	BAM 88 (+ parallels)
XX.	= Geller 2005: no. 32.	=	AMT 56,1 (+ parallels)
XXI.	= Geller 2005: no. 56.	=	BAM 117

[108] Texts are indicated by Roman numerals in the Appendix. The plus sign in superscript means the passage is fragmentary and there are probably more recipes in it. The question mark in superscript after the plus sign means that it is doubtful whether there are any more recipes in the fragmentary passage.
If otherwise not indicated, translations are based on Geller 2005. The incipits of renal disease texts are also listed in ibid. pp. 271-274.

A. Liquids and discharges: urine, blood, semen, pus, blister and pustule

A.1.

diš na *ta-at-ti-kám ša* kàš gig

If a man suffers from dribbling urine.

Incipit	I. i 10’
No. of recipes	1 (i 10’-13’)

A.2.

diš na ^{uzu}éllag-*su* gu$_7$-*šu* murub$_4$-*šú* tag-tag-*šú ù* kàš-*šú* gim kàš anše babbar egir kàš-*šu* múd *ú-kal-la-ma* na-bi *mu-ṣa-am* gig

If a man’s kidney hurts, his groin constantly causes him pain and his urine is as white as the urine of a donkey; later on, his urine contains blood: that man is ill with *mūṣu* disease.

Incipit	I. i 23’-24’	VIII. 18-19	
No. of recipes	1 (i 25’-31’)	1 (19-22)	∑: 2

The translation of the verb *ú-kal-la-ma* (i.e., *ukallā-ma*) based on CAD K s.v. *kullu* 2a (‘contain’) and CAD D s.v. *damu* 1b 1’.

The first part of the two recipes is identical, but at least one more drug is recorded in the second part of the recipe belonging to text VIII. On the interpretation of the incipit see note 72.

A.3.

[…]-*a-šú* ⌜murub$_4$⌝.meš-*šú* gu$_7$.meš-*š*[*ú* …] [… k]àš.meš-*šú* múd *ú-kal-lam* na-bi […]

[…] his groin causes him pain […], his urine contains blood: that man […]

Incipit	IV. i 2’-3’
No. of recipes	1 (i 4’-12’)

ABRASIVE STONE: ^{na4}ú-níg-bùr-bùr (i 9’).

A.4.

[diš n]a *ina* gìš-*šú* múd *ú-tab-ba-kám* gim dam ^{giš}tukul *ma-h*[*i-i*]*ṣ*

If a man – as if he were a menstruating woman – has blood dripping from his penis.

Incipit	I. iv 3
No. of recipes	1 (iv 4-5)

The translation of the phrase dam ^{giš}tukul *ma-hi-iṣ* follows CAD M/I s.v. *mahāṣu* 1a-2’; further see Scurlock – Andersen 2005: 102.

A.5.

diš na *ina* gìš-*šú* múd *ú-ta*[*b-ba-kam* …]

If a man has blood dripping from his penis […]

Incipit	IV. ii 17’
No. of recipes	1 (ii 18’-19’)

A.6.

diš na *i+na-aṭ-ma i+na* gin-*šu ri-hu-us-su* gin-*ma* nu-zu [gim *š*]*a* gal$_4$-la-*šu* gin-*ma ma-as-ra-ah* ⌜giš⌝-*šu* ù-bu-bu-ul *ma-li*

If a man has urinary disorder and, like the one who has sex with his genitalia (var. with a woman), he ejaculates while having sex, but he is not aware of it and his semen duct is full of pustules (var. and scales).

Incipit	I. iv 6-8	II.1. 5’-6’	
No. of recipes	1 (iv 9-12)	1 (6’-8’)	∑: 1

The verb gin (‘go’) was interpreted as a euphemistic expression for ‘having sex’ by Geller (2005: 41 n. 1).

A.7.

[diš na *ina* gin-*šú r*]*i-hu-su* gin-*ma* nu-zu *ka-la ú-ri-šú* […] [ù-b]ú-bú-ul tur.meš diri

If a man ejaculates while having sex, but he is not aware of it; his whole pubic region […] is full of small pustules.

Incipit	II.1. 9'-10'
No. of recipes	1 (10'-11')

A.8.

diš na gìš-*šú ú-zaq-qa-su* u_4*-ma* kàš.meš-*šú i-šá-ti-nu ri-hu-su* šub-*a* [*ina* š]à-*šú ṣa-bit-ma ana* munus gin-*ka* lá lugud *gi-na-a ina* gìš-*šú* gin-*ak* na-bi *mu-ṣa* gig

If a man's penis stings him when he passes urine (or) ejaculates, he is affected in his innards, and he is not able to have intercourse with a woman, pus constantly comes from his penis: that man is ill with *mūṣu*.

Incipit	II.4. 2'-3'	III. i 16'-17'	IV. i 17'-19', 34'-36'	
No. of recipes	$3^{+(?)}$ (ll. 3'-9')	1 (i 18'-20')	6 (i 19'-33', 36'-39')	∑: 6

Recipe 1: II.4. 3'-5' // III. i 18'-20' // IV. i 19'-21'. Recipe 2: II.4. 6'-7' // IV. i 22'-24'. Recipe 3: II.4. 8'-9' // IV. i 25'-27'.

On the reconstruction of text III i 17'-20' see Geller 2005: 56. The translation of the sentence *a-na* munus gin-*ka* lá is based on Biggs 1967: 26; cf., CAD M/I s.v. *maṭû* 4c. The translation of Scurlock – Andersen 2005: 103 is 'If a person's penis stings him, he lets his semen fall when he urinates, he is impotent and his sexual appetite is diminished, (and) pus continually flows from his penis (…)'.

A.9.

diš na kàš.meš-*šú ut-ta-na-tak ka-la-a la i-la-a'* ^{uzu}bun-*šu he-sa-at* im diri-*ma ma-as-la-ah* kàš.meš-*šú i-bi-ta* diri

If a man constantly dribbles his urine (and) he is not able to hold (it) back, his bladder is swollen, he is full of wind and his urethra is full of blisters.

Incipit	III. ii 21'-24'
No. of recipes	$1^{+(?)}$ (ii 24'-34')

The listing of the first few drugs is followed by a comparative sentence (l. 29': *ki-ma si-li-'-šu il-tap-tu-šú*), which contains a disease name (*sili'šu*). Then, the rest of the drugs are listed.

The incipit was also discussed in Geller 2002: 104 and Scurlock - Andersen 2005: 108, 700 n. 62. On the translation of *maslah šināti* as 'urethra' see Geller 2005: 59 n. 3.

A.10.

diš na šà gìš-*šú* gig-*ma* kàš-*šú* bi-iz-bi-iz

If a man is ill in the *shaft* of his penis and his urine constantly dribbles.

Incipit	IX. iii 9'
No. of recipes	$3^{+(?)}$ (iii 9'-13')

A.11.

[diš na …] *ù* kàš-*šú it-ta-na-aṣ-ba-ta*

If a man […] and his urine is constantly affected.

Incipit	XV. i 6'
No. of recipes	2 (i 7'-16')

A.12.

[diš n]a *ina* ki-ná-*šú* kàš-*šú iš-tin* ⌜šu⌝ ^{d}*be-let*-dingir.meš t[i]

If a man passes urine (while lying) in his bed: hand of Bēlet-ilī. He will recover.

Incipit	VI. obv. 14’
No. of recipes	$1^{+(?)}$ (obv. 15’-16’)

Incipit nos. A.11. and A.12. were discussed by Scurlock – Andersen 2005: 108 as well, who interpreted them as ‘Bed wetting (enuresis) is a common problem of childhood. Emotional disturbances can delay the child’s ability to achieve this control. There are also anatomical and neurological causes of this condition, but they are uncommon’.

A.13.

[diš na *ina* k]i-ná-*šú* kàš.meš-*šú* ⌜*iš-tin*⌝-[*ma* …]

If a man passed urine (while lying) on his bed […]

Incipit	VI. rev. 4’
No. of recipes	$1^{+(?)}$ (rev. 5’-7’)

A.14.

[diš na *iš-tu*] gìš-*šú* múd lugud è.meš-*šú* gim *ṣi-bit* ur-bar-ra *lu* […]

If from a man’s penis blood and pus are discharged (and) like the attack of a wolf […]

Incipit	II.1. 12’
No. of recipes	1 (13’)

A.15. Incipits in fragmentary passages

A.15.1.

[diš na…] ⌜x⌝dab.meš-*ta i-na*-[*at* …]

[…] affected, he has urinary disorder […]

Incipit	II.1. 2’
No. of recipes	1 (3’-4’)

A.15.2.

[diš na … *ta*]*s-li-a-te-šú* tag-ga-*šú* kàš.meš-*šú* dib.meš-*t*[*a* …]

If a man’s […] and his … causes him pain (and) his urine is affected […]

Incipit	II.1. 14’
No. of recipes	$1^{+(?)}$ (15’-17’)

Scurlock – Andersen 2005: 113 translated the line as ‘If a person’s sprinklings hurt him intensely, he continually holds his urine’.

A.15.3.

diš na *ina* kàš.meš-*šú* m[úd *ú-tab-ba-kam* …]

If a man passes blood in his urine […]

Incipit	II.3. 6’
No. of recipes	1 (7’-8’)

A.15.4.

[diš na …] ⌜x⌝ ⌜kàš⌝.meš-*šú* [… *ina* k]àš.meš-⌜*šú*⌝ múd.meš

If a man […] his urine […] in his urine blood […]

Incipit	III. i 2’-3’
No. of recipes	$3^{(?)}$ (i 5’-15’)

B. 'Stricture' diseases: groin, bladder and 'midday'

B.1.

[diš] na maš-sìla^{II}-*šú* gu$_7$.meš-*šú i-ta-an-na-ah im-ta-na-aš-ši* ní *ṭe$_4$-en-š*[*ú iš-ta-na-an-ni*]
[máš-g]i$_6$.meš-*šú par-da* síg ugu-*šú* gub-gub-*az* šà-*šú pi-qam* nu *pi-qam i-par-r*[*u-ud-ma*]
[*ur-r*]*a u* ge$_6$ *la i-ṣal-lal* na-bi *hi-niq-ti* bun gig

If a man's shoulders hurt him, he is constantly exhausted (and) forgetful. He himself keeps changing his mind. His dreams are frightening, the hair of his scalp stands on end, from time to time he is upset and he cannot sleep day and night: that man suffers from 'stricture of the bladder'.

Incipit	II. i 3-5
No. of recipes	2 (i 5-12)

The second recipe (i. 11-12) appears in text VI obv. 10'-12' as well, where it is connected to 'stones'; see. no. D.2.

Scurlock – Andersen 2005: 105 also discussed the incipit. They translate the verb *parādu* as 'vomit', and interpret the medical problem as 'stricture of the urethra'.

B.2.

diš na *hi-niq-ti* bun gig — If a man suffers from 'stricture of the bladder'.

Incipit	II. i 16
No. of recipes	2 (i 16-17)

B.3.

diš na *ana* kàš-*šú aš-*⌜*ṭu*⌝*-ú-*⌜*ṭi*⌝ ⌜x⌝ [*hi-ni*]*q-ti* bun gig

If a man has *difficulty* with his urine […]; he suffers from 'stricture of the bladder'.

Incipit	II i 18
No. of recipes	13 (i 18-32)

Recipe nos. 7 (i 24), 8 (i 25), 11 (i 30) and 13 (i 32) have alternatives separated by *Glossenkeil*.

B.4.

diš na *hi-niq* bun gig — If a man suffers from 'stricture of the bladder'.

Incipit	II. i 33
No. of recipes	1 (i 33-34)

B.5.

diš na *hi-niq* bun gig — If a man suffers from 'stricture of the bladder'.

Incipit	II. i 35
No. of recipes	1 (i 35-42)

B.6.

[diš na *hi*]*-niq-ti* gig — If a man suffers from 'stricture'.

Incipit	II. ii 3
No. of recipes	1 (ii 3)

B.7.$^{\Delta}$

7 ú.há *hi-niq-ti* — Seven drugs for 'stricture'.

Text	II. i 13-14	XIII. obv. 14'-16'

B.8.$^{\Delta}$

7 ú.[há *hi-niq-ti* bun$^{?}$] — Seven drugs for ‘stricture of the bladder$^{?}$’.

Text	II. i 15

ABRASIVE STONE: [ú$^{(?)}$-ní]g-bùr-bùr.

B.9.$^{\Delta}$

[x ú.há *an-nu-ti*] *hi-niq-ti* bun — These [x] drugs for ‘stricture of the bladder’.

Text	II. i 43-46

B.10.$^{\Delta}$

3 ú.meš *hi-niq-ti u šim-m*[*a*$^{?}$*-ti* …] — Three drugs for ‘stricture’ and *šimmatu* […].

Text	II. ii 2

B.11.$^{\Delta}$

14 ú.meš *hi-níq-ti* — Fourteen drugs for ‘stricture’.

Text	II. ii 7-8

B.12.$^{\Delta}$

[7] ⌜ú⌝.há *hi-niq-ti* — Seven drugs for ‘stricture’.

Text	II. ii 9-10

B.13.$^{\Delta}$

14 [ú.há *hi-niq-ti*] — Fourteen drugs for ‘stricture’.

Text	II. ii 11-12

ABRASIVE STONE: ⌜ú⌝-níg-bùr-bùr, ⌜ú-níg⌝-[sì]-⌜sì⌝^{sar} (ii. 12).

B.14.$^{\Delta}$

9 ú.há *hi-ni*[*q-ti* …] — Nine drugs for ‘stricture’.

Text	II. ii 13-14

B.15.$^{\Delta}$

[*ana hi-n*]*iq-*⌜*tú*⌝ ud-⌜zal$^{?}$⌝-sa$_{9}$ — For ‘stricture of the *midday’*.

Text	VII. rev. 10’-14’

B.16.$^{\Delta}$

α.

šu-nigin 90 [ú.há *šá*] *hi-níq-ti* gal-*ú* — Total ninety drugs soaked for ‘stricture’.

Text	IX. i 3-34

ABRASIVE STONE: $^{\lceil na4}$ú⌝-níg-bùr-bùr, ^{na4}⌜ú⌝-[níg-sì-s]ì (i 29).

β.$^{\Delta}$

pap 93 ú.há *hi-níq-ti* gal$^{!}$*-ú* — Total ninety-three drugs soaked for ‘stricture’.

Text	XI. 9’-35’

ABRASIVE STONE: [^{na4}ú-níg-bùr-bùr], ^{na4}ú-níg-sù-sù (30’-31’).

B.17.$^{\Delta}$

9 ú.há *hi-níq-ti* […] — Nine drugs for ‘stricture’.

Text	XIII. obv. 10’-13’

ABRASIVE STONE: ú-níg-bùr-bùr (obv. 12’).

B.18. Incipits in fragmentary passages

B.18.1.

diš na *hi-níq-ti* m[urub$_4$ …] If a man [suffers from] ‘stricture of the groin’ […]

Incipit	XIII. obv. 4’
No. of recipes	1 (5’)

B.18.2.

[diš na …]-*dir-šú* ⌜bar uzu⌝.meš-*šú ši-ši-t*[*u ma-li*][…] *u*$_4$-*mi u* ge$_6$ *la i*-[*ṣal*]-*lal* na-bi [*hi-niq-ti* bún]

If a man’s […], the skin of his flesh is covered with a membrane, […] day and night he cannot sleep, that man suffers from ‘stricture of the bladder’.

Incipit	XVI. 3’-4’
No. of recipes	1 (5’)

B.18.3.

[diš na …] ⌜*ú-ta*⌝-*na-har* na-bi *hi-niq*-[*ti* bún]

If a man’s […] dried up, that man suffers from ‘stricture of the bladder’.

Incipit	XVI. 6’
No. of recipes	1$^{+(?)}$ (7’)

C. Diseased organs and body parts: testicle, groin, penis, intestines and pain in the limbs

C.1.

diš na šir-*šú* gig If a man is ill in his testicles.

Incipit	I. iv 13
No. of recipes	1 (iv 13-14)

Scurlock – Andersen 2005: 113-114 translated this line as ‘If a person’s testicle is sore’.

C.2.

diš ⌜na šir dili⌝ <gig> If a man is ill in one testicle.

Incipit	I. iv 15
No. of recipes	5 (iv 15-27)

See Scurlock – Andersen 2005: 114: ‘If a person has burning sensation (?) in one testicle’, and they have the following interpretation concerning this medical problem: ‘Some of these unilateral cases might have been due to mums orchitis since this infection often causes only one-sided testicular disease with pain and swelling followed by testicular atrophy. Other illnesses may present in a similar fashion. The absence of a testicle in the scrotum may also be due to an undescended testicle that remains in the abdominal cavity’.

C.3.

[diš n]a šir-*šú mun-ga* dab If a man’s testicle is affected by stiffness.

Incipit	IX. iv 19’
No. of recipes	1 (iv 19’)

See Scurlock – Andersen 2005: 114, who argued that the stiffness of a man’s testicle ‘suggests that there is some abnormal mass in the scrotum. A fluid-filled sack (hydrocele) within the scrotum is a common, benign condition. They are usually painless and generally cause no particular problem. Other masses such as tumors and abscesses may occur within the scrotum’.

C.4.

diš na šir-*šú* lugud *ú-kal* If a man’s testicle contains pus.

Incipit	IX. iv 20’
No. of recipes	1 (iv 20’)

C.5.

šum$_4$*-ma* [… t]i *nap-šal-ti* nu-⌜du$_8$⌝ *šum*$_4$*-ma* šir 1[5 … *ina*] maš-sìla 150-*šú* kúm [gar]-*an* <*šum*$_4$*-ma*> šir 15[0 … *ina*] maš-sìla 15-*šú* k[úm gar]-*an*

If […] salve is not *released*. If his right testicle […] heat and place […] on his left shoulder. If his left testicle […] heat and place […] on his right shoulder.

Incipit	IX. iv 28'-30'
No. of recipes	-

C.6.

[diš na] *mi-na-tu-šú* dub-dub á^{II}-*šú kim-ṣa-a-šú ù bir-ka-šú* [gu$_7$.meš *ana* ti-*šú*]

If a man's limbs are constantly flaccid, his arms, his shins and his knees hurt, in order to cure him.

Incipit	II. i 1
No. of recipes	1 (i 2)

C.7.

diš na murub$_4$.meš-*šú lu ina* gin-*šú lu ina* ki-⌜ná⌝-*šú* tag-ga.meš-*šú* g[iš-*šú* …][t]áb-táb-*su ú-ha-ma-at-su i-tar-rak-šú* ⌜egir⌝ kàš.meš-*šú iš*-[*ti-nu* …]

If a man's groin causes him pain either when he walks or (lies) on his bed, his penis […] stings him, burns him (and) throbs (lit. 'beat, hit'; see Geller 2005: 49 n. 1); after he urinates, […]

Incipit	II. ii 22-23
No. of recipes	1$^{+(?)}$ (ii 24-28)

On the translation see Scurlock – Andersen 2005: 108.

C.8.

diš na *mi-qit ir-ri* tuku

If a man has the symptom of 'collapse of the intestines'.

Incipit	IX. iv 21'
No. of recipes	2 (iv. 21'-25')

C.9.

diš lú-tur *šá* mí nu-zu *mi-qit ir-ri* tuku

If a virgin boy has the symptom of 'collapse of the intestines'.

Incipit	IX. iv 26'
No. of recipes	1 (iv 26'-27')

On the incipit further see Geller 2002: 105.

C.10.

diš na giš sìg-sìg-*šú i-te-e*[*b*]-*b*i ki-a-*šú* murub$_4$.meš-*šú* gu$_7$.meš-*šú šá* na-bi ⌜x x⌝ *ki-mil-ti* ^{d}utu ugu-*šú* gál-*ši*

'If a person's penis continually gives him jabbing pain, he gets up (to urinate and) with his water his groin hurts, that person […] the anger of Samas is upon him.'

Incipit	STT 95 i 42-43
No. of recipes	1 (i 43-44)

This incipit was discussed in Scurlock – Andersen 2005: 108.

C.11. Incipits in fragmentary passages

C.11.1.

[diš na … mú-m]ú-*ma* šà-*šú ṣa-bit-m*[*a* …]

If a man's […] is swollen, and his innards are affected […]

Incipit	II.2. 9'
No. of recipes	$1^{+(?)}$ (10'-12')

C.11.2.

diš na *kis* šà-*šú* sì[g-*su* …] If a man's belly has been struck by colic […]

Incipit	II.3. 9'
No. of recipes	1 (9'-10')

C.11.3.

diš na gìš-*šú* kúm […] ud-da sá-sá […]

If a man's penis is hot […] he is overcome by 'sun-fever' […]

Incipit	IV. ii 6'-7'
No. of recipes	?

C.11.4.

diš na $murub_4^{II}$-*šú* gig-*m*[*a* …] If a man is ill in his groin […]

Incipit	IV. ii 15'
No. of recipes	1 (ii 16')

C.11.5.

diš na d[ab éllag-*su* …] lá gig *lu* kàš […] If a man is affected, his kidney […]…ill or urine […]

Incipit	IX. i 1-2
No. of recipes	?

C.11.6.$^{\Delta}$

ana im *ka-li-t*[*e ka-le-e* …] In order to restrain 'flatulence' of the kidney […]

Text	IX. iv 6'-9'

D. 'Stones'

D.1.

[diš] ⌜na x $NA^{?}$ $ŠA^{?}$ $MU^{?}$⌝ […] [… k]àš-*šú* na_4 šub-*a* na-bi […]

If a man […], his urine discharges 'stone' (i.e., calculus): that man […]

Incipit	I. ii 1'	III. iii 15'-16'	XV i 18'$^{(?)}$	
No. of recipes	6 (ii 2'-24')	2 (iii 8'-14', 16'-18')	1 (i 18'-22')	∑: 6

ABRASIVE STONE: Recipe 2: ^{na4}ú-níg-bùr-bùr (I. ii 5'). Recipe 4: níg-bùr-bùr (I. ii 16').

Recipe 1: I. ii 2'-4' // III. iii 16'-18'. Recipe 2: I. ii 5'-12' // III. iii 8'-14' // XV i 18'-22'.

The passage in text XV has minor differences only (on the *Partitur* see Geller 2005: 34, 60, 118).

The fifth recipe appearing in text I is extended by the sentence '(and) his urine (also) smells' (ii 19': ki 5-*ma ù* kàš-*šú ú-ṣa-nu*; further see Scurlock – Andersen 2005: 103, 104).

D.2.

diš na na_4 gig — If a man suffers from 'stone' (i.e., calculus).

Incipit	I. ii 25'	VI. obv. 1'(?)	
No. of recipes	11 (ii 25'-iv 2)	3 (obv. 2'-12')	∑: 12

ABRASIVE STONE: Recipe 9: ú-níg-bùr-bùr (I. iii 19). Recipe 10: ú-níg-bùr-bùr (I. iii 26) // ^{na4}níg-bùr-bùr (VI. obv. 7').

Recipe 1: I. ii 26'-31' // VI. obv. 2'-4'. Recipe 10: I. iii 21-32 // VI. obv. 5'-9'.

The third recipe of VI (obv. 10'-12') is mentioned by another text (II. i 10-12) as well, where it is in connection with 'stricture' disease; see no. B.1. On the restoration of the first line of text VI see Geller 2005: 77 n. 1.

D.3.

diš na *lu* na_4 *mu-ṣa* gig […] *lu* si tùm […]

If a man either suffers from 'stone' (i.e., calculus), (or?) *mūṣu* disease […], … […]

Incipit	IX. ii 39'-40'	XI. obv. 6'(?)	
No. of recipes	1 (ii 41'-43')	1 (obv. 6'-8')	∑: 2

ABRASIVE STONE: ú-⌜níg-bùr-bùr⌝ (IX ii 41'); ⌜ú⌝-níg-bùr-bùr (XI obv. 6').

It must be emphasised that the incipit in text XI obv. 6' is missing and it has been reconstructed on the basis of the similarities between the recipes recorded by the two texts (Geller 2005: 98 n. 2).

D.4.

[diš na … g]ig-*a* na_4 gig-*ma la* ⌜*ṣa-a*⌝-[*du* …] [… *ip*]-*pu-uš ina* šu ^{lú}a-zu gur-*ti* [gig tuku-*ši*]

[If a man's …] are ill and (he) suffers from 'stone' (i.e., calculus) and (it) is not moving […]. [The shaft of his penis(?) has] expanded (i.e., it is tumescent), [he has a relapse] while in the care of the 'physician'.

Incipit	XIV. 3'-4'
No. of recipes	1 (5'-7')

Although this incipit does mention the calculus, it is not a kidney disease text; see Geller 2005: 116.

D.5. Incipits in fragmentary passages

D.5.1.

[diš na *i-te-ni*]*k-ki-ik* na-bi na_4 *šá-hi-ih-ta* [gig …]

If a man constantly scratches (his penis?) that man suffers from *dissolving* 'stone' (i.e., calculus) […]

Incipit	XII. 7'
No. of recipes	$1^{+(?)}$ (8')

It is worth mentioning that Thompson 1936: 337 read [… *is-sa*]-*ki-ik* instead of [… *i-te-ni*]-*ki-ik* and translated this line as 'When a man's urethra is stopped up (…)'.

D.5.2.

[diš n]a [n]a_4 gig […] — If a man suffers from 'stone' (i.e., calculus) […]

Incipit	XIII. obv. 6'
No. of recipes	1 (7')

D.5.3.

diš na na_4 *š*[*a*]*h-hi-hu* […] — If a man [suffers from] *dissolving* 'stone' (i.e., calculus) […]

Incipit	XIII. obv. 8'
No. of recipes	1 (9')

E. 'If a man frequently gets up'

E.1.

diš na *ša-a-ši-tu-nam un-nu-ut ù ma-gal* zi-zi-*bi*

If a man is weakened by *šāšītuna* disease and frequently gets up.

Incipit	I. i 14'
No. of recipes	2 (i 15'-22')

E.2.

diš [n]a *ša-a-ši-ta-na un-nu-un-ta u* ⌜*ma*⌝*-gal* zi-zi-*bi* ^{uzu}bun-*šu he-sa-a*[*t*] na-bi ud-da kur-*id*

If a man is weakened by *šāšītuna* disease and frequently gets up. His bladder is swollen: that man is overcome by 'sun-fever'.

Incipit	III. ii 15'-17'
No. of recipes	1 (ii 17'-20')

E.3.

diš na *ana* kàš-*šú ma-gal* zi.meš — If a man constantly gets up to (pass) his urine.

Incipit	XVII. v 15	VII. rev. 8'	
No. of recipes	1 (v 16-20)	1 (rev. 6'-7', 9')	∑: 2

See the translation of Scurlock – Andersen 2005: 111 'If a person continually has an erection when he tries to urinate'.

E.4.

[diš na] ⌜*ša*⌝ a.meš nag *u ma-gal* zi.meš-⌜ma⌝ egir-*šú* t[i]

If a man who drinks water and (for this reason) often gets up (to urinate): later on he will recover.

Incipit	VI. obv. 13'
No. of recipes	-

E.5.$^{\Delta}$

5 ú *ma-gal* zi.meš — Five drugs (for if a man) constantly gets up.

Passage	XVII v 24	BAM 159 i 14	
No. of recipes	v 21-25	i 12-14	∑: 1

The passage was identified by Scurlock – Andersen 2005: 700 n. 75.

F. 'Blasted by wind'

F.1.

diš na [gì]š-*šú* im *iš-biṭ* […] — If a man's penis is blasted by wind […]

Incipit	IV. ii 8'
No. of recipes	2 (ii 9'-10')

F.2.

diš na gìš-*šú* im *iš-biṭ* […] u_4-bú-bú-ul diri ⌜x⌝ […]

If a man's penis is blasted by wind […] is full of pustules.

Incipit	IV. ii 11'-12'
No. of recipes	1 (ii 13'-14')

G. Miscellaneous

G.1. Many diseases and symptoms together

G.1.1.

[*šum*$_4$-*ma*] kàš.meš-*šú* gim kàš anše na-bi *mu-ṣa* gi[g]
[*šum*$_4$-*ma*] kàš.meš-*šú* gim *šur-šum-me* kaš na-bi *mu-ṣa* gi[g]
[*šum*$_4$-*ma*] kàš.meš-*šú* gim *šur-šum-me* geštin na-bi *mu-ṣa* gi[g]
[*šum*$_4$-*ma*] kàš.meš-*šú* gim še-gín *he-li-ti* na-bi *mu-ṣa* gig
šum$_4$-*ma* kàš.meš-*šú* gim a.meš gazi^{sar} na-bi ud-d[a kur-*id*]
šum$_4$-*ma* kàš-*šú* sig$_7$ <na-bi> *hi-niq-ti* murub$_4$ [gig]
šum$_4$-*ma* kàš-*šú* babbar-*ma e-ba-a* na-bi na$_4$ *šá-hi-h*[*u* gig]
šum$_4$-*ma* kàš-*šú* gim $^{na4\ (var.\ kuš)}$du$_8$-ši-a na-bi na$_4$ g[ig]
šum$_4$-*ma* kàš-*šú* gim *šá gi-na-a* murub$_4$.meš-*šú u* sag šà-*šú* gu$_7$-[*šú*] na-bi *hi-niq-ti* bun (var. dúr) gig

If (a man's) urine is like the urine of a donkey: that man is ill with *mūṣu* disease. If (a man's) urine is like beer dregs: that man is ill with *mūṣu* disease. If (a man's) urine is like wine dregs: that man is ill with *mūṣu* disease. If (a man's) urine is like light-coloured paint: that man is ill with *mūṣu* disease. If (a man's) urine is like the juice of the *kasû*-plant: that man is overcome by 'sun-fever'. If (a man's) urine is green/yellow: that man suffers from 'stricture of the groin'. If (a man's) urine is white and thick: that man suffers from *dissolving* 'stone' (i.e., calculus). If (a man's) urine is like *dušû* stone (var. leather): that man suffers from 'stone' (i.e., calculus). If (a man's) urine is like normal, but his groin and epigastrium hurt: that man suffers from 'stricture of the bladder' (var. rectum).

Incipit	IV. i 13'-16' (incipits ll. 1-4)	V. 1-10	VIII. obv. 4-5 (incipit l. 2)	IX. ii 20'$^{(?)}$-30'	
No. of recipes	-	1 (11-23)	1 (obv. 6)	1 (ii 31'-38')	∑: 2

ABRASIVE STONE: ú-níg-bùr-bùr (V. 14) // ^{na4}ú-níg-bùr-bùr (IX. ii 33') // ^{na4}ú-níg-bùr-bùr (BAM 430 iv 36', Geller 2005: ms. NN); ú-níg-sù-s[ù] (V. 13) // [$^{na4(?)}$ú-níg-sù-sù] (IX. ii 32') // [$^{na4(?)}$ú-níg-s]ù-sù (BAM 430 iv 37').

It is worth mentioning, moreover, that the parallel passage in text XVII (iv 11'-12') contains the following expressions: ú-níg-sù-sù, ^{na4}ú-níg-bùr-bùr

V 11-23 // IX ii 31'-38'.

The reconstruction of IX ii 20'-23' is based on Geller 2005: 94; further see the *Partitur* in ibid. p. 72.

The translation 'light-coloured paint' (še-gín *he-li-ti*) follows CAD Š/III s.v. *šimtu* 1c.

The yellow/green urine was interpreted by Scurlock – Andersen 2005: 99 as 'Bile byproducts in urine due to biliary tract obstruction or severe liver disease will produce this color. (…) Urinary tract infection may occasionally cause green-colored urine'.

According to Scurlock – Andersen 2005: 101 '*Dūšu* leather / stone: There are two clues in the following quote. The patient was observed to have stones, and the urine or the stones in it have the appearance of *dūšu* stones or the similarly colored tanned leather. The color of tanned leather is orange / brown, the color of uric acid stones in the presence of uracil. Patients with gout commonly have urinary tract stones of this type of color'.

The last line of the passage was interpreted differently by Scurlock – Andersen 2005: 698 n. 4: 'If his urine is like that of one whose pelvic region and epigastrium continually hurt him, that person (has) the construction of DÚR.GIG (var. is sick with constriction of the urethra)'.

G.1.2.

[*e-nu-m*]*a* diš na *lu-u pàr-dan-nu lu-u š*[*a*]*h-hi-*[*hu*] [*lu-u mu*]-*ṣu lu-u hi-niq-tú* ⌜*lu-u*⌝ dúr gi[g] [*ta*]-*ti-ka-te šá* kàš.meš tuku-*š*[*i*] *lu-u ki-ma sin-niš-ti kak-ku* sìg-*i*[*ṣ*] *lu-u mim-ma mur-ṣu šá-niš-ma la-a* zu-*ú*

When (the following happens): if a man is ill with *pardannu* disease or *šahhihu* disease or *mūṣu* disease or (he suffers from) 'stricture', or (he is ill in his) rectum; he has constantly dribbling urine, or he is like a menstruating woman, or whatever other illnesses which are not recognized.

Incipit	X. rev. 1-5
No. of recipes	1 (rev. 6-14)

Thompson 1936b: 337 read the first line differently: *lu-u* na_4 *dan-nu lu-u šah-hi-hu*, 'Whether it be hard or soluble stone'. Against Thompson's theory of being two types of stone (i.e., hard and soluble) see Powell 1993: 65 who interpreted the word *šahāhu* as 'make (the stone) pass'; further see note 88.

G.2. 'Binding of the head'$^{\Delta}$

17 ú.há níg-lá sag-[ki] Seventeen drugs for 'binding of the head'.

Text	II. ii 4-6

G.3. Only a disease name mentioned

G.3.1. *mūṣu* disease

diš na *mu-ṣa* gig If a man is ill with *mūṣu* disease.

Incipit	XVII. v 3	VII. obv. $1^{(?)}$	VIII. $7^{(?)}$	
No. of recipes	4 (v 3-14)	$3^{+(?)}$ (obv. 1-14)	10 (7-17)	∑: 15

ABRASIVE STONE: Recipe 2 in text VII (obv. 4-8): ú-níg-bùr-bùr, ú-níg-[s]ù-sù (obv. 5).

The reconstruction of the incipit belonging to the texts nos. VII and VIII is based on the fact that the first recipe is duplicated in all three texts: VII obv. 1-3 // VIII 7 // XVII v 3-6 (Geller 2005: 80-81, 84-85). The remaining recipes are not duplicates.

G.3.2. *mūṣu* disease

[diš na …] *mu-ṣa* gig *ana* ti-*šú* If a man […] is ill with *mūṣu* in order to cure him

Incipit	XXI. 1
No. of recipes	$1^{+(?)}$

G.3.3. *šimertu* disease$^{\Delta}$

[*ana š*]*i-me-er-te ka-li-te š*[*u-ṣe-e* lú ti-la] To rid a healthy man of *šimertu* of the kidneys.

Text	IX. iv 10'-14'

On the reconstruction of the second half of the line see Geller 2005: 100 (on the basis of mss. AAA [= BAM 171 44'-48'] and BBB [= BAM 158 iv 26-31]).

H. A rectal disease text

diš na *mi-na-tu-šú* dub-dub gaba-*su u* sa-sal.meš-*šú* gu_7.meš-*šú* á.II-*šú k*[*im-ṣa-a-šú u bir-ka-šú*] gu_7.meš-*šú* éllag *bir-ki-šú lu šá* 15 *lu šá* 150 sìg-*su-ma ina muš-tin*-[*ni-šú* múd *ú-kal-lam*] na-bi *hi-niq-ti* dúr gig

If a man's limbs are constantly flaccid and his chest and back hurt, his arms, his shins and his knees (also) hurt, his right and left testicle aches, and he shows blood in his urethra: that man suffers from 'stricture of the diseased rectum'.

Incipit	XVIII rev. iii 14'-16'	XIX -1'-2'	XX obv. 1-4
No. of recipes	$3^{(?)}$ (rev. iii 16'-31')	1 (3'-9')	1 (obv. 4-7)

ABRASIVE STONE: Recipe 1: ú-níg-bùr-bùr (XVIII rev. iii 17') // ^{na4}ú-níg-bùr-bùr (XVII vi 10) // ú-níg-bùr-bùr (BAM 165 ii' 19'). Recipe $2^{(?)}$: ú-níg-sì-sì; ú-níg-bùr-bùr (XVIII rev. iii 21').

The plants and stones mentioned in text XVIII are also enumerated in the texts no. XVII (vi 7-21) // BAM 165 (ii' 15'-24'; see Geller 2005: no. 18 ms. S_1) // BAM 431 (v 11'-25'; see ibid. no. 18 ms. MM) among those drugs that are used for éllag gig, i.e., 'sick kidney' (Geller 2005: 5, 15). On the other hand, the texts XIX and XX list an entirely different set of drugs.

The incipit of XIX (-1'-2') is reconstructed on the basis of Geller 2005: 168.

The translation of Scurlock – Andersen 2005: 101-102, 109-110 is different at some points: the verb dub-dub has been translated as 'tense' instead of 'flaccid', and the expression éllag *birkīšu* has been interpreted as 'loin' rather than 'testicle' (further see ibid. p. 698 n. 18).

Bibliography

Adamson, P. B.

1979 "Anatomical and Pathological Terms in Akkadian, Part II", *JRAS*: 2-8.

Al-Rawi, F. N. H. – Black, J. A.

1983 "The Jewels of Adad", *Sumer* 39: 137-143.

Biggs, R. D.

1967 *ŠÀ.ZI.GA: Ancient Mesopotamian Potency Incantations,* (TCS 2), New York: Locust Valley.

Caplice, R.

1970 "Namburbi Texts in the British Museum", *Or NS* 39: 118-124.

Civil, M.

2006 "The Song of the Millstone", in: Olmo Lete, G. del *et al.*, (eds.), *Šapal tibnim mû illakū. Studies Presented to Joaquín Sanmartín on the Occasion of His 65th Birthday,* (AuOr, Supplementa, 22), Sabadell: Editorial AUSA, 121-138.

Degreave, A.

1996 "Mesopotamia and its Northern Neighbours. Part I", *Akkadica* 99-100: 15-35.

Durand, J.-M.

1983 "Relectures d'ARMT VIII, II: ARMT VIII, 89 et le travail du métal à Mari", *M.A.R.I. 2*: 123-139.

1987 "Documents pour l'histoire du royaume de Haute-Mésopotamie, I, *M.A.R.I.* 5: 155-198.

Falkenstein, A.

1950 "Ibbīsîn-Išbi'erra", *ZA* 49: 59-79.

Farber, W.

1989 *Schlaf, Kindchen, Schlaf! Mesopotamische Baby-Beschwörungen und –Rituale*, (MC 2), Winona Lake, Indiana: Eisenbrauns.

Finkel, I. L.

2000 "On Late Babylonian Medical Training", in: George, A. R. *et al.*, (eds.), *Wisdom, Gods and Literature. Studies in Assyriology in Honour of W. G. Lambert*, Winona Lake, Indiana: Eisenbrauns, 137-223.

Geller, M. J.

1985 "Notes on Lugale", *BSOAS* 48: 215-223.

1990 "Astronomy and Authorship", *BSOAS* 53: 209-213.

2002 "Hippocrates, Galen and the Jews: Renal Medicine in the Talmud", *American Journal of Nephrology*: 101-106.

2005 *Renal and Rectal Disease Texts,* (BAM 7), Berlin – New York: Walter de Gruyter.

2005b "Recensiones: Stefano Seminara, La versione accadica del Lugal-e", *Orientalia* 74: 122-128.

2010 *Ancient Babylonian Medicine, Theory and Praxis*, Wiley-Blackwell.

Geller, M. J. – Cohen, S. L.

1995 "Kidney and Urinary Tract Disease in Ancient Babylonia, with Translations of the Cuneiform Sources", *Kidney International* 47: 1811-1815.

Heimpel, W. – Gorelick, L. – Gwinnett, J. A.

1988 "Philological and Archaeological Evidence for the Use of Emery in the Bronze Age Near East", *JCS* 40: 195-210.

Hrůša, I.

2010 *Die akkadische Synonymenliste malku = šarru. Eine Textedition mit Übersetzung und Kommentar,* (AOAT 50) Münster: Ugarit-Verlag.

Jacobsen, Th.

1987 *The Harps that Once… Sumerian Poetry in Translation*, New Haven – London: Yale University Press.

Jakob, S.

2003 *Mittelassyrische Verwaltung und Sozialstruktur, Untersuchungen*, (CM 19), Leiden – Boston: Brill – Styx.

Kinnier Wilson, J. V.

1968 "Gleanings from the Iraq Medical Journal", *JNES* 27: 243-247.

Kramer S. N.

1985 "Reviews of Books: LUGAL UD ME-LÁM-bi NIR-ĞÁL: Texte, Traduction et Introduction. By J. van Dijk. Tome I: Introduction, Texte Composite, Traduction. Pp. x + 147. Tome II: Introduction à la Reconstruction du Texte, Inventaire des Textes, Partition, Copies des Originaux. Pp. 191 + 88 plates. Leiden: Brill. 1983", *JAOS* 105: 135-139.

Lambert, W. G.

1980 "The Twenty-One 'Poultices'", *AnSt* 30: 77-83.

Lauinger, J.

2012 "Esarhaddon's Succession Treaty at Tell Tayinat: Text and Commentary", *JCS* 64: 87-125.

Luckenbill, D. D.

1924 *The Annals of Sennacherib*, (OIP 2), Chicago: The University of Chicago Press.

Meissner, B. E.

1922 "Lexikographische Studien", *OLZ* 25/6: 241-247.

Moorey, P. R. S.

1994 *Ancient Mesopotamian Materials and Industries, The Archaeological Evidence,* Oxford: Clarendon Press.

Pedersén, O.

1985-1986 *Archives and Libraries in the City of Assur, A Survey of the Material from the German Excavations,* Part I-II, (Studia Semitica Upsaliensia, 6), Uppsala: Almqvist & Wiksell.

Postgate, J. N.

1997 "Mesopotamian Petrology: Stages in the Classification of the Material Word", *CAJ* 7: 205-224.

Powell, M. A.

1993 "Drugs and Pharmaceuticals in Ancient Mesopotamia", in: Jacob, I. *et al.*, (eds.), *The Healing Past. Pharmaceuticals in the Biblical and Rabbinic World*, Leiden: Brill.

Reiner, E.

1995 *Astral Magic in Babylonia,* (TAPS 85/4), Philadelphia: The American Philosophical Society.

Ritter, E. K.

1965 "Magical-Expert (= Āšipu) and Physician (Asû), Notes on Two Complementary Professions in Babylonian Medicine", in: Güterbock H. D. *et al.*, (eds.), *Studies in Honor of Benno Landsberger on his Seventy-Fifth Birthday*, (AS 16), Chicago: The University of Chicago Press, 299-321.

Salonen, A.

1965 *Die Hausgeräte der alten Mesopotamier nach sumerisch-akkadischen Quellen, Eine lexikalische und kulturgeschichtliche Untersuchung*, Teil I, Helsinki: Soumalainen Tiedeakatemia.

Schuster-Brandis, A.

2003 "Tupfen und Streifen. Erkenntnisse zur Identifikation von Steinnamen aus der Serie *abnu šikinšu* 'Der Stein dessen Gestaltung…' ", *AoF* 30: 256-268.

2008 *Steine als Schutz- und Heilmittel. Untersuchung zu ihrer Verwendung in der Beschwörungskunst Mesopotamiens im 1. Jt. v. Chr.,* (AOAT 46), Münster: Ugarit-Verlag.

Scurlock, J. A. – Andersen, B. R.

2005 *Diagnoses in Assyrian and Babylonian Medicine. Ancient Sources, Translations, and Modern Analyses*, Urbana – Chicago: University of Illinois Press.

Selz, G. J.

2001 "Nur ein Stein", in: Richter, T. *et al.*, (eds.), *Kulturgeschichten. Altorientalische Studien für Volkert Haas zum 65. Geburtstag*, Saarbrücken: Saarbrücker Druckerei und Verlag, 383-393.

Seminara, S.

2000 "Gli dèi Enli e Ninurta nel mito sumerico *Lugal-e*. Politiche religiose, dibattito teologico e «riscrittura» dei «testi sacri» nell'antica Mesopotamia", *Atti della Accademia nazionale dei Lincei. Rendiconti Classe di scienze morali storiche e filologiche* XI/3: 443-468.

2001 *La versione accadica del Lugal-e: La tecnica babilonese della traduzione dal sumerico e le sue 'regole'*, (Materiali per il vocabolario sumerico, 8), Roma: Università degli Studi "La Sapienza", Dipartimento di Studi Orientali (*non vidi*).

Steinkeller, P.

1987 "The Stone *pirig-gùn*", *ZA* 77: 92-95.

Stol, M.

1979 *On Trees, Mountains, and Millstones in the Ancient Near East,* Leiden: Ex Oriente Lux.

2004 "An Assyriologist Reads Hippocrates", in: Horstmanshoff, H. F. J. *et al*., (eds.), *Magic and Rationality in Ancient Near Eastern and Graeco-Roman Medicine,* Leiden: Brill, 63-79.

Thompson, R. C.

1934 "Assyrian Prescriptions for Diseases of the Urine", *Babyloniaca* 14: 57-151.

1936a *A Dictionary of Assyrian Chemistry and Geology*, Oxford: Clarendon Press.

1936b "Assyrian Prescriptions for Stone in the Kidneys, for the "middle", and for Pneumonia", *AfO* 11: 336-340.

van Dijk, J. J. A.

1983 *LUGAL UD ME-LÁM.BI NIR-GÁL. Le récit épique et didactique des Travaux de Ninurta, du Déluge et de la Nouvelle Création,* Tome I-II, Leiden: Brill.

Weidner, E.

1953 "Die Bibliothek Tiglatpilesers I", *AfO* 16: 197-215.

Yalvaç, K.

1965 "Eine Liste von Amulettsteinen im Museum zu Istanbul", in: Güterbock, H. D. *et al.*, (eds.), *Studies in Honor of Benno Landsberger on his Seventy-Fifth Birthday*, (AS 16), Chicago: The University of Chicago Press, 329-336.

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