A Dictionary of
ASSYRIAN BOTANY

By the late
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LONDON
THE BRITISH ACADEMY
BURLINGTON GARDENS, W.1
1949
PREFACE

It is now eight years since my husband died, leaving this, his last work, almost ready for publication. The interval is long, but that is due to the war and the conditions which followed it. Indeed, publication is only now made possible by the efforts of those who have given to it time which I know could ill be spared, and to the generous grants towards the cost of production given by the following societies: The British Academy, under the auspices of which the work finally appears; the British School of Archaeology in Iraq (Gertrude Bell Memorial); the Royal Asiatic Society; the Royal Society; and Merton College, Oxford. My warmest thanks are due to them all, and also to Mr. D. J. Wiseman, who has helped in the correction of the proofs, and has borne most of the burden of compiling the indices, which are an essential part of the book. But most of all am I indebted to Mr. C. J. Gadd, the Keeper of the Egyptian and Assyrian Department of the British Museum, but for whose zealous help and unflagging care the book could not have appeared. He has edited most carefully the whole of the manuscript, thus making it possible for my husband’s ardent wish (to have any unfinished work published), to be fulfilled. I know that there is no one to whom the author would have owed this great debt of gratitude more gladly than to his old friend and colleague. I should like to add a personal note of gratitude to Mr. Gadd for all his work and kindness in bringing the book into being.

BARBARA CAMPBELL THOMPSON.

BOARS HILL, OXFORD.

1949.
INTRODUCTORY NOTE

The method used in this Dictionary for rehearsing and identifying the names of plants known to the Assyrians is, first, to quote the passages where the respective words occur in the bilingual or explanatory botanical lists, and then to seek the identity of the plant not only from the data of these lists but by the aid of other cuneiform texts, principally the medical prescriptions and magical formulæ. Philological evidence is then adduced, and often ancient, medieval, or modern science and practices in the Oriental lands are compared. This method has already been made familiar by earlier works from the same hand.

The author of this book left a number of sheets containing various portions of material for writing what he doubtless meant to be a full Introduction after the manner of his other Dictionary. As well as the Introduction there was to be a list of the plant-names according to the order in which they are placed by the botanical texts, and a table indicating the Kuyunjik tablets and other original authorities which attest them; also a similar list and table for the plants in the so-called Vade Mecum. One or two special transcripts were probably not designed for publication. The material for the Introduction is too scanty and incidental to give any idea of what the author intended to be its scope, while the tables are incomplete and do not make sufficiently clear how they were to be arranged. The following note, based upon the aforesaid manuscript, is confined to what seemed the most important subject, viz. the cuneiform texts upon which this study is based.

The botanical lists are first to be considered, and the following are quoted throughout:—

_Cuneiform Texts . . . in the British Museum_ (abbr. CT.), _part XIV, pl. 10, 18 ff., and part XXXVII, pl. 28–32 (tablet B.M. no. 100860). The reference “Pl.” alone means Plate in CT. xiv, as the principal authority.


The Berlin tablet _VAT_ 9000. T. J. Meek, in _Revue d’Assyriologie_, xvii, 161 (tablet Sm. 1701).

Two classes of texts may be distinguished, (A) the plant-lists proper, i.e. those which consist of double columns, the second (right-hand) one of which contains equivalents or definitions of the plant-names written in the first (left-hand) column, and (B) the lists to which the

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1. The Assyrian Herbal, especially Introduction, §§ 2, 4, 5, 6, _A Dictionary of Assyrian Chemistry and Geology_, Introduction, p. xvi ff.

2. Believed to be unpublished; the author's knowledge of it was apparently obtained from a copy made by Dr. H. Pick and quoted by permission of the late Professor H. Eboloff. What little else can be said concerning this text may be gathered from notes in _JRAS_, 1934, 781, _DACG_. p. 227, and _AFO_. xiii, 324, n. 3.
As is well known, it was the practice of the Assyrian scribes to give a title to each work which they copied for the Royal Library at Nineveh, which title usually consisted of the first few words of the composition. When the text was of such length as to occupy more than one tablet these were numbered consecutively as tablets of the work so named. The plant-lists proper belonged, at least in part, to a series of tablets called, from its first line, "URU-AN-NA: šammal-ta-kal. This is attested by several fragmentary colophons. The only tablet clearly numbered is said to be VAT. 9000, which is the second of the series. K. 267 (CT. xiv, 22) may belong to the first, but this is not certain. K. 4345 (ibid., pl. 28) is part of the second, and there are two fragments of "extract" tablets (nisû), namely S. 547 (ibid., pl. 26) which is from the tenth extract, and K. 4373 (pl. 9) from the twelfth. In each of these four places of CT. xiv there are remains of a long descriptive colophon appended to this work by order of Ashurbanipal himself. The text remains incomplete and the arrangement of the fragments is not certain, but its contents are interesting:

\[\begin{align*}
&X.U \text{nis-}bu \text{ [or, } tuppuna \text{ X}^\text{vii} \text{]} \text{ URU-AN-NA : } šām\text{mal-ta-kal} \\
&\text{[ \ldots \ldots \ldots \ldots sa(?) ]-a-ti } u \text{ EME-Bûr}^\text{viii} \\
&\text{ša ul-tu ul-la sa-ra-a la šub-tu} \\
&\text{šamme}^\text{vii} \text{ gab-ri e \ldots \ldots } e \text{ šamme}^\text{vii} \text{ ina lib-bi sa(?)-[di-ri ?]} \\
&\text{la i-šu-[ti \ldots \ldots s]a-di-ru} \\
&m\text{-a-aššur-ban-apli šur} \\
&\text{šamme}^\text{vii} \text{ gab-ri e ?} \\
&\text{ù šamme}^\text{vii} \text{ ša a-di} \\
&\text{ul-tu lib-bi} \\
&rēš īuppânu^\text{vii} \text{ labirum}^\text{vii} \\
&\text{kina mah-rim-ma sa-dir-šu-nu} \\
&\text{ù ša } \text{ GA}L : šām \\
&\text{E-MU-Bûr : šām} \\
&\text{Na-ra-AM-BI : šām ha-am-b[a-qu]-qu} \\
&\text{ù a-di MUD-UR-MAH : } me^\text{vii} \text{ ša lib-bi } \text{ub-bi-ni} \\
&\text{ina sa-di-ri šum-šu-nu } u \text{ im (var. } \text{am} \text{-bi-ma} \\
&\text{ina mubbī īuppâni}^\text{vii} \text{ u-še-li} \\
\end{align*}\]

1 JRAS. 1934, 771 ff., and, on the distinction of the two kinds of text, see AH. Introd. §6.
2 In AF0. xiii, 324, n. 3, Weidner reckons also K. 8846 + Rm. 316 (CT. xiv, pl. 31) and 82-5-22, 578 (pl. 40) to the second Tablet of this series, because of duplicate lines in them and in VAT. 9000. The author has noticed these and other duplicates at several places in the text, but it is not clear whether he drew a similar conclusion (see also AH. Introd. xxv and xxvii). It should be noticed that the name of the series (according to K. 267, re-examined, and as the author read in AH. 199 as well as here, although he was inconsistent in DACG. 227) is "URU-AN-NA not "ZU-AN-NA; this is another instance of the ambiguity which Weidner has himself observed in AF0. xiv, 340, n. 3.
3 K. 4373 begins at LITBA. no. 88, col. 2, 79, where it is preceded by a section (col. 2, 40-78) devoted to minerals. Before this section all the text is of the V. M. type, and this may be the third tablet of the URU-AN-NA series (with which the author believed that the series ended).
4 The colophon of VAT. 9000, an Ashur tablet, is said to be different.
5 CT. xiv, 9 reads -i and this seems to stand undeniably in the original K. 4373 (collated), but it must be a scribal error.
a-me-ru u-a i-i-pil ki-i ša d'-nabu iiddinu-su lijpušu₂ (var. li-pu-uš) ě-gal m'-aššur-ban-apli šar kiššati šar em'ta-aššur šu a-na d'-aššur u' d'-nin-lil laḫ-la₁
čulul-la la malšat d'-mu-duq-ga-za₁-a₁

nth excerpt (or, nth tablet) of ě'ūru-an-na : šam₄mal-ta-kal

lists (?) ² and glosses (?) ³ which from of old had not taken

plants (which) had not

sections (?) : Ashur-bani-pal king [of Assyria,

altered this (?), and] plants copied from (?)

and plants which including

out of

the chief of the old tablets

as formerly their sections (?),

and of (the series) ě'gal : šam ²

ě'ēmu-du₄ur : šam

ě'ha-ra-am-bi ; šam₃ha-am-ba-qu-gu,⁵ and

including múd-ur-ma₄ : me₃₃Š₄ ša li-bi₁ ḫbi-ni ⁷ ; in the sections their names he (var. "I") did not (only) rehearse (but) caused them to be registered upon tablets. Let him who sees them not mishandle⁸ them, (but) do as the god Nabu has granted him⁹ Palace of Ashur-bani-pal, king of all, king of Assyria, who trusts in Ashur and Ninlil : thy virtue is unrivalled, O Muduggasa.

The most interesting fact obtained from this colophon is that the learned monarch claims to have compiled his dictionary of plants from at least four pre-existing works of which he quotes the titles, i.e. the first lines, and he seems to complain that these sources were wanting in logical order, and failed to give proper explanations of difficult names, both of which defects he corrected as the texts were read out to him. Even without this information it would be natural to suppose that ě'ūru-an-na : šam₄mal-ta-kal was only one among other series (or sub-series) represented in our sources, for there is no visible explanation why a work on botany should begin with the malkkal rather than any other particular plant. And in fact Rm. ii, 41 (CT. xiv, pl. 40) proves that there was a tablet beginning, as one would expect the whole series to begin logically, with the simple ša : šam-mu. Unfortunately, the significant part of the colophon to this has disappeared. If ě'ūru-an-na : šam₄mal-ta-kal was a new series formed by Ashur-bani-pal's editorial labours, we can only say that his reason for beginning it with that particular plant remains obscure, since it cannot be an Assyrian sub-division corresponding with Section II of the present work (Alkalis and Soapworts), for plants of very different kinds appear in it.

¹ Another name of the god Nabu, patron of learning.
² See last on this technical word of the schools A. Ungnad in AJE, xiv, 273.
³ "Solutions of tongues," that is, what are now called syllabaries. "Tongues" used partly in the Aristotelian sense, Poetics, 1457; 3-6; see also A. Oppenheim in AJE, xii, 238, n. 11.
⁴ ga-m₄₄m₃, uncertain, not very probably connected with t₄y₃, "bind," by the author in a medical passage, P.I.S.M., xviii, p. 5, n. 3.
⁵ ṣadīru occurs (reckoning probable restorations) four times in this colophon. This seems to be the likeliest meaning, as another term of the schools : see ZA. N.F. ix, 26.
⁶ See p. 79.
⁷ "Lion's blood : the sap within the tamarisk" : see p. 281.
⁸ For ḫālu see MACO, xi, 46, and xii, 2, p. 32.
⁹ This is, peruse or copy them to the best of his ability.
As touching the other kind of plant-lists, the so-called *Valle Mecum*, there is little to add to the author's published accounts. He discovered only that the *VM*, though apparently based upon the contents and order of the *Turu-an-na* series, does not always adhere to the order of this, and omits various plants there included, because they are not, by their nature, adapted for the uses expressed by the *ina* phrase which is characteristic of the *VM*.

For the Assyrian medical texts the author's own publications should be consulted, especially the preface to his *Assyrian Medical Texts*, the bibliography of his articles in which translations of these texts were printed (see *JRAS*, 1937, p. 431), and his *Dictionary of Assyrian Chemistry and Geology*. Publications of similar material by other scholars are frequently cited in the succeeding pages. The arrangement of medical texts in series by the Assyrian scribes is a subject which has not yet been sufficiently investigated.

Reference to magical and miscellaneous cuneiform texts are made in the course of the work, and need no general remark.

Throughout the following pages there will be found many hundreds of references, especially to passages in published cuneiform texts, but also to the multifarious authorities which must be adduced in every book of this kind. There is evidence in the author's manuscript that he had conscientiously verified almost every one of these references and marked them as correct; and wherever it has been necessary to turn again to the place quoted it has been found almost invariably that the reference was true. But it should be expressly stated that, although as much care as possible has been taken to see that the printer correctly reproduced the manuscript references, the formidable task of re-verifying these could not be undertaken. "Where there is good reason to believe, therefore, that a high degree of accuracy in reference will be found to prevail, it must be expected that human fallibility will sometimes have been betrayed into error among this multitude of details, and apology must be offered in advance if any reader thinks that he ought to have been given the guarantee of a complete revision. But it is hoped that the achievement of correctness will be found so high as to make this requirement seem as needless as it is impracticable.

A mention must be added of the many words quoted for comparison from other languages than Akkadian and Sumerian, in the great majority of instances from the other Semitic languages. Since this Dictionary was designed to be useful to a wider circle than Semitic philologists these words were mostly given by the author in transcription, but without complete consistency either in excluding the original character or in method of transcription. The editor of these pages has endeavoured to secure more uniformity in both of these respects, and desires to express here his great obligation to Dr. A. S. Fulton and to Mr. C. Moss, of the Department of Oriental Printed Books and Manuscripts in the British Museum, who most kindly and diligently revised with him the transcriptions of words in Arabic and in Hebrew and Aramaic respectively. If errors and inconsistencies still exist they must be ascribed to the inadvertence of the editor.
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ABBREVIATIONS

† Indicates that this is not the only drug in the prescription, others being employed with it.

AD. C. M. Doughty, *Arabia Deserta.*
AF. H. Zimmern, *Akkadische Fremdwörter.*
AFO. Archiv für Orientforschung, ed. E. F. Weidner.
AH. R. Campbell Thompson, *The Assyrian Herbal.*
AJSL. American Journal of Semitic Languages.
AKA. Budge and King, *Annals of the Kings of Assyria.*
AM. R. Campbell Thompson, *Assyrian Medical Texts.*
Anp. Ashurbanipal.
Arch. Archaeologia.
Ashurbanipal.
AT. T. G. Pinches, *The Amherst Tablets.*
BA. Beiträge zur Assyriologie.
Bab.-Ass. B. Meissner, *Babylonien und Assyrien.*
BAG. C. Bezold, *Babylonisch-Assyrisches Glossar.*
BBR. H. Zimmern, *Beiträge zur Kenntnis der babylonischen Religion.*
BE. The *Babylonian Expedition of the University of Pennsylvania.*
Beih. E. E. Herzfeld, *Beiblätter zur O.L.Z., II.*
BF'O. E. Boissier, *Flora orientalis.*
BMJ. R. J. Waring, *Bazaar Medicines of India.*
BMM. R. N. Khory, *Bowdler Materia Medica.*
BMP. R. Bentley and H. Trimen, *Medicinal Plants.*
Br. R. Brünnow, *Classified List of Cuneiform Ideographs.*
CPI. G. Watt, *Commercial Products of India.*
CT. Cuneiform Texts from Babylonian tablets, etc., in the British Museum.
DA. A. Boissier, *Documents assyriens relatifs aux présages.*
DACG. R. Campbell Thompson, *Dictionary of Assyrian Chemistry and Geology.*
DB. Dictionary of the *Bible* (a) Smith ; (b) Hastings.
Devils R. Campbell Thompson, *Devils and Evil Spirits of Babylonia.*
Dioscorides ed. Sprengel.
DM. R. Quain, *Dictionary of Medicine, 1883.*
E. E. Ebeling in *Archiv für Geschichte der Medizin.*
EB. *Encyclopaedia Britannica.*
EC. J. C. Booth, *Encyclopaedia of Chemistry.*
FCH. G. M. Crowfoot and L. Baldensperger, *From Cedar to Hyssop.*

I. Low, *Die Flora der Juden*.

Forskål (Pehr), *Flora Aegyptiaco-Arabica*.


A. Temple, *Flowers and Trees of Palestine*.

R. Campbell Thompson, *The Gilgamesh Epic*.

F. Hrozný, *Das Getreide im alten Babylonien*.

C. Virolleaud, in *Comptes-rendus du groupe linguistique d’Études chinois-s Company*.

G. Bentham, *Handbook of the British Flora*.

P. Beilin, *Ein Beitrag zur assyrischen Lexikon*.

H. Leclerc, *Notice des Manuscrits*.

R. Kuchler, *Medizinische und babylonischen Medizin*.

E. Liebesz., *Liber Inscriptionum*.

H. Holma, *Kleine Beiträge zum assyrischen Lexikon*.

F. Küchler, *Beiträge zur kenntnis der Assyrisch-babylonischen Medicin*.

E. Ebeling, *Keilschrifttexte aus Assur religiösen Inhalts*.


R. Campbell Thompson, *Late Babylonian Letters*.

E. Ebeling, *Lieber inschrabef*.

W. T. Fernie, *Herbal Simples*.

L. Pollen, *The Land and the Book*.

R. Ebeling, *Nebukadnezar Briefe*.

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S. Langdon, *Nebukadnezar Königsinschriften*.

E. Strassmaier, *Inscriften von Nabonid*.


Medical texts in cuneiform generally.

*MVAG*.

*Mitteilungen der alltorientalischen Gesellschaft*.

*MAOOG*.

*Mitteilungen der alltorientalischen Gesellschaft*.

*Mat*.

Matouš, *see LTBA*.

*MB*.

Merodach-Baladan III’s garden, CT. xiv, 50.

*ML*.

*Musée du Louvre: Textes cunéiformes*.

*MMAP*.

*Mémoires de la Mission archéologique en Perse*.


*MT*.

Medical texts in cuneiform generally.

*MVAG*.

*Mitteil. der vorderasiatischen Gesellschaft*.

*R. Ebeling, Nebukadnezar Briefe*.

*S. Langdon, Nebukadnezar Königsinschriften*.

J. N. Strassmaier, *Inscriften von Nabonid*.

*NHI, Phay, Natural History, ed. Bostock*.

*Orientalia*.

*Orientalia*.

R. Campbell Thompson, *On the Chemistry of the ancient Assyrians*.

*P. British Pharmacopoeia*.

University of Pennsylvania, Babylonian Expedition.

*Publications of the Babylonian Section of the Uni of Pennsylvania*.

*PC*.

*Penny Cyclopaedia* (about 1859).

R. Campbell Thompson, *The Prisms of Esarhaddon and Ashurbanipal*.

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<td>PSHA.</td>
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<td>R.</td>
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<td>RA.</td>
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<td>Rm.</td>
<td>Rassam tablets of the Kuyunjik Collection in the British Museum.</td>
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<td>RS.</td>
<td><em>Revue Sémittique</em>.</td>
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<td>RT.</td>
<td>Recueil de Travaux relatifs à la philologie et à l’archéologie égyptiennes et assyriennes.</td>
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<td><em>Vade Mecum</em> (see <em>JRAS</em>, 1934, 781).</td>
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<td>Von Opp.</td>
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<td>YOS.</td>
<td>Yale Oriental Series.</td>
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<td>ZA.</td>
<td><em>Zeitschrift für Assyriologie</em>.</td>
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<td>ZDMG.</td>
<td><em>Zeitschrift der deutschen morgenländischen Gesellschaft</em>.</td>
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A—B. GRASS, RUSHERS, REEDS, CONVOLVULI.
C. PLANTAIN.
A. GRASS, RUSHES, REEDS, CONVOLVULI

1. út(sám), sammu, plant, grass, vegetable (and sometimes mineral drug).
2. samšullim, dišá (grass, but with connection with tares, p. 146): samša-šar-gú-la, dišarru (Lolium temulentum L.).
3. samgúgu, umšatu, a rush, but also perhaps specially Rumex, sorrel.
4. samgúgu, šuppatu, a rush (= samurbánu).
5. samgúgu, elpišu, a rush.
6. samgúgu, urbata, rushes generally, but particularly Cyperus esculentus L., the edible rush.
7. samurbánu, Cyperus.
8. samšišušunam, Butomus, esp. umbellatus L.
9. samkungu, samgungu (the gongae of Berosus), Cyperus esculentus L.
10. sammánu (sammáhad(t)ilu), some kind of rush, or word connected therewith.
11. sammánu, ashlu, Carex, reed-grass.
12. samgúgu, kumitu, a rush, or word connected therewith.
13. sammánu, samli-tur, abukatu, ašlukatu, alaknu, perhaps pliant rush, but more particularly convolvulus; samli-tur and abukatu especially Convolvulus Scammonia L., Scammony.
14. samkazallu, similar to one of the above in No. 13.
15. sungiru, sungirtu, a marsh-plant, food for wild asses, and perhaps used in making reed-pipes.
16. sippatu, kisu, p. 15.
17. samkul-la (etc.), isbaštu, some form of Atriplex or spinach.
18. sammeššašaš-a, alapšu, probably Mariscus elongatus.

(A) Pl. 40, Rm. ii, 41, i–ii, 1–13: for ll. 8–10, cf. Pl. 4, K. 4325, ix, 2–4:

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<tr>
<td>samgúgu</td>
<td>GUG4</td>
</tr>
<tr>
<td>10. samgúgu</td>
<td>GUG4</td>
</tr>
<tr>
<td>samgúgu</td>
<td>GUG4</td>
</tr>
<tr>
<td>samgúgu</td>
<td>GUG4</td>
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</tbody>
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<table>
<thead>
<tr>
<th>samšullim</th>
<th>šam — mu</th>
</tr>
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<tbody>
<tr>
<td>dišá</td>
<td>šu</td>
</tr>
<tr>
<td>um — ša — tum</td>
<td></td>
</tr>
<tr>
<td>šub — ba — tum</td>
<td></td>
</tr>
<tr>
<td>el — pi — tum</td>
<td></td>
</tr>
<tr>
<td>me-e bur-ki</td>
<td></td>
</tr>
</tbody>
</table>

* [Wherever "Pl." occurs alone the reference is to plates in CT. xiv.]
1 Scheil, RA. 1921, p. 5, samgúgu = samšu-mu-tum, i.e. the "red plant", beetroot.
2 Pl. 4, K. 4325, ix, 4 omits.
3 See Langdon, RA. 1916, 33, K. 9182 (CT. xiv, 33) + 79–7–8, 188 (CT. xviii, 21).
4 samA-gúgu: el-pi-tú: me-e bur-[ki], Labat, Comment. Assyr.-Bab. 60, 11 (CT. xli, 30, 11).
(B) Cf. 93042, r.2-7 (CT. xii, 27): Chicago Syll., Luckenbill, *AJSL*. 1916, 175, 70 ff.:

<table>
<thead>
<tr>
<th>ku-us</th>
<th>uš</th>
<th>sam-mu-(u)</th>
<th>am-ma-tu</th>
</tr>
</thead>
<tbody>
<tr>
<td>ú</td>
<td>uš</td>
<td></td>
<td>ri-i-tu</td>
</tr>
<tr>
<td>ku-uz-bu</td>
<td>uš</td>
<td></td>
<td>šam ku-uz-bu²</td>
</tr>
<tr>
<td>ka-za-bu 1</td>
<td>uš</td>
<td></td>
<td>šam ka-za-bu¹</td>
</tr>
<tr>
<td>ka-za-bur</td>
<td>uš</td>
<td></td>
<td>šam ka-za-bur¹</td>
</tr>
<tr>
<td>kur-šam-me</td>
<td>uš</td>
<td></td>
<td>šam kur-šam-me¹</td>
</tr>
</tbody>
</table>

(C) 108860, Smith, CT. xxxvii, Pl. 32, i (iv), 38 ff.:

| [šam]u|m-ša-tum | [šam]el-pi-[tum] |
|---------------|------------------|
| ...............| ..................|
| [šam]el-pi-tum ša-di | [šam]el-pi-tum ša-di |
| [šam]sa(ši)-a-mu | [šam]ša-mu šánu |
| [šam]ša-mu šánu |

(D) Pl. 18, K. 4354, i–ii, 1–16,² and cf. Pl. 43, Bu. 89–4–26, 112, 1–9:

<table>
<thead>
<tr>
<th>šamur-[ba-tu]</th>
<th>šam-sa-a-[r][u]</th>
</tr>
</thead>
<tbody>
<tr>
<td>šir šamur-ba-te</td>
<td>šamku-un-gu</td>
</tr>
<tr>
<td>šamku-un-gu</td>
<td></td>
</tr>
<tr>
<td>šam ša-ša-tu</td>
<td></td>
</tr>
<tr>
<td>šam ša-ša-tu</td>
<td></td>
</tr>
<tr>
<td>šam ša-ša-tu</td>
<td></td>
</tr>
<tr>
<td>šaš-bab-tum</td>
<td></td>
</tr>
<tr>
<td>šaš-bab-tum</td>
<td></td>
</tr>
<tr>
<td>šam GAL — šar</td>
<td></td>
</tr>
<tr>
<td>šam ki-di</td>
<td></td>
</tr>
</tbody>
</table>

1 Chicago, ka-zab.
² L. 2–4 are duplicates of Smith, CT. xxxvii, 29, 108860, ii, 28–30: (28) šamur-ba-te = šam sa-a-[r][u] (29) šam šir ditto = šamša-[ši]-a-mu (,) (30) šamša-[ši]-a-mu = šamša-[ši]-a-mu-tum.
²² See (L.) p. 6.
²² Note 1 shows that my reading in CT. was probably better than that in *A.H.* 2 (see ib. 277), the traces of the last character being hardly the mu of sa-a-mu, (cf. p. 10).
³ Bu. 89–4–26, 112, has no rule-line, and inserts the line . . . | šamur-ba-te 3 ši-ip-pa-tu |
⁴ Bu. 89–4–26, 112, ša.
⁵ From the traces on the two texts.
(E) Pl. 34, K. 4182 (obv., top of Cols. iii–iv of K. 267, Pl. 21, same tablet:

<table>
<thead>
<tr>
<th>Samsal-la-pa-etu</th>
<th>Samsal-la-bi-etu</th>
</tr>
</thead>
<tbody>
<tr>
<td>[samsal-la-pa-etu]</td>
<td>[samsal-la-bi-etu]</td>
</tr>
<tr>
<td>[samsal-la-pa-etu]</td>
<td>[samsal-la-bi-etu]</td>
</tr>
<tr>
<td>[samsal-la-pa-etu]</td>
<td>[samsal-la-bi-etu]</td>
</tr>
<tr>
<td>[samsal-la-pa-etu]</td>
<td>[samsal-la-bi-etu]</td>
</tr>
</tbody>
</table>

(F) VAT. 9000:

(a) Samsal-la-bi-etu
(b) Samsal-la-ba-etu
(c) Samsal-pa-pa-etu

(G) K. 4174, i–iv, 10–14 (CT. xi, 45):

10. mi-in-ni | sam-ir-min-na-bi | áš-lum
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>áš—ki</td>
<td>sam-ir-min-na-bi-la-ga-ba-lu: ku-nil-tum</td>
<td>ur-ba-tum</td>
</tr>
<tr>
<td>.—ub</td>
<td>sam-ir-min-na-bi-la-ga-ba-lu: ku-nil-tum</td>
<td>ur-ba-tum</td>
</tr>
<tr>
<td>[nu]-mu-un</td>
<td>sam-ir-min-na-bi-la-ga-ba-lu: ku-nil-tum</td>
<td>ur-ba-tum</td>
</tr>
</tbody>
</table>

(H) Pl. 37, Rm. ii, 479:

| sam | TIR |
| sam-ir-min-na-bi-la-ga-ba-lu: ku-nil-tum | ur-ba-tu |
| a-bu-ka-tu | a-bu-ka-tu |
| a-bu-ka-tu | a-bu-ka-tu |
| a-bu-ka-tu | a-bu-ka-tu |
| a-bu-ka-tu | a-bu-ka-tu |

10. ka-zal-lum | tu-bu-u |

1 Hardly [samsal-] or [samsal-]: see Pl. 38, S. 8, A–B, 2–3, p. 6. The whole is more probably [samsal] from Pl. 9, K. 4373, rev. vii–vii [sic], 11.
2 Restored from Pl. 33, K. 9182, 2 + CT. xviii, 21, 79–7, 8, 188 (joined by Langdon, RA. 1916, 32), sam-etu... with sam-ir-ma-ni-4-a in the next line.
4 D. No. 66, C. 17 (from Weidner).
(I) Pl. 38, S. 8, Cols. A-B, 1-8:

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>[šam]HI — RI — IN 1</td>
<td>ditto</td>
</tr>
<tr>
<td>šamKUN — GL</td>
<td>ditto</td>
</tr>
<tr>
<td>šamŠIS — GAL</td>
<td>ditto</td>
</tr>
<tr>
<td>šamŠAG — ILA</td>
<td>ditto</td>
</tr>
<tr>
<td>šamKUL — LA</td>
<td>a-ra-an-tū</td>
</tr>
<tr>
<td>šamKUL — ILA — LAB — BA</td>
<td>iš-bab-tū</td>
</tr>
<tr>
<td>šamKI — A</td>
<td>ditto</td>
</tr>
<tr>
<td>šamKI — LAL</td>
<td>ditto</td>
</tr>
</tbody>
</table>

(J) Rm. 122 (Langdon, R.A. 1916, 31 r., (3) šam-ra-an-nu = šam-ra-an-tū 2 = šam-la-nu-ur (4) šam-me ILA 5 = a-ra-an-tū, followed (in l. 7) by [Enuma īna biti (?)] KANKAL : šam-ra-an-tū inānammar "[When in a house (?)] KANKAL (= arantum) appears", and l. 9, šam-ra-an-tū : šam-la-ar-tū. Cf. also CT. xi, 45, i, 22 . . . . la-ar-tū, (23) . . . = a-ra-an-tū.

(K) Pl. 35, K. 271, 10-17:

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<table>
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<tbody>
<tr>
<td>šamlu-hu-tū</td>
<td>šam-ra-[an-tū] 3</td>
</tr>
<tr>
<td>šam-du-rut-nu-tū</td>
<td>šam</td>
</tr>
<tr>
<td>šamŠAG — ILA</td>
<td>šam</td>
</tr>
<tr>
<td>šamŠAG — KAL</td>
<td>šam</td>
</tr>
<tr>
<td>šamFI — PI</td>
<td>šam</td>
</tr>
<tr>
<td>šamPT — PI — ŠAL — LA</td>
<td>šam</td>
</tr>
<tr>
<td>šamLI — TIR</td>
<td>šam</td>
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<tr>
<td>šamLI — TIR</td>
<td>šam</td>
</tr>
<tr>
<td>šir šamLI — TIR</td>
<td>šir šam</td>
</tr>
</tbody>
</table>

(L) I have grouped these two quotations here, but it seems quite uncertain whether the urpulu-group is connected with that of šamDU13 — A-NI preceding it:

VAT. 9000:

(a) šamum 4 — ša — tu | šamza (or ha), ša — ti-tū (7) | šam [šam] za — ši — [tu] (7)
(c) šamAMA — A-NI | šamur — pā — tu 7 | šamša — ši — [tu] 6
(d) šamur — pā — tu 7 | šamša — ši — [tu] 6 | šamša — ši — [tu] 6
(e) šamur — pā — tu 7 | šamša — ši — [tu] 6 | šamša — ši — [tu] 6
(f) šamur — pā — tu 7 | šamša — ši — [tu] 6 | šamša — ši — [tu] 6

1 Cf. KAR. 202, ii, 32 (dup. CT. xxiii, 43, 28) KANKAL HI-hi — IN [šamša — ša — SH RA], etc.
2 For šamša — ša — SH RA = šamša — ša — SH RA see Mut. 86, 2, 3.
3 Cf. 108 860, CT. xxxvii, 32, 47, 57. [tu] = a-ra (= anzum = šam-ra-an-tū.
4 It must be um, although the photograph suggests tu or ša. What is the relation here to V.M., Mat. 88, 2, 31 ?
5 The photograph suggests this, but I am doubtful about it.
6 The relation here to V.M. Mat. 88, 2, 34, 8 8 8 8 IMIRI a ln | ina ša — a — ru !
7 Mat. 88, 2, 35, šamur — pā — tu 7 | ina ša — a — ru !
8 Mat. 88, 2, 38, ša — a — ru !
9 Mat. 88, 2, 38, ša — a — ru !
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| 26. | $\text{tam}_{DU\,13^*}$-$\text{A-KAK}$ (!) (=$\text{NI}$) | $\text{sam}_{\text{lu}}$-$[\text{si}-\text{ri}-\text{tu}]$
|   | $\text{sam}_{\text{DU}\,13^*}$-$\text{AMA}$-$\text{A-NI}$ | $\text{sam}_{\text{SA}}$-$[\text{ru}]$
|   | $\text{sam}_{\text{ZU}}$-$\text{ba-te}$ | $\text{sam}_{[\text{ku]}-\text{yu}-\text{gu}]$
|   | $\text{sam}_{\text{bu}}$-$\text{un}$-$\text{gu}$ | $\text{sam}_{[g]}$-$u$-$\text{ru}$-

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<td>30.</td>
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<tbody>
<tr>
<td>(N) Pl. 38, S. 8, iii, 7–15 :</td>
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</table>

| $\text{sam}_{\text{AMA}}$-$\text{A-NI}$ |   |   |
| $\text{sam}_{\text{AMA}}$-$\text{A-NI}$ |   |   |
| $\text{sam}_{\text{SA}}$-$\text{A-NI}$ |   |   |
| $\text{sam}_{\text{SA}}$-$\text{A-NI}$ |   |   |
| 10. | $\text{sam}_{\text{ZU}}$-$\text{A-NI}$ |   |   |

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<tr>
<td>(O) Pl. 38, K. 5424, B, i–ii, 3 :</td>
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| $\text{sam}_{\text{AMA}}$-$\text{A-NI}$ | $\text{sam}_{[\text{gu}]}$-$\text{A-NI}$ | $\text{sam}_{[\text{gu}]}$-$\text{A-NI}$ |

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<tbody>
<tr>
<td>(P) Pl. 24, K. 4412, iii–iv, 7–14 ; Pl. 37, K. 4417, 3–1 :</td>
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| $\text{sam}_{\text{AME}}$-$\text{SA}$-$\text{A-NI}$ | $\text{sam}_{\text{LA}}$-$[\text{pu-u}]$ | $\text{sam}_{\text{LA}}$-$[\text{pu-u}]$
| $\text{sam}_{\text{MA}}$-$\text{SA}$-$\text{A-NI}$ | $\text{sam}_{\text{LA}}$-$\text{A}$-$\text{MA}$-$\text{SA}$-$\text{A-NI}$ | $\text{sam}_{\text{LA}}$-$[\text{pu-u}]$
| $\text{sam}_{\text{EB}}$-$\text{ZU}$ | $\text{sam}_{\text{LA}}$-$[\text{pu-u}]$ | $\text{sam}_{\text{LA}}$-$[\text{pu-u}]$
| $\text{sam}_{\text{EB}}$-$\text{ZU}$ | $\text{sam}_{\text{LA}}$-$[\text{pu-u}]$ | $\text{sam}_{\text{LA}}$-$[\text{pu-u}]$
| $\text{sam}_{\text{EB}}$-$\text{ZU}$ | $\text{sam}_{\text{LA}}$-$[\text{pu-u}]$ | $\text{sam}_{\text{LA}}$-$[\text{pu-u}]$
| 10. | $\text{sam}_{\text{EB}}$-$\text{ZU}$ | $\text{sam}_{\text{EB}}$-$\text{ZU}$ |

1 This line is put after l. 12 on K. 4417.
2 There is a variant form $\text{Ulu}$-$\text{la}$-$\text{e}$-$\text{gi}$ in V.M. (i.e. Pl. 10, r. 1, and Mat. 88, 2, 22).
3 K. 4417, u.
4 Line not on K. 4412. Scheil, RA. 1921, p. 42 ($\text{sam}_{\text{MA}}$-$\text{AM}$-$\text{MU}$ : $\text{elippi}$, followed by $\text{so}$-$\text{bu}$-$\text{ri}$).
1. Šamma “plant”, “grass”, “vegetable” (and sometimes mineral drug).  

This word begins one of the great series of plants. 

(a) As “herb of the field”, “grass”, it is eaten by lambs, AM. 85, 1, ii (= v), 7 (“kidney of a little lamb which has not yet eaten šamma”); by oxen, Bu. 80–7–19, 130, 6 (MA. 1050, Meissner, Studien, MAOG. iii, 3, 45) (“the ox of an enemy eats šamme”); Hammurabi-period; by horses (the horse speaks of horses as “choosing the best of the šamme, the grass of the earth”, CT. xv, 36, Ebeling, MAOG. ii, 3, 36, 12); by gazelles (“with the gazelles he (Engidu) eats šamme”), GE. i, iv, 3). Šammep occurs in KAR. 203, r. iv, 40. Šam-mu is “harvested” (esidu) (Dougherty, Arch. f. Erech, date of Nbk., No. 71). 

(b) As the determinative of all plants. In the Ras Shamra texts š-m-m means “plants” in general (Virolleaud, Glee, 1938, 22).

(c) “Plant,” in relation to its place of origin, e.g., Šam-mari (Ammi) is called [šamšami šadii “plant of the garden” (p. 68); Šamšir (acacia, thorn) is called šamšami šadi “plant of the mountains” (p. 180); šalapu (agrostis) is called šamšari “plant of the river” (p. 7); šamšimi šamin “plant of the middle of the sea, plant of the broad sea”). 

(d) The Assyrian word šamme has sometimes actually been incorporated in a plant-name borrowed from Assyrian by other Semitic dialects, e.g., the Assyr. šamšerimu is probably the Syr. šamuræn, and šamšarrú šar (fenugreek) becomes in Aram. šabhulá (cf. even the Syr. p'àittal). 

(e) Šamme, frequently šamu, takes on the meaning “drug”: e.g., “if a man šamme šash-ma, has drunk a drug and has not vomited evacuated) (špru)”, Kû. ii, iii, 44. “If a woman šamme širu šukul has been given harmful drugs to eat,” KAR. 194, r. iv, 29. Also in such phrases as šamka-gig-ga-kan “drug for toothache” (i.e. male mandrake and root of pyrethrum, Pl. 23, K. 259, 1 and 6): šam ku-gi “drug for anus-sickness” (hemorrhoids, MA. 1929, 53, n. 4), such as mint, laurel, shoe-makers’ gall, seed of tamarisk (gall), root of mandrake, and Erucu, KAR. 203, r. iv, 1–6: šamšami šissati “drug for depression of spirits” (i.e. cannabis, p. 228). Šam balat “drug for life”, while having the special meaning “opium” (p. 227), is used in an Assyrian letter as “revivifying plant” in general: “the King, my Lord, has given us life, putting the plant of life” “in our nostrils”, ABL. 771, 6. More simply, we find šam libb “drug

Note 1 sam umu = šam-mu, KAR. 14, ii, 25. 
2 This confluence is paralleled by the Assyr. šam mešatu “gum of Asa fatida” becoming the late Heb. huláh.
for heart” (or whatever may be the part of the body intended here), which is hellebore, reckoned as a drug for mania. (p. 153). More elaborately, "samša dūmī parasi “drug for stopping blood” (i.e. tamarisk-gall, Pl. 36, 79–7–8, 22, r. 3: cf. KAR. 191, ii, 15): "samša simmati nasaḥi “drug for removing poison”, Pl. 36, 79–7–8, 22, r. 7.

(f) Colours applied to "sammu:

"samša mu salmu “black drug” (p. 130), i.e. Ricinus, probably referring to the dark leaves. "samša mu sāmu(DIR) “red drug” (p. 355), Asa feltida: "samša mu sāmu(GUG) “red plant” (p. 50), beetroot (A, 6 (p. 3) gives "samšubatu for "samGUG. In C, 43 (p. 4), "samša mu sāmu(DIR) is “red drug” = "sam šīku el-pa-a(f) -te (suggesting a reed-arrow(?)).

A curious use is the contrast in AM. 52, 3, 9 of "samšaL samma "samšaL "the plant LAL and the drug of the plant LAL”, in a salve for ulcers.

(g) "samme" is constantly used to include various drugs in a summing-up in prescriptions, e.g. 12 "samme" qat edimm(ama) ina šikarī išati ""twelve drugs for the Hand of a Ghost in beer he shall drink”, AM. 76, 1, 22. These may include mineral drugs (e.g. alum, DACG. 73).

2. "samDīšu, "samdisarru, see p. 146.

3. "samUmšatu, for which Holma (Kt. B., 4 and 61) suggested the Arab ḫāmd, Rumex (the Syr. ḫannūthā). This comparison is possible so far as Rumex (sorrel) may be considered similar to the grass or reeds included in this group. Ainsworth, Assyria 36, speaks of Rumex acetosa (Arab. "hornavī”) as occurring in Mesopotamia.

4. "samšuppatu, almost certainly to be read thus from BRP. iv, pl. 37, 27; "samšu-up-pa-tum = "samšur-ba-nu. The variant is "šubbatum. The Heb. šēph “reed” is a possible cognate, but doubtful. "Šuppatu occurs in Reisner, Hymnen No. 1, r. 56, ki-ma šup-pa-ti ú-še-man-ni ki-ma el-pi-ti ú-še-man-ni “like a šuppatu-reed he has made me, like an elpiti-reed he has made me”.

5. "samElpitu, with which I wrongly, I think, connected the Aram. ḫalī (PSBA. 1906, 225: cf. also Holma, Kt.B. 92). Rather, I think, should the Aram. ḫalīphā be referred to "samalapā (p. 17).

Its Sumerian equivalents "samGUG and "samTIR show it to be a plant TIR rush. "samElpīnum nē burki suggests a rush “of the water of a pool” (Heb. bérēkhāh “pool”), contrasted with "samelpīnum šādī (“a rush of the mountains”), while its equivalence “couch of Ishtar” may indicate rushes for couches or mats (comparable to "sam kidī = arantu = “Couch of Ea”, doubtless a semi-submerged grass, p. 17).

Another equivalent, "samA-GUG, again suggests a water-plant (rush or reed). It is used for making a bed (cf. “Couch of Ishtar” above) (Langdon, PBS. xii, i, 29, 26), i.e., a rush-mat similar to that made from "sammarbaru (p. 10). More important, "samA-GUG occurs in Langdon’s Poème Sumérien, 196, 26, as an edible plant, which at once indicates it as the equivalent of the modern bardi (p. 10). It is stiff and strong enough to stir up flour of šē-šiš (“bitter corn”) in water in a bull’s hoof (! previous to pouring it on the ground to prevent ghosts haunting a man, CT. xxiii, 17, 35 (note also 1 The implication of the “bitter meal” in the bull’s hoof is perhaps to symbolize the kicking forth of the ghost with bitterness.}
In MT, šamā-U-gud, is prescribed ext. on a swelling with Acorus calamus, dried, pounded, with powder of supuljum cedar in fine-ground flour, steeped in rose-water and bound on, K.A.R. 192, 40 (for the use of rushes thus see p. 22).

Other equivalents are: ni-i-mu = el-pi-tum, CT. xviii, 3, vii, 36 (cf. ib. 16, Rm. 346, 10). C. 42, 43 (p. 4) give [šam]šanu(?) and [šam]šamu šanu = šam isku epltam (probably) a red plant (reed) or drug which provides a weapon (arrow?). For šanelpitu himu (bound on locally alone) prob. for snake-bite, see Scheil, RA. 1918, 75, 8.

6. šamurbatu, šamurpatu, etc., “rushes” generally, and Cyperus papyrus L. (the Galingale) in particular.

Shalm. III (Mo. 77) speaks of boats of šturbate “rushes”, as contrasted with boats of madatlušše “skin-bladders” (i.e. the Mesopotamian rush-boats (moshkhaf) of to-day, rather than the mere reed-floats or rafts. Iršu urbatū is a rush-bed, doubtless the reed-mat (Johns, AJSL. 1917, xxiv, 64) and, still more generally, ištur urbate “a fire of reeds”, CT. xxiii, 34, 34.

On the other hand šamurbatu has the equivalence particularly of the Syr. ikbatu (Arab. asal, FJ. i, 568, see aslu, p. 12), the bardī-rush of S. Babylonia with an edible root, Cyperus esculentus L. (Post, in Hastings DB. ii, 13).²

Most noticeable is the šamurbatu šimpu-šu, which as Mr. Gambier-Parry suggested to me, probably refers to the three edges or corners of the Cyperus (cf. NH. xxi, 69, “another kind of rush, of a triangular shape, to which they give the name of Cyperos”; Lindsay, Isidori Hispalensis Episcopi etym. sive originum, Lib. xx, xvii, ix, 8 “Cyperum a Gracis vocatum... Radix est junci trianguli”; EB. xith ed., vii, 692, says that the Cyperaceae are grass-like herbs generally three-sided aerial stems, chiefly marsh-plants; VK. 202, of the Cyperaceae, “generally growing in moist places...; stem a cylindrical or triangular culm...; the leaves sheathing (cf. šallapānu, p. 12)... resemble the grasses.”

In MT, šamurbatu occurs thus:

(1) Simply: ext.; as a bandage (not for eyes, but prob. snake-bite), Scheil, RA. 1918, 75, 9 (šamurbatu himu).³

(2) There is apparently a “vinegar” of urbate (as also of GI-ŠUL-ŠAR), comparable to that made from the Great Galingale mentioned by Pomet (HD. 34): “The Root [of the Great Galingal] is of no other Use when dried,

³ The rush-mats of Madras are made from species of Cyperus, EB. xivth ed., xix, 19, 513; four species are given as providing the material for Indian mats, CPI. 466.

² F.P. 2 ii, 605, bardī = jwemē: P.J. 1, 557, 667 = Cyp. papyrus.

³ Himu occurs also in Scheil, ib. 75, 8, and 10, applied to šanelpatu and šam-papānu, and it may well be that we must restore the drugs used for snake-bite on Pl. 23, K. 9283, iii, 6-8, with these:

| šamal-pašu | šam kā-ŠIR | ši-mu-u ana pānu kā [LAL-šu] |
| šamur-šašu | šam kā-ŠIR | ši-mu-u ana pānu kā LAL-[šu] |
| šam-pašu | šam kā-ŠIR | ši-mu-u šamelpatu na (esu) [NOIN-šu] |
| šamur-kud-da | šam kā-ŠIR | iwa kisdašu šamelpatu (na) |

Scheil is probably right in referring it to the same root as šimenu (“ghee”), but I doubt whether it means “fat.”
than for the Vinegar-makers, who use it instead of the less sort for making Vinegar." KAR. 194, iv, 29, runs: "When a woman, having been given noxious drugs to eat,¹ water comes copiously into her uterus . . . , that her sickness ² may not be of long duration, KU.Á LÁ šamurbate gír-pad-du tuṣaḥḥata(ar), thou shalt reduce vinegar (of) Cyperus (and) bones, and ³, put into her uterus on (in) a cloth." Cyperus-root is prescribed in fumigation to uterus for promoting menstruation by Diosc. i, 4. Pliny (NH.xxi, 71) mentions Holoschoenus-root for staying menstruation.

(3) Root: išid urbatu, peeled and eaten for snake-bite alone, AM. 92, 7, 6. Diosc. i, 4 prescribes Cyperus-root for scorpion-stings, and Pliny (NH. ib.) the chewing of Holoschoenus for the bites of spiders. The root of šam'egu, ⁴, boiled in the urine of the man and beer is rubbed on ṛtti (hands).

(4) Seed: (i.e., šam'kungu, p. 12). It is used with pa (tops) of "gipari as a poultice for heartburn, Kû. ii, ii, 42.

(5) Ashes of šam'egu: ext. in wool in uterus as styptic, KAR. 194, iv, 22. Int., to stay menses, "reduced" (i.e., to ashes) with twisted horn of goat, and drunk in beer, KAR. 194, 38.

(Uncertain mention of urbatu (no det.) in stomach-text, AM. 29, 3, 10, 12: Cyperus-root is used for colic, HD. 35).

7. U rbatu = širmubanu (VE. 47, i, 50), i.e., the Syr. 'urbānā, Cyperus (HWB. s.v.) (= Arab. bardī, FJ. ii, 568). It is also the scribe's reed; cf. [ša] ima šam'urbami annā šatu "which is written with this reed" (Klauber, Pol.-Rel. Texte. No. 26 and p. 48). To this add the equivalence šam'urbani = šam'suppotaum, BRP. iv, 37, 27.

For the vegetation which fringes the Khor, that immense tidal lake of S. Babylonia, see A., 174 (= Mariscus elongatus): the Cyperus longus L. was seen near water in Mesopotamia (Von Opp. ii, 388). The various species of Cyperi in Egypt are given by Forskål (Flor. Äq. LIX, LX) as fastigiatus (Arab. samār, dabbūs), complanatus (Arab. salād), ferrugineus (Arab. sūāl), and esculentus (Arab. hab el-azīz). For ancient representations see the sculptures of Sennacherib (Gadd, SA. pl. 13, etc.) and more modern, Temple, FTP. frontispiece: (for reed-huts, Peters, Nippur, ii, 75.) Rauwolf (ii, 194) at Baghdad noticed "the delicate round Cyperus Root, by the Inhabitants called Soēdi, whereof one may find great quantities growing in mossy and wet Grounds".

8. šam'sišnu, šam'sišanu, Syr. šišnā, Butomus, the flowering rush (FJ. ii, 573: F.P. ii, 539) = Butomus umbellatus L., which Amsworth saw near Julamerk (T., ii, 292). In Russian folk-medicine the root of the Butomus is used for hydrophobia (HS. 481: cf. šam'urbani for snake-bites, p. 10). According to p. 5, l. 4 [šam'sišnu] is, vulgo, šam'urbani ² p. 4, D l, 6, šamšišanu is a variant of šam'sallapanu. (Holma, Kl.B. 87, šišnu correctly, but curiously he makes šešanu the Heb. šišan, 94).

¹ Su-ku-ul, cf. Pl. 23, K. 9283, 11, amelu šu-ku-lu u naK-u "the man being given (it) to eat and drink (?)".
² Awa ³a (?) (perhaps ištā "attack") viṣraša la araki.
³ † indicates, wherever used, that the drug in question is combined with others in a prescription.
⁴ It is possible that bardī is the same word as the Assyrian urbatu.
\[\text{sam}Šallapanu \text{ (v. \text{sam}šababinu, \text{sam}šallabenu), probably from šalápu} \]
\[\text{"draw (a sword)"}, \text{i.e. of a sheath-like nature (p. 10.) It occurs in } \text{MT. : for } \text{lu} \text{nugs (\text{sam}ša šeša zamra } \text{"which sing with breath"}, \text{bray, drink alone in kurrunu-beer (or, beer), KAR. 203, iv, 26, dup. D.T. 136, Pl. 31, 6. Unknown disease, } \text{?}, \text{drink, AM. 82, 3, 11.} \]

9. \text{\text{sam}Kungu (v. \text{sam}gungu). Apparently in } \text{MT. as } \text{ku-un-g[i]}, \text{\dagger, in a poultice for a blow (mūšitu), } \text{AM. 79, 1, 24. Its equivalence, } \text{"seed of Cyperus" (p. 7, l. 29), need not be taken too literally. } \text{\text{sam}Kungu must be the } \text{gongae of Berosus (AH. 32 : Cory, Anc. Frag. 2nd ed., 21): } \text{"in the books [of Babylonia.] were produced the roots called gongae, which are fit for food" (i.e. the mod. Arabic barād).} \text{ Another equivalent for this is } \text{gūrū, prob. the Syr. gūrū "palm-marow" (like \text{sam}gūrū, Jensen, ZK. ii, 1885, 26 ; see p. 309). Cf. gu-ur gi-šul-šār, CT. xxiii, 41, 12 : AM. 20, 1, 44 ("pith of the gi-šul-ša\text{"}}\text{r a rush"): gu-ra ša gani} \text{"pith of a reed"}, AM. ii, 2, 37. Ku-ū-ri is given as equivalent of gi-ū-ŠU-UM-MA (p. 209) by Pinches, PSBA. 1894, 329, 4. \text{The Syr. guryah, given in Löw, Ar. Pf. p. 141, as equivalent to skinbān scawmān, may be connected.} \text{ The indication in the VM. (Pl. 10, r. 15 : Mat. 88, 3, 36), } \text{\text{sam}kungu ina gūrū is interesting, as also the previous line } \text{\text{žizir urbatum} ina kungu. In both cases we are given their simple equivalents in the right-hand column.} \]

10. \text{\text{sam}Papānu (\text{sam}šad(i)ū, p. 4, D 5). It occurs in } \text{MT. as } \text{\text{sam}Šapānū ūmu, to be bound on locally for snake-bite (p. 10, n. 3).} \]

11. \text{\text{sam}Ašlu, the Syr. aslā, Carex (PJ. i, 572), the reed-grass from which ropes are made (ib. 574). A peculiar pliancy is indicated by the frequent employment of the epithet "male" to this } \text{\text{sam}ašlu-rush, when it is used for plaiting magical cords, e.g. with white wool (male } \text{\text{sam}ašlu-rush), AM. 19, 1, 24 : with gazelle-sinew (male } \text{\text{sam}TIR}, AM. 20, 1, 30 ; (cf. also "male } \text{\text{sam}TIR", AM. 102, 24, ff.; "male } \text{\text{sam}ašlam}, AM. 104, 1, 13 : } \text{\text{sam}ašlam} \text{"with } \text{fa (tops) of male palm, Langdon, PBE. xxxi, 60, 5): without the epithet male, with } \text{kan-da(sic)-wool, etc., } \text{\text{sam}TIR, KAR. 194, } \text{TIR TIR } \text{TIR TIR TIR TIR } \text{TIR TIR } \text{TIR TIR.} \text{ Cf. also CT. xvii, 23, 169, } \text{\text{sam}TIR \ldots \ldots \ldots \ldots Assyro uncertain. \ldots } \text{\text{sam}TIR}\text{, for the Hand of a Ghost, AM. 100, 2, 10. The seed of male } \text{aš-li is brayed [and applied] } \text{\dagger to eyes, AM. 12, 4, 5.} \text{ \text{sam}TIR occurs as early as the 3rd Dyn. of Ur (De Genouillac, LTT. iii, TIR no. 6351), and } \text{ašlatum as late as a contract of Artaxerxes (Peiser, KB. iv, 312). One of its synonyms, } \text{hilītu, is obviously the same root as the late Heb. k'īlīd "crown", woven from the pliant rush. (Here, too, can be mentioned the words } \text{ašbatātu, probably a -k formation from } \text{ašlu, and } \text{abukatā, Scammony, a convolvulus, both synonyms, for which see p. 13 further). } \text{ša-ma-li-tur, another synonym, undoubtedly similar to } \text{šer-li-tur, properly the navel-cord (abunnātu), i.e., similar to the convolvulus.} \]

12. \text{Kunītum, fem. of kunīnu, M.A. 405. The root occurs in } \text{gi-gaɾ-šuɾ-ba and gi-gaɾ-bi-šuɾ-ɾa = } \text{qanū kuninnātū, 42339. Pl. 47, 14, 15 : \ldots kuninnātū, 36481, Pl. 49, r. 1 : kuninnu ša qané (= KUNIN (NUMUN)} \text{ Cf. Kililanu, p. 329.}
within lim), D. 487, 4). \textit{Sam}Kunitu occurs as one of several plants or plant-products to be strung on a thread, \textit{KAR.} 185, iii, 15.

13. \textit{Abukatu} and \textit{ašukatu}, equivalents to \textit{samLI-TUR} and \textit{samLI-TUR} (see above, p. 12, for a comparison with \textit{samLI-TUR}, \textit{abunnatu}, navel-string). There is no reason to suppose that \textit{sam}abukatu and \textit{sam}ašukatu are the exact equivalence of the rushes \textit{sam}aslu, \textit{sam}urbutu, or \textit{sam}elpitu, merely because they are equated with the Sumerian for these. \textit{samLI-TUR} and \textit{samLI-TUR} are never equated with each other.

Most important is the fact that both \textit{samLI-TUR} and \textit{sam}ab-ka-tu provide a gum, e.g., from \textit{VAT.} 9000:

\begin{itemize}
  \item [(a)] \textit{sam}NU-UG
  \item [(b)] \textit{samLI-TUR}
  \item [(c)] \textit{sam}\textit{a}bu-ka-tu
  \item [(d)] \textit{sam}A\textit{DAN} \textit{a}bu-ka-tu
  \item [(e)] \textit{sam}\textit{a}bu-ka-\textit{tu} \textit{I} \textit{sam}LA-\textit{aq}-\textit{nu}
  \item [(f)] \textit{sam}\textit{b}il \textit{sam}lu-tu-\textit{te}
  \item [(g)] \textit{sam}A\textit{DAN} \textit{U}-\textit{GIR}
\end{itemize}

This gum (\textit{hilu}) of LI-TUR, LI-TAR (less common), LI-TUR (once, \textit{AM.} 41, i, iv, 24), and \textit{abukatu} (spelt out) is found in \textit{MT.} thus:

Ext.: Eyes, \textit{AM.} 9, 1, 30: \textit{sam}(?), 12, 4, 13. Breast (lung-trouble), after cleansing mouth, and putting oil in nostrils, as poultice, \textit{AM.} 99, 1, 1, 13, 12, 4, 13.


Enema: \textit{AM.} 43, 1, 8: \textit{sam}, 94, 2, i, 4.

Fumigate: \textit{AM.} 99, 3, 6.

Note the use of a variety of this drug “gum of LI-TUR \textit{šadē}(e) (“of the mountains”), \textit{AM.} 83, 1, 5: “Gum of \textit{a}bu-\textit{Kat} \textit{šadē}(i),” for a man overcome with heat (\textit{UD-DA-šad-da}), \textit{AM.} 14, 7, 6.

(b) \textit{sam}Abukatu, spelt out, simply: Ghostly seizure, anoint in oil with human skull and turmeric, \textit{AM.} 97, 4, 16 (\textit{sam}ab-ka-[\textit{tu}]). Fumigate with ... [a-b] \textit{u}-\textit{uk}-ka-tu, \textit{AM.} 80, 6, 5. Quantities: 3 grains, \textit{AM.} 9, 1, 30 (eyes): 7 grains, \textit{AM.} 12, 9, 7 (eyes). 1 šū, \textit{AM.} 41, 1, iv, 24.

Most important is the comparison in “\textit{hil} LI-TUR \textit{lima epiri asurē}” (\textit{BRP.} iv, 37; \textit{JRAS.} 1924, 455) “gum of LI-TUR like dust of the wall”, i.e., like carbonate of soda, \textit{sal murale}, probably those yellow crystals which appear on tablets or bricks (\textit{DACG.} 11). We must therefore seek in the gum of the \textit{abukatu} such a gum as appears in the form of yellowish tears, from a pliant and convolvulus-like plant.

Scammony, \textit{Convulvulus Scammonia L.}, with its gum-resin and its
convolvulus-like stalks, used in M.T. and in classical medicine both ext. and int., fits the gum of abukatu exactly. Scammony occurs from E. Mediterranean to Persia (F.J. i, 451): "in abundance about Marash, Antioch, Edlib, and towards Tripoli in Syria" (VK. 539), but I have no knowledge of it actually in Mesopotamia. "The stalks are numerous, green, slender, and angulated; they are five or six feet long, support themselves without the help of bushes" (Hill, Useful Family-Herbal, 338): the root is from three to four feet in length, and the stalks numerous, slender, and twining, being fifteen or twenty feet long (VK. 539). Rauwolff (47) says near Tripoli (Syria) he saw Scammonium jvlonspelense, which the natives call Meudheuds, but Rhasis calls it boriziala, Brassica marina.

The root affords (a) Scammony resin, greenish-grey or brownish-green, translucent, brittle lumps, obtained by exhausting Scammony root with alcohol, and soluble in alcohol: (b) Scammony, brown, dark-grey, or brownish-black, irregular masses, a gum-resin obtained by incision from the living root of C. Scammonia L. This emulsifies in water, while the resin does not (P. 1060, ff.). BMM. 418 describes Scammony as a resin of a bright green colour.

"It is from the milky juice of the root that the scammony of medicine is procured... The peasantry having cleared away the earth from about the root, they cut off the top in a oblique direction about two inches below where the stalks spring from it. Under the most depending part of the slope, they fix a shell or some other convenient receptacle, into which the milky juice gradually flows. It is left there for about twelve hours... each root affording but a very few drams... in a little time it grows hard... It is brought from Aleppo and Smyrna" (VK. 539).

Its uses in medicine are particularly as a strong purgative, but the ancients used it also externally. Pliny (NH. xxvi, 38) says: "about the period of the rising of the Dog-star, an excavation is made about the root, to let the juice collect; which done, it is dried in the sun, and divided into tablets... The scammony most esteemed is that of Colophon, Mysia, and Priene." He prescribes it internally as a purgative, but says that the root is boiled down in vinegar and the decoction used for leprosy, or with oil for headache. Diosc. (iv, 168) prescribes it in cataplasms with flour, or on a pessary of wool in the uterus to kill the embryo, or, like Pliny, for leprosy and headache. BMM. 418 says that when baked it is a powerful diuretic. I have a specimen of the medical substance before me as I write, and the appearance is of a greenish resin, powdering easily.

The modern Arabic for Scammony is šīrş-al-maḥmūdiyāh, and for the various convolvuli: 'ullaq, 'ullaiq, mutlaid, for C. areensis L.; šubrum, šibrīk, C. Hystrix Vakl (used as a purgative by the Arabs, Burton, Land of Midian ii, App. iv); yarrah, C. Schimperi Boiss. (FP. ii, 203, 206): 'allaq, C. stachydifolius Choisy (F.J. i, 462). None of these is connected with the abukatu, which would seem to be allied to the Arab. root habaka "bind" (cf. our word "bindweed" for convolvulus). Ašbukatun (cf. Meissner, Suppt. 19) occurs again in a vocabulary containing also kirēvu, and gišrum (Jastrow, Z.A. 1889, 160, S. 896); as was suggested above, it looks like a -k formation (fem.) from aššu, like elammaku and
The connection of asamLI-TUR and asamTYR as hilty suggest the convolvulus, LI-TUR as abunnatu “navel-string” \(^1\) having the same idea.

asamAlaqnu (the -nu is clear on the tablet, but it is possibly a mistake) might be connected with the Arabic ‘allaq above.

For asamlapat ramannu see p. 13.

14. asamKazallu occurs thus in M.T.: †, bray, bind on oil, KAR. 182, r. 26. asamKa-zal-la occurs KAR. 208, 22 (uncertain prescription). In the V.H. (Pl. 10, K. 4218, A, 10, and Mat. No. 88, i, 48 :

\(^{(x)}\) asam\(\)ka-zal-la (v. lu) | ina lišan muš-tar-a

Is this for snake-bite ?

Seed of asam\(\)Ka-zal-, KAR. 185, iii, 17, which occurs on p. 36 as equivalent to asamzid-má-lah, atriplex.

15. Sungiru, sungiru should be included here. These are the equivalent of Syr. sungivráthá, a marsh plant, as was pointed out by Boissier, RS. 1901, 151. Ebeling (Tod. 16, 14) has a good note on it, quoting V.R. 47, 52, a (see Langdon, Bab. Wist. 44, 5), where it is equivalent to ulilimum, and ABL. No. 1000, 8, where it is shown that the wild ass eats it. RS. ib., 159 and Tod. 16, 13 give (13) aluzin mina tehí’i, (14) sungira ina laptí, (15) bagiqatí ina kuzub la tehé(e) ekima, (16) lasama u kalama ali’i.\(^2\) The word ulíltu looks as if it comes from elélu, and therefore may be a reed-pipe (sungiru can hardly be connected with obveye?)

16. Sippata and kisú, of which the former is a reed of Makkán (V.R. 32, 65): cf. “Marcheswán, what is thy food ?” Sungira ina laptí (v. laptí) u sippata ina zid nu-luḫ-ya tapattan, i.e. Sungira (a marsh plant) and sippata in powder of Āsa fatída (Tod. 18, 9). The Syr. seppíthá (plur. seppé), a reed mat, F.J. i, 680 may be connected. The other “meals” of the text in Tod. 18 consist of unpleasant substances.

This completes the first group, and we can go on to the second.

17. asamIšbabtu.\(^3\) This = asamšami šeri “plant of the desert” = [sisatum (?)] “horse-fodder” asamsisatum being asamšbabtu eqlí, “išbabtu of the field,” p. 4, l. 12); = “... rabíti\(^{pl}\) great ...” (ib. 14), while asamšbabtu škiri, “išbabtu of the orchards, gardens” = asamšalpá. These, and the probability that it is to be referred philologically to the Heb. ‘ēsebh “grass” (the form having a reduplication of the third radical, like alkaštú, ikkakú, ernuntu, aršašú), suggest that we have here some simple grass-like herb. This is confirmed by the equivalence asammalláštú, which would seem to be connected (by sound, at least with the asamzid má-lah, Atriplex halimus L., a spinach (p. 37) and probably is even nearer to Heb. malllášt. The Euphrates Expedition ate a kind of

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\(^1\) On the meaning of abunnatu see Mar 1928, 13; CE. 76; Christian, OLZ. 1914, 397; Jastrow-Clay, YOS. iv, 3, 82. Here the suggestion obviously bears out the meaning “navel”, but it is possible that “sexual parts” is also an equivalent.

\(^2\) Ebeling’s translation runs: “aluzinme, was kannst du ? Die Sungiru-Sumpfpflanze mit verdorbenem Fäulnis mit kuzub-la-tehè-Pflanze bestreichen und laufen und alles (sehen) kann ich !” Kuzub-la-tehè, as he points out, occurs in Gadd’s CT. xxxviii, 18, 115. It may or may not be a plant. Cf. asamšu-va Śa-biš, p. 4.

\(^3\) B. Landsberger, Die Fawna des alten Mesopotamiens 66.
spinach (Ainsworth, A., 36); I have myself eaten a wild spinach at Carchemish called ḫāsīṣ būrriyāḥ “wild grass”, which may well be the šamšamī šērī “plant of the desert”.

It is rare in MT.; Pl. 29, K. 4566, 21, and KAR. 203, i, 65, give it as a drug for asī (pain) to be applied cooked. šam-ša-[la]-tum occurs in an omen between šam-a-[la]-pt-um and [šam]a-ra-an-tum, TR. ii, 60, r. 13.

šam-Sisatu, i.e. šam-išabtu eqši “išabtu of the field” must be from šisu “horse”, i.e. fodder, like aspaštā šar (MB. r. 62) Syr. ‘aspastā, medicago sativa L., from the Persian aspa “horse” (FJ. ii, 463; Nödeke, ZDMG. 1878, 408).

There is also šam-išabtu like ḫaššu ṣābī “(oak-galls, p. 255) followed by šam-šilūm (excrecence) like šam-išabtu, its fruit green and hard”, and it is not impossible that these two entries are connected with each other; the “galls”, “excrecence”, “green and hard”, suggest the Salvia pomifera, the “apple-bearing sage”, which is a native of various parts of the Levant. This is a plant “remarkable for being liable to the attacks of an insect of the Cynips genus, which produces upon their branches little protuberances similar to galls upon the oak, but much larger. These morbid growths contain an acid aromatic juice, and on this account are valued by the inhabitants of Crete as an article of diet” (PC. xx, 373). Belon (Rauwolff, Travels ii, 4) mentions it as coming from Mt. Ida in Crete, and carried to all markets (note ib., Cat., at end, 42 “quod mirum, cum nihil aliud sint quam Gallae”). FCCH. 60 (see its pl. 54) describes Salvia triloba L. (Arab. maryənīyāḥ) as having galls on it produced by some fly, probably Ayuł sp. “These, coming on the top of the plant and being in shape like little apples, are mistaken by the people for its fruit . . . they are picked while still soft, peeled and eaten.” It quotes Gerarde, ed. 1936, 766, as saying of the S. cretica pomifera: “it beareth excrecences or apples (if we may so term them) of the bigness of large Galls or Oak Apples.”

Allowing, therefore, that šam-išabtu is some form of Atriplex or spinach, we can go on to šam-kankal, the equivalent of teriqtu (root arbāq “be green”, i.e. “green stuff”) and nišatu (Syr. nišūyā “sprouting”), Br. 9761, 9759. KAR. 165, 12, speaking of a lamb eating, says imaqlut a-gar-gar-ma šam-kankal i-lāḥ (t)-bi (t) “the dung falls and šam-kankal sprouts (?)”; elsewhere, in Surpu v, 192, šam-kankal is described as binut šamme: “produce of herbage”; it springs up in temple-ruins (Langdon, BE. “A”, xxxii, 6, 10) or on the banks of a canal (atappu, Maqlā, iii, 178). It is also quoted in comparisons with cleanliness: “I shall be clean like ša-kankal” (Maqlā i, 25: cf. King, Magic, No. 11, 25: kima šam-kankal ȗbbitanni), and there is a tabu against “cutting thicket, woods, reeds, pulling up šamme (grass) (and) šam-kankal” (Surpu viii, 33). The special form šam-kankal mašil-Ea (or perhaps Ǝstar, 1 it not being certain which) šam-kankal, “the couch of Ea (or Ishtar),” if Ea be correct, indicates some kind of herbage submerged by the daily tidal ebb and flow of the canals in S. Babylonia, quite an ordinary occurrence there. I have often seen the grass on the side of the canals thus submerged. This frequent comparison with cleansing (for šam-kankal, as distinct from

1 Mašil Ǝstar “couch of Ishtar” is said of the [šam]epitum šadi, p. 4 C 41.
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and its connection with Ea as water suggests the coarse grass flooded by the tides, which the Arabs call locally saür.

But samkankal also grows on salt lands; "if ina eli tabi samkankal appears" (TR. ii, 51, rev. 1); it is also equated with sam ki-di (p. 4 (D), l. 16), i.e. "plant of the kidi" (the steppe, or what the Mosul Arab would call châl), and there is an omen: "When sam kidi appears in a city, that city will go to ruin" (TR. ii, 51, obv. 35; Gadd, CT. xxxviii, 5, 139). It is given (Boissier, BS. 1896, 136, 16) as one of many plants in ext. use against sorcery.

sam'aranu, one of the equivalents of samkankal, has a wider significance than merely coarse grass. P. 6, (K), l. 11, makes it equivalent to sam amoru "spurge" (a green weed), and ib. 10 sambalatu, the green flower of the spurge. (J) makes samramu (fennel) sam'aranu, sam'alami (p. 6), and sammamc all equal; and (K) gives other equivalences. One of the most important values is samkardu, which was compared to nard by Holma, KI. B. 75 (cf. Tallqvist, Maqlâ, 118). This is also used as a comparison for cleanliness: "I shall be clean, pure, like lardu" (Maqlâ i, 26); and cf. [k]inâ má še'tar larda kimâ mêtâ wittyan šisâbî "in the place of barley may (Arad) cause lardu to be, in place of water may he cause salt efflorescence" (King, "Boundary Stones 62, 11-12).

Nard "is the root of the ginger-grass, Cymbopogon schoenanthus... From the root of this grass was derived an oil which was used in Roman commerce medicinally and as a perfume, and as an astrigent in ointments. This is no doubt the nard found by the army of Alexander on its homeward march, in the country of the Gedrosians, of which Arrian says (Anabasis vi, 22): "This desert produces many odoriferous roots of nard, which the Phoenicians gathered; but much of it was trampled down by the army, and a sweet perfume was diffused far and wide over the land" (Schoff, Periplus 170). The Arabic sunbul "nard", Agrostis verticillata Vill., is a grass growing in Human and Mesopotamia (rivers) and is used as fodder (Von Opp. ii, 388; IB. 1237; cf. FP. ii, 729, sanbolah). Mat. 86, 7, 14 gives sam me ḍug-ga = ziq-qa = samla-ar-d[u]; here sanbul suggests the sweetness of the lardu, but ziqqu is difficult.

With arantu we might compare the Syr. 'ámirâ "grass" with a metathesis of m and r, with m changing to n before t, like pēnantu = Heb. pēlâm.

18. samAlapâ, samA-mes-sâs-A, sam Â-s-A-â-meš. It is a difficult question whether samAlapâ or samelpitu is the correct cognate for the Arab. halfâ, Poa multiforma and P. Cynosurooides, a high, coarse grass growing near water (Lane, Dict. 628; P. Persica Trin. was seen at Qala'ah Sherghat, Herzfeld, Beith. 35). The Aram. halfâ (with which I connected samelpitu in PSBA. 1906, 225, as also did Holma, KI. B. (1912, 92), the Arab. halfâ, is given the value of Eragrostis cynosuroides Roem. et Schult.,

1 Miessner, Beitr. ii, 10, would make sam'aranu the caper, which I think is very unlikely. (See also B. Landsberger, Pauwa 65 f.)

2 I was given sanbolâ as the Arab. name for a water-plant growing below the surface in Basrah, and eaten by cattle.

3 When such a change occurs the t usually becomes d. . . . a-ra-an-di occurs AM. 33, 1, 38.

4 I am now inclined to doubt that the Arab. 'alaf "hay" can be an alternative possibility (AH. 37).
either by itself or mixed in poultice; good for sore eyes, aZapu sa weed, since Culppeper Schonauthus Spr. (F.J. ib.) Apart from its possible philological connection with the Arab. haffa, the groups 6aM-A-MES-ŠA5-A and 6aM-ŠA5-A-A-MES indicate it definitely as a water plant, as also does qamumu nari. The passage in Kū, i, ii, 22 is equally definite; ... ikītu ki mē lītimi alapā nadī ēn1-pī-śu ... “darkness as the water of a ditch brings (t) alapū, so do his eyes . . .” (a prescription for eyes) tells us little more: here the alapū might be fed by the ditch as it grows on the bank, or it might be a water-weed obscuring the canal-bed. On the other hand, we have the equivalent 6am-isbubtu ḫirā “garden grass” or similar, which would indicate a plant of dry land, just as 6am-lat eqī probably does.

A second clue lies in the words 6am-hanni nāri, qamumu ša bērātī, 6am-miguq hannmu. I doubt if it can be connected with the Syr. hannmimā “hay” (from hannm “be hot”, the Assy. root for this being amāmu). Gadd, CT. xii, 45, 11-12 gives the equivalence ala-qa-u: ḫa-am-mu, ... KI-NĀ "NINN: ... (?) -ū-tū ma-a-a-al-tū ʾIstar. Landsberger (Fanna, 139) has a good note on it.

“(a) hannu [sic] ein Synonym von ḫusūbu: hannu u ḫusūbu etwa ‘Grashalm und Blatt’ als Symbol für minderwertigste Dinge: Bogh. St. 8, S. 16, 51; dazu Kommentar von Weidner mit Verweis auf K. 2022, Rs. 1, 3-7 (CT. 18, 45): hannu und ḫusūbu; Korn einschließlich seines hannu BB Nr. 260, 13, u. 25: ein Schwein trägt hannu in das Haus, bzw. aus dem Hause: CT. 38, 47, 50 = cbb. 45, 50 f. = CT. 30, 30, 8 unten; Kommentar dazu CT. 41, 31, 31: ha-mi = ḫa-ša-bi; qamumu = ḫa-ša-bi; dieses h. auch Thompson, Herbal 26, 591; u = ḫa-[mu], AN.BA = [ ... ] CT. 41, 49, ii, 4 f.; eqū ḫa-mi ma-bi CT. 12, 2, ii, 58.

“(b) hannu [sic] des Wassers: ein Fluss wird gereinigt durch nasābū der miqti und šubāl der hannu BB Nr. 43, 29, vgl. dazu qammi miqti hannmē HWB, 282; Thompson, Herbal 26, 594; durch diese Liste Z. 593 in Beziehung gesetzt zu alapā ‘Alge’; Wasser eines neu gegrabenen Brunnens ḫa-am-mu na-dū-u CT. 39, 22, 8.” His footnote 1 runs: “Für diese Ansetzung vgl. CT. 29, 14, 12 (nach ziqin nāri); alapā ša pan mē ‘der Wasseroberfläche’ AMT. 1, 2, 17; vgl. auch alapā = hannmī [. . . .] CT. 41, 45, 11; hat nichts mit elpettu ‘Schilf’ zu tun.—Z. 596 [of the Herbal] 6am-hammū ša ellepī = 6am-hammū ša bērātī, vgl. RA. 18, 4, Nr. 7, ii, 10 und 5, Nr. 9, iii, 10."

To this we may add the sign u-MU-UN (Br. 10275) (KL containing u-a) = ḫamumu ša mēpī, mišu ša mēpī, hannmu, pānu, and “ditto (u-MU-UN)” (D. 509) = hannmu, CT. xii, 26, ix-vii, 10 ff. Hannmu occurs twice in Scheil, RA. 1921, 4 (1, 6) and ii, 10, the latter followed by : ellepī.

Also to Landsberger’s examples we may add an important epigraph of Sennacherib (iii, r. 4, 4, 1 ff., Luckenbill, Annals of Sennacherib, 156).

1 On the alga see Rauwolf i, 116. It is possible that the sign Br. No. 10263 (i jammu) a “pool” containing the sign PĀR “white”, and equal also to alapī might be intended for the little water-ranunculus, with its white flowers, growing plentifully at Baarsh in 1915, but I am inclined to doubt it. P.C. (s.v. “Baghdad”) mentions the “floating crowfoot”. Mr. W. J. Rutherford has suggested to me that alapū ša pān mēpī of A.M. 1, 2, 17, 20, used in some head-trouble, may be a kind of duckweed, since Culpepper (Eng. Phys., 1814, 117) gives it as effectual to help inflammations, either by itself or mixed in a poultice; good for sore eyes, etc. “The fresh herb applied to the forehead easeth the pains of the headach coming of heat.”
GRASS, RUSHES, REEDS, CONVOLVULI

ina šadē" dannūti ša balū šari’ šamu ḫusabu ina libbi lušunu "gummi
dannūti ša "e'-'ri ina libbi šeru'uni "in the massive mountains wherein
are neither living thing nor vegetable nor hay nor chopped straw, wherein
tough brambles grow". For ḫusabu, see p. 18: "e'-'ri, as Luckenbill
apparently saw, is not the Heb. yā'ar "wood", but the Syr. yā'ra, 
epres, herba inutilis. Cf. Mat. 6, 18, e'-'ru, with ṭabu beneath it.

The vocabulary P. (p. 7), however, gives so many words describing
samalapu as a water-plant (particularly like grass) that we may reckon
its philological equivalent to be definitely the Arab. hālfā, and it may well
represent that species of Marisecus which Ainsworth (A. 134) describes
as elongatus, a solitary plant acting as umpire between the liquid and the
solid world in S. Babylonia. The sheath at the base of the leaves is shut
up, and the average length of the culm or stem is about 2 feet. It presents
a rich green carpet and a fine verdure in the flowering season (May). The
roots are fibrous. (Ainsworth says (A. 176) that to the north of Fueh,
about 15 miles from the embouchure of the river, the Cyparaceae
become more abundant in species, but Marisecus elongatus still
predominates.)

A final equivalent, "samak nāri" might be connected with the root
ekēlu, from which tikkitu "itch" (Syr. ḥekk'ṭhā, scabies) comes; (PRSM,
1924, 2). The same Syr. root (ḥakk) gives ḫākhākhā, also scabies, and
urtica "nettle", although there seems little to connect the Marisecus
with such a plant as the latter.

B. GRASS, RUSHES, REEDS, CONVOLVULI

1. ِگی, qanū, reed.
2. ِگی-دُج, qanū ta'bu, Acorus calamus L., Sweet Reed.
3. ِگی-بُع, p. 21.
4. ِگی-شِل-سَر, qan salah, "reed for weaving."

1. ِگی, qanū, the ordinary simple word for a reed, such as were placed
between bricks (Cyrus, Strassmaier, 255). The "worm from the middle
of a reed" (tāltu sa lib qanī) is used for toothache (AM. 105, 1, 16).

For gu-ur [qanī], the pith, see above, p. 12.

Qanū simply is used for a reed-pen: aban qanū (DACG, 191) "stone
of the reed(-pen)" is pumice, with which the pens were sharpened.
(On Indian pens see J. H. Burkill, in the Agricultural Ledger, Calcutta,
1909, No. 6, iii ff., quoted FJ.2 i, 677.) Both bil-lā (vinegar) and
shē-rū (shoots) are used alone for removing šimmati (poison) ("bray,
anoint in oil", according to a new Nineveh tablet). For the vinegar see
p. 10, where "vinegar of urbāte" is mentioned.

2. ِگی-دُج, qanū tabū, occurs thus in MT.:

(1) Simply: Ext.: Ears, alone, insert in oil, AM. 33, 1, 25. Feet,
†, [apply] hot, AM. 69, 2, 10: †, rub, AM. 70, 7, i, 11. Head (temples), †,
poultrice, CT. xxiii, 39, 7. Muscles of hands and feet, †, [use uncertain],
AM. 98, 3, 18. Cough (white or dry phlegm), †, poultrice, after rubbing
with cedar-oil, AM. 50, 3, 8: cf. 80, 1, 19. Stomach, †, anoint (?) , AM.
40, 5, 7, uncertain trouble, in the case of a child, anoint († (?) ), AM. 96,

1 See note 1, p. 18.
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2, 8. Flesh with simmatu ("poison") and rimatu (lassitude), †, bathe, AM. 52, 5, 4. Uncertain, †, bathe, AM. 94, 2, ii, 10.


Fumigate: Ears, †, AM. 33, 1, 31, dup. 35, 1, 7. Simmatu ("poison"), †, AM. 91, 1, 9.

Enema: †, AM. 43, 6, 6: 56, 1, 4, r. 6, and prob. 10: 94, 2, ii, 5: KAR. 157, r. 13.

Quantities: 10 shekels, AM. 84, 1, 3: KAR. 157, 27 (†, enema): 2 shekels, AM. 41, 1, iv, 13: 5 carats, AM. 10, 2, 3 (to be drunk?).

(2) Oil: (šammu), var. 1A-BAR-GA, as medium, AM. 54, 3, 5: sorcery, anoint with other oils, AM. 87, 1, 8, 12. Ears, AM. 35, 2, 11, part dup. KAR. 202, iv, 12.

(3) ZID (powder): poultice, †, AM. 19, 8, 4: †, KAR. 192, r. iii, 156.

(4) Hashallatu (acid juice): †, bind on, AM. 72, 2, r. 5.

(5) ... hansā ša liḫ ganni ṭabī, AM. 64, 1, 15 + 37, 1, 5.

A value passu is given for GI-DUG-GA (D. 55, 392, a).

A great many of the characteristics of this drug would lead us to identify it with Acorus calamus L., in spite of certain difficulties. EJ. i, 693, on the other hand, in discussing the Heb. qānēḥ hatṭōbb (which should philologically be the same plant), is inclined to think this association with A. calamus a mistake, and would, with Ascherson, make it Cymbopogon.

Again, Post (Hastings, DB. iv, 213) says that A. calamus is not indigenous to Syria or Palestine, nor can it be identified in the Lake of Homs or the swamps of the Upper Orontes, where Pliny (NH. xii, 48) places his "sweet-scented calamus", which, however, according to Fee (in Bostock's Pliny, iii, p. 144) is not the A. calamus, which is Pliny's Acoron (NH. xxv, 100).1

This latter, the Acoron, which grew in Colchis, Galatia, Pontus, and Crete, seems certainly to be the A. calamus (Fee, ib.; FHP. 676); Jeremiah's description of the qānēḥ hatṭōbb as coming from a far country would certainly be in accordance with this. The rhizome of the plant is imported into India from Persia (CPI. 24): it grows abundantly in Kashmir ("and the same is true of most if not all of the warm temperate tracts"), ib.). It is one of the commonest bazaar medicines in India (BMI. 13), which would at once allow us to accept it as an import into Mesopotamia, although I must admit I have no recollection of seeing it either growing or offered for sale in the bazaars.2

GI-DUG occurs between sixty and seventy times in AM., about half the number of times that we find burasu, the commonest drug of all. Its use in MT. certainly coincides with that of A. calamus in India in many ways, where the root has been employed in medicine since the time of Hippocrates (IMP. 1350). Just as the root of A. calamus is used in India for rubbing on the chest of a child with catarrh (IMP. 1350 ff.), so is GI-DUG used to rub on a child (disease uncertain). In India it is used ext. for bruises or rheumatism (ib.) or as a poultice (BMP. 536); in Assyria

1 Chesney, Expedition i, 537, speaks of a "sweet honied reed" in Syria.
2 Sugar-cane is out of the question. This occurred in the neighbourhood of Makrān and Khuzistan (end of first millennium A.D.), Heyd, Hist. du Commerce du Levant 38, quoting Ibn Haukal, Journal of R. Asiatic Soc. Bengal xx, 154, 161; xxi, 55.
GI-ŠAR was applied hot to the feet, used on hands and feet, and rubbed on for a cough. GI-DUḌ as a fumigation for "poison", and ears, is paralleled by the use of the rhizome of A. calamus to fumigate painful piles with bhang and ajowain (IMP. šb.). A. calamus in large doses (30 gr. and more) acts as an emetic (IMP. 1352) which would certainly seem to be indicated by the very small doses (5 carats) of GI-DUḌ prescribed by the Assyrian doctor above (AM. 10, 2, 3). Actually A. calamus is employed internally for flatulence, dyspepsia, and colic; in India for fever, and as a useful adjunct to tonic or purgative medicines (BMP. No. 279). Pomet (HD. 53) says that the Calamus aromaticus is used for diseases of the head, brain, nerves, womb, and joints. It is also used for catarrh, and ext. for bruises and rheumatism (IMP. ii, 1350 ff.).

It will be noted that qanuṭābū, like the A. calamus, has a special essential oil of its own, an essential oil being prepared from the Acorus-rhizome (PHP. 2 678) or from the leaves, used in England in preparation of a hair-powder (CPI. 24).

The ḫasqallatu, "inspissated acid juice" (see Ambix. 1938, ii, No. 1, 6, n.5) may here refer to the aromatic vinegar of the Acorus used in medicine (MPB. ii, 322: BMP. No. 279). It is just possible that the product "ḫanṣā of the heart of qanuṭābū (p. 20) may be the same, on the possibility of ḥanṣā being a doublet (borrowed?) of the Assyrian ensu "vinegar" (Heb. ḥômē): but it seems unlikely.

A talent (about 60 lb.) of qanam tābek is mentioned on an OB. letter (Kraus, MVAG. 36, 1932, 1, Altbab. Briefe, No. 3): cf. GI-DUḌ-GA, Kasite letter, Radau, BE. "A", xvii, 142.

3. GI-BU.

It is uncertain if we are dealing here with a medicinal plant. Apparently the PA (tops) of it occurs in an apothecary’s list, ADD. 1042, where it is included among PA of pomegranates, of grapes (?), of ṣṣ-AM (lemon (?)), mulberry, and with various plant-drugs (ṣamṣadamu, ṣamṣašumtu, ṣampišan kalbi, ṣamalammā, ṣam-DIL-BAT, Asa feita, roses, cedar, cypress, juniper, etc. (text re-examined, but the PA of it appears to be an unusual expression). ṢGI-BU occurs early (in Deimel, Orientalia xvi, 60, 70), and an omen is derived from its springing up in a field in a town, which undoubtedly shows that it is a plant (Gadd, CT. xxxix, 4, 26). It may be, as Deimel (l.c.) suggested, "bamboo," which would then explain the equivalence GI-BU = malilu "flute"; and perhaps the prescription for a suppository in KAR. 201, 20, which ends with . . .-da ṢGI-BU (in the preceding parallel text allananu, "suppository" is used) teppuṣ(uṣ) ṭūq₂₄ᵗₐ-tu-la-ba-āš ana ku-šu ṭasakan[an]"a GI-BU thou shalt make, wrap in cloth, insert in his fundament", perhaps as a means of introducing drugs into the anus, the cloth being added to ease the insertion.

GI-BU may perhaps be read qān markas "reed of knot(s)" , i.e. the knots on the bamboo.

4. GI-SUL-SAR, qan šalali.

This occurs thus in MT.

(1) Simply: Ext.: To assuage affected muscles of hands and feet, †, AM. 98, 3, 18: to rub feet, †, AM. 69, 2, 5. Blow (ništitti) on the "middle" (pelvis), †, poultice, AM. 79, 1, 12. Bathe, †, AM. 52, 5, 8: 98, 3, 3.
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Int.: "while yet green," †, AM. 23, 4, ii, 6.

(2) Seed: Poultice, †, AM. 95, 4, 5.

(3) ūr (root): for "poison" (šinnati) bray in cedar-oil, †, AM. 92, 6, 12.

(4) šē-rū (shoots): Feet, †, apply, AM. 74, iii, 3. Blow (mišitu), †, AM. 82, 2, 5 (ci-šul-šār damqer): †, KAR. 182, 19, "Poison of all limbs," †, AM. 91, 1, 6 (cf. Scheil, RT. xxiii, 1891, 134 ff.). To remove šinnati (poison) bray, anoint alone in oil (new Nineveh tablet). Sorcery, with 39 others, drink in wine or beer, AM. 89, 1, 7.

(5) xa (tops): Swelling, †, AM. 73, 1, 12.

(6) Gu-ur (pith) used with šē-rū ci-šul-sār, šē-rū gi and gu-ur [gi], to anoint temples (CT. xxiii, 41, 12 (dup. 20, 1, 44).

(7) bil-lā, vinegar, to remove šinnati (poison) bray, anoint alone in oil (Nineveh tablet).

The word šalali, in spite of the change from š to s must be connected with the Heb. root salal which appears in the Heb. sal "basket", Late-Heb. silsil "plait". The change of š to s is exactly paralleled in the Heb. sulām and the Assy. musšalu "stairway".

Here, then, we have qān šalali as "reed for plaiting", i.e. for making rush or reed mats, ropes, etc. At the same time we find qān šalali in a recipe for washing in such a way as to suggest that it is a scent. Which particular reed or rush it may be is difficult to say, but probably a Cyperus would fulfill the needs: the root of C. rotundus L. is regarded in India as diaphoretic, astringent, diuretic, and is used for disorders of the stomach; the fresh tubers are applied to the breast as a galactagogue. Arab. and Persian writers prescribe the drug ext. to ulcers (IMP. No. 1328). Equally the common rush (Juncaceæ) makes chair-bottoms, mats, and basket work, and the pith is used for lamps: the Typha angustifolia (bulrush) is used in N. India for ropes, mats, and baskets; Scirpus and others of the Cyperaceæ make chair-bottoms, mats, and thatch (EB. xivth ed., 19, 673).

Its properties as a cleansing plant stand out in the following: iv R. 26, 7, 30 ff. (the directions of Ea to Marduk) for a man suffering from "the heat and cold not good for the flesh". A vessel is to be filled with water from a pool, untouched by hand (washing), and tamarisk, mastic(al) (soapwort) qa-an ša-la-li uthuš garmunu (Salicornia alkali) and "mixed" (mazū) beer put therein, and then a ring of šarīru-gold; the man to be given pure water to drink, and then the water thus prepared is to be poured over him: then turmeric root is to be pulled up, pure salt and pure alkali pounded, fat of a crane (kurkit) brought from the mountains added to this, and the patient’s body rubbed seven times with it. Similar washing texts, including qan šalali with various other washing drugs (see p. 39) occur in CT. xvii, pl. 31, 30 ff. (Devils, ii, 107): CT. xvii, pl. 38, 30 ff. (Devils, ib. 141).

The question, therefore, is only whether it is a reed or rush calcined to ashes and thus used in the soap, or whether it is a scented reed added to make the soap fragrant. I am inclined to think the latter. It will be noticed that drugs indicated by the det. šarg are not included in these soaps, which would demand a scent soluble in water.
C. PLANTAIN


1. (A) Pl. 20, x-ix, 16 ff. :

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<tr>
<th>EME širî</th>
<th><em>sam</em> lišan kalbi</th>
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Lišan kalbi šAR occurs in MB., r. 60.

*sam* Lišan kalbi occurs thus in MT. :


"Green," alone, drink with rose-[water], AM. 49, 1, 11, catch-line of AM. 80, 1, 1 (the expression is not the usual "while it is yet green", but simply "green"): "while it is yet green," boil it like beans, and drink as a posset, alone, for a cough, AM. 80, 1, 8.

2. Seed: ext.: Temples, ṭ, poultice, CT. xxiii, 39, 2. Scab on head, ṭ, AM. 1, 2, 10 (in rose-water), 14 (in oil). Feet, ṭ, bind on, AM. 74, 1, iii, 9.

1 I think my copy must be wrong, and I have followed II R. 42, 4. [Original reads *EME.*]  
2 Of Pl. 37, K. 14120, 3.  
3 Re-examined: sic.  
4 Uncertain.
Lungs, †, poultice, AM. 55, 1, r. 5. Swelling, †, in rose-watter, AM. 79, 1, iv, 6 (+ 18, 5, r.). [Pustules], †, anoint with oil, AM. 7, 4, 15.

Powdered seed, applied locally, †, (blisters or sim.), KAR. 192, r. 2, 18.

Int.: Strangury. †, drink, AM. 59, 1, 27, 40. Retention, ( numérique) probably of urine, †, AM. 59, 1, 13: 60, 1, 4, 11: 89, 4, 8. Stone (or sim.), † (?), drink, AM. 60, 6, 1, 14. Pulpvis, with urinary or venereal trouble, †, drink, KAR. 193, 4 (cf. 22), cf. AM. 63, 1, 5. For ni-ne (trouble in menstruation), †, pour into woman’s urinary passage, KAR. 194, iv, 11. Stomachic, drink alone (?) in wine, Kū. ii, iii, 27.

Fumigate: dry, powder, †, for “poison” of limbs, AM. 91, 1, 8.

Quantity: . . sī-ša-gal-la, †, KAR. 155, ii, 3.

(3) Root: Mouth or tooth (ka-dib-ba-da), with anemone in kurumun-beer, drink, AM. 78, 1, 21 + 28, 7, 18, dup. 23, 2, 9). In pelvis, prob. urinary (cf. 1, 14), uncertain if int. or ext., †, AM. 63, 1, 5. Journicate, alone, drink, KAR. 203, iv, 62, dup. Scheil, RA. 1916, 37, 32 (tanabal mépl ... ): alone, drink in beer, Kū. iii, iii, 23. Stomach (“which, when thou rootest it out, has not seen the sun”), alone in wine, drink, Kū. ii, iii, 25 (cf. Lutz, AJSL. 1919, 82, iii, 69, simple samlisan kalbi “which, when thou rootest it out, [has not seen] the sun”, dry, bray, drink alone in Lū-TIN-NA-beer for stone in the kidney.

(4) šē-rū (shoots), prob. liver, uncertain, Kū. iii, ii, 7.

(5) Water: Eyes, †, apply in copper dust (or water of Lepidium), AM. 11, 2, 28. samlisan kalbi, a drug for a cough (jahi), squeeze its waters ..., drink, KAR. 203, iv, 47 (cf. 35, dup. D.T. 136, Pl. 31).

Next we can consider the indications of sarnur-pi-pi :

K. 9182 (Pl. 33) + 79–7, 8, 188 (CT. xviii, 21) (joined by Langdon and published by him in RA. 1916, 33, see also Meissner, MVAG. 1904, 3, 19): Pl. 4, ix, 9 ff.: and cf. Mat. 86, 7–9, 1 ff. (see below): cf. also Pl. 35, K. 14111:

<table>
<thead>
<tr>
<th>šam</th>
<th>DīM-ME</th>
<th>šam-me lā-maš-ti</th>
<th>šam-me tur-ti</th>
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<tr>
<td>šam</td>
<td>Kā-Mūš-NI-Kū-E</td>
<td>šam-me 2 pa-riti</td>
<td>hol-ba-uk-ka-tum</td>
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<td>AM-SI-HAR-RA-NA 3</td>
<td>ka-zal-te-ru 4</td>
<td>uz-na-na-tum</td>
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<td>šam</td>
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<td>[ū-zu]-un la-li-e</td>
<td>”</td>
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<tr>
<td>šam</td>
<td>UR-PI-PI</td>
<td>[a-r]i-ba-nu 6</td>
<td>šepā e-ri-b[i (?)]</td>
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<tr>
<td>šam</td>
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<td>[ha]-hu-ū</td>
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<tr>
<td>šam</td>
<td>”</td>
<td>[li]-biš-tum</td>
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</table>

1 šikirti (ti) (?)
2 šā Pl. 4, K. 4182, pa-riti-ti.
4 I cannot think that the šamka-ni-tu as equivalent for šam AM-SI-HAR-RA-AN is right (Langdon, Lc. 34, quoting from p. 31), šamKantbi is unknown elsewhere.
5 I think Langdon is incorrect in reading uz-na-nu.
6 Mat. 88, v, 27 (see p. 452) gives šam ribiškin.
7 Mat. 86, bi.
That this follows the sahlānu-group and precedes the šimāḥu group, is certain from *VM.*, Mat. 88, ii, 15 where

|samUR-PI-PI | samme-me-tu |
|sam-sa-lam a (?)-zi | sam |
|samša-mu mar-tu | sam |
|samAŠ-ME-ME | sam |

precedes

|samUR-PI-PI | samme-me-tu |
|samša-lam a (?)-zi | sam |
|samša-mu mar-tu | sam |
|samAŠ-ME-ME | sam |

That this follows the sahlānu-group and precedes the šimāḥu group, is certain from *VM.*, Mat. 88, ii, 15 where

precedes

1 Or perhaps *sam-me (e-li-t-tu) kal-li (?)...* with l. 20 below.

2 See p. 24, l. 15.


4 Doubtful if there is a character here at all.
Drug” (cf. the distinction shown by marra-tuin: (or marru-tum) in the phrase “time of bitterness” of the Opium, p. 227).  
$tamUR$(UR)-PI-PI occurs thus in MT:  


Int.: After binding poultice on eyes, [drink] $tامUR-PI-PI$ with nitre ($ļamPAR$) and Salicorne-alkali without a meal, AM. 8; 7, 2. Perhaps ($ļam[UR] . . . ) with soapwort ($ļammastakol$) and thyme, drink without a meal, AM. 75, 1, iv, 13.  

(2) Seed: Feet, bind on ($tامUR-PI-PI$) with seed of Hyoscyamus and seed of $ļamlišan kalbi$ in rose-water, and (then) rub with oil, AM. 74, iii, 9.  


(4) Root: Feet ($tامUR-PI-PI$) with seed of tamarisk, bray, apply, AM. 74, iii, 4.

Now the natural identification of the former, $ļamlišan kalbi$ “hound’s tongue” would be with the Cynoglossum (see Kii. 76), while that for $tامUR-PI-PI$, which has the value (p. 24) uzun lale “kid’s ears”, exactly parallel to the Arabic ădān al-jady “kid’s ears”, as plantain (IB. 39), would be with some species of Plantago. But between these two, the Cynoglossum and Plantago, there has always been a confusion, which we first find in Assyrian times: Pl. 18, xvi-xv, 22 gives [$ļamUR$]-PI-PI utliš $ļamlišan kalbi$ (presuming the correctness of the restoration, as I am now inclined, from a re-examination of the tablet in 1922, when I thought it might be [$ļamAS$]-PI-PI), i.e. “[tāmUR]-PI-PI in common speech = $ļamlišan kalbi$”. In Arabic the plant līsān al-kalb represents both Cynoglossum and Plantago major L. FP. 2, ii, 250 and 417 (Dios. ii, 152, and Sprengel’s Comment. ii, 465, shows a similar confusion). IB. 2027 makes līsān al-kalb = Plantago major or Lapathum (sorrel): Ascherson (quoted FJ. iii, 64) heard it used for P. major in the Smaller Oasis. We shall, therefore, not be wrong in accepting a confusion in Assyria between Cynoglossum and Plantago. It should, however, be possible so far to unravel the different strands in the evidence provided by cuneiform, and to trace the original contrast between the two. 

$tامLišan kalbi$ is used about six times as often in MT. as $tامUR-PI-PI$: the difference between the two is thus:

(a) $tامLišan kalbi$, simply, seed, root, shoots, water, “green,” and in fumigation: int. for stomachic, and urinary troubles, jaundice, child-birth, menstruation, cough, and ext. for swellings and as poultice and eyes. As an amulet it is used for snake or dog bites.

1 Martu is restored from Pl. 37, 61-2-4, 264, 4-6:

\[
\begin{array}{l}
\text{tām}sah-\text{hi-c} \\
\text{tām}me-ne-fu \\
\text{tām}nar-tu \text{tam} \\
\text{tām}si-ma-\text{hu} \\
\text{tām} \\
\end{array}
\]

2 Cf. also the Arabic widnah for Plantago Lagopus L., and udainah for P. Coronopus L. (FP. 2 ii, 420, 421).
(b) *samUR-pi-pi*, rarely *int.*, and usually *ext.* as poultice. There would appear to be some "bitterness" about this plant.

*P. major* L. is used in India for dysentery and as stimulant (seeds), and as febrifuge (root and leaves) (*IMP.* ii, 1049 *ff.*), and in China the seeds are used as diuretic. Hill (*Useful Family-Herbal 304*) says that the whole plant is used, a decoction in water being excellent against menorrhagia, purgings, etc., and the seeds beaten to a powder are used against the whites. Pliny, *NH.* xxv, 77, says that the *Plantago* is useful for the bites of all animals, either *ext.* or *int.* In Tuscany the leaves are used as an eye-wash (*IMP.* ii, 1050). *IB.* 2022 gives *P. major* also the name of *lisān al-hamal*, prescribing it for ulcers, and internally.

It will thus be seen that *P. major* coincides well with *samlišan kalbi*. On the other hand there are facts about *Cynoglossum* which suggest that it may well represent the Assyrian plant. According to LPG. (178) the *Cynoglossum* is really deleterious, but the harmful qualities disappear in desiccation. Its mucilaginous property is useful for coughs; it is regarded as anodyne and sedative, and useful for diarrhoea, dysentery, and fluxes. Its leaves provide poultices and the fresh roots are applied to burns and goitres. It is also used against lice. Moreover, its very name is strong evidence (*cf.* *NH.* xxv, 41, which says that *Cynoglossum*, *C. officinale* L., has a leaf which resembles a dog’s tongue, the root being used for fevers). Actually in modern medicine the *Cynoglossum* is accepted in certain Pharmacopeias as official (*P.* 472), but *Plantago* is not in *P.* at all, although the species *P. decumbens* Forsk. is found in Indian bazaars (*FHP.* ii, 490), the seeds being prescribed in decoction as a cooling, demulcent drink, or powdered and mixed with sugar for chronic diarrhoea.

The modern Arabic *lisān al-kharūf* "sheep’s tongue" is given by Dozy for *Plantago*. There are numerous kinds of *Plantago* in Syria, and two forms of *Cynoglossum*, *FP.* ii, 416 and 250. Any mucilage is doubtless represented by *GISAL-EN-NA-ŠAR*, since *GISAL* = *natāku* "trickle".

*SamAstabelan[u] = samlišan kalbi* (*Pl.* 46, *Rm.* ii, 203, r. 6), and is thus a form of this plant, its kinship to *samāstabelu* (= *samAš-pi-pi*) indicating its association with *samAš-pi-pi*, which is actually a few lines lower down from *samUR-pi-pi* on p. 25 (see p. 255).

Of other species, the seeds of *P. ovata* Forsk. are used for renal affections and in poultices for rheumatic swellings (*IMP.* ii, 1051 *ff.*): a mucilage and paste of *P. psyllium* L. is used with other drugs in urinary disorders and dysentery (*BMM.* 458), and its other properties resemble those of *P. ispaghula* (the seeds of which are applied to rheumatism), the seeds being used as an astringent in dysentery. It is used also for coughs (*ib.* 459). In *AH.* I had taken *samlišan kalbi* to be more probably *Armo­glossum* than *Cynoglossum*; the confusion between these two and *Plantago* will be obvious.
II

A—C. ALKALIS AND SOAPWORTS
A. ALKALIS AND SOAPWORTS

1. sumerian "alkali, uḫulu, alkali.

2. "horned alkali".  

1. (A) Pl. 34, K. 4365 + Pl. 27, K. 4621:

| 16. sumerian "alkali" | ṣa-na-[i]-tu(m)  
|  | ṣa-ka-ṣa-n[i]-tu(m)  
| 20. "horned alkali" | ṣa-na-[i]-tu(m)  
|  | ṣa-ka-ṣa-n[i]-tu(m)  

(B) VAT. 9000: CT. xxxvii, 30, ii, 33, 108860: Pl. 24, K. 4412, r. 23:

| sumerian "alkali" | ṣa-na-[i]-tu(m)  
|  | ṣa-ka-ṣa-n[i]-tu(m)  

The sign ṫē is explained in CT. xi, 45, i, 6:

| te-e | ṫē | ū-na-qa-te-nu-u | man-gu  
| qa-gu-lum  
| ša-me-tu  

1 From CT. xi, 45, i-iii, 6–8 (see bottom of this p.).
2 VAT. 9000 has a gloss which Pick read li-um. I am not quite sure of it from the photograph, but it may be so.  
3 Pl. 24, [sa]-ṣa-gi-la-tú.  
4 108860 for this line has sumerian  
5 Line not on VAT. 9000.
Both ṣṭal and ṣṭal qarmānū occur in MT.

1. ṣṭal (no determinative):

Simply: cleanse mouth (along with alun and ᵕmarshal (nitré)), AM. 54, 1, r. 9. 1 shekel as part of an elaborate enema, †, AM. 41, 1, 18. Cf. ½ ma (na) ṣṭal [šu] . . ., †, enema, AM. 56, 5, r. 2.

2. (a) ṣṭal qarmānū šar:

Fumigate with black sulphur, hart's horn, etc., AM. 98, 1, 2, dup. 99, 3, r. 20.
(b) ṣṭal qarmānū:

Simply: Ext. : 3 gr. with 3 gr. of gum of scammony and 3 gr. of lizard's dung, steeped in goats' milk, bind on, AM. 9, 1, 30 : †, uncertain use, AM. 16, 1, 8 : †, apply, AM. 17, 4, 9 : 19, 6, 12. Wash eyebrows (or eyelashes) alone, CT. xxi, 26, 6. Tooth or mouth (Ka-di-il-di-da), †, [apply], AM. 78, 1, 30. Cough, †, bind on, AM. 50, 3, 3. Strangury, (?), †, bind tip [of penis (?)], AM. 60, 1, 1, 5. Blains (ṣīggaṭi), †, bind on, AM. 32, 5, 5. Swollen heel, †, bind on, AM. 73, 1, 16.

Suppository: †, AM. 57, 5, r. 8, 12 (or enema).

Enema: †, KAR. 157, r. 15 : †, AM. 56, 1, 14 (3 mana) : †, ib. r. 7 : †, AM. 57, 5, r. 2 (3 qa) : †, AM. 94, 2, 4, 9 : †, KAR. 157, r. 26. Put to anus, †, AM. 53, 9, 11.

Bathe, †, AM. 94, 2, ii, 9 : †, 98, 3, 3. As soap (with Ricinus) in hot water, wash head, AM. 3, 5, 9.

Fumigate: Hand of Ghost, †, AM. 93, 1, 11 : for Ghost lying on patient, 10 shekels, with 10 shekels of Ṣennūa, and mw. . . . (no amount), AM. 99, 3, 17 : for similar, †, ib. 19 : for similar (temples), †, AM. 103, 19. Adjective applied, [fumigate,] qalūti, †, AM. 7, 7, 4.

(3) Water: alone, bathe feet, AM. 74, ii, 36.

Int.: Stomachic, †, uncertain, probably drink, †, AM. 39, 1, 35 : 40, 1, 48. Prob. for stone, 1 shekel, †, apparently drink, AM. 89, 4, r. 1. Urinary trouble, with mw-sāḥar-kur-bal in oil, introduce into urinary passage by a bronze tube, Lutz, AJSL. 1919, 81, l. 104.

Quantity: besides those given above, 2 shekels, AM. 5, 7, 5.

Its chief use, either as simple ṭē or ṭē-sī ("horned ") is ext., for eyes, eyebrows (or lashes), mouth, head, swollen heels, blains, and bathing generally, but it can be used int. for stomach, and perhaps stone, and it is fairly common in fumigations or enemata. It has long been identified with the Syr. 'aḥlā "lye" (HWB. s.v.), which represents the Arabic ṣunān, well known in the Mesopotamian bazaars. Ṣunān, usnān, is applied apparently to several soda-plants (e.g. Arthrocnemum glacumum (Dal.) Ung. Sternb. = Anabasis articulata Mg.T.: Salsola L.), F.J. i, 647 (on the Arabic and other words for soap-plants see ib. 637 ff. and p. 33). It is described by Chesney (Exp. i, 574, cf. 593), in his speaking of "sheinan and el kali", the soap-plants found in the deserts east of Palmyra, El-'Asha, and Nejd, the Arabs still obtaining lye from their ashes (cf. Von Opp. ii, 386, between Damascus and Palmyra). Rauwolf (i, 33) says that at Tripoli there are ashes made chiefly of a herb called schirnan,1 whereof there are two sorts, one not unlike the other, the has many stalks which are full of knots like our equisetum (cf. his description of the well-known soap-products of Tripoli, ib. 34). The ṣunān which I

1 Evidently a mistake for šenān.
have seen in Mesopotamian bazars is rather like small, dry pieces of vermecilli, about ½ in. long. I was told that it dried on the bush, and came from Suq esh-Sheyukh (on the south side of the Khor el-Ifamar). Major W. C. F. Wilson was so good as to send me some specimens of it from Mosul, as well as specimens of the jilu or jilu 1 which is the result of burning this ṣuṇān. The jilu is in irregular lumps, light in weight, and about the content of an ordinary small cubic lump of sugar (as we have it in England), and obviously has been calcined, being of a light grey colour, friable, and easily broken. In using it for washing purposes the Arabs, so Major Wilson tells me, take 2 parts of ṣuṇān to 1 part of jilu, the former being crushed to powder and then placed in a thin muslin cloth, and the whole then immersed in boiling water for a few minutes. To the foam thus produced cold water is added, and the clothes are then washed in it.

With this description of the soda plants we can go on to the specialized uḥulu garranu “horned alkali”, garranu being explained as “horned” by Küchler (Kü. 96, 106; cf. Jastrow, TOPP. 378). The word occurs as garranā in Syriac applied to the poppy, i.e. one of the “horned” kinds (FJ. ii, 366; cf. FP.2 i, 37 ff.). Clearly it is descriptive of Salicornia, the name of two species of Chenopodiaceae abounding in soda (the name is

1 A cognate word is ḥilah, the name of a small village on the Kbor, about two miles north-east of Kouryunjik. It takes its name from the local grey clay which is used for washing garments; there is also a red clay which would appear to have been used for the royal tablets of Nineveh (Arch. 1929, 114, 148: CEN. 134).


3 Seifenpfanzen in Palastina nach Hasade 10,386: Anabasis articulata (Forsk.) Moq.; Arisarum vulgare Targ., die Knolle; Hedera helix L., Blätter und Beeren; Leontice leontopetalum L.; Mesembryantheum crystallinum L.; M. nodiflorum L.; Salicornia herbacea L.; Salsolo Sua S. Kali L.; Suaeda fruticosa L.; Saponaria vaccaria L.” (FP. iv, 117). (For some of the above, more fully dealt with, because of their probable equivalence with ṣuṇān, ṣawāfīr, see p. 45 f.) Airsworth (Travels ii, 301) mentions a species of Salosa at Umayyah. Salicornia fruticosa L. occurs in Sinai, etc., and S. herbacea L. in various parts of Syria (FP.2 ii, 440-1).
the Latin sal, salt, and cornu, a horn, from the alkaline salt in which it abounds, and the horn-shaped branches, C. A. Johns, *Flowers of the Field*, 530).

It would seem, therefore, that there is no doubt about the *uhulu* and the *uhulu qarnanu* as being species of the Chenopodiaceae alkalis.

Note the sulphur-soap in a ritual to cleanse a man from the anger of another as typified by the spittle spat by the enemy as he went by:

```
"rigli (turpentine), kia-[D] (sulphur) uhulu qarnanitu (so in ll. 12, 31, 'horned alkali') thou shalt take, bray together, put in water and recite the incantation: 'O! my alkali, horned alkali' over (this); this water shalt thou pour on this spittle and oil in a mizu 2-bowl of isu-wood (willow) thou shalt take; this 'ointment' thetein thou shalt put, recite the incantation over (it), and with this oil anoint all thy body, and the man who is angry with thee shall be appeased, and the speech of thy mouth against him shall be kindly’ (KAR. 43, 10, dup. 63, 10).
```

My friend the Rev. A. S. Herbert kindly pointed out to me that *rigli* as a turpentine will not form a soap with alkali; the soap is completed with the oil mentioned subsequently. The effect of the turpentine must either be (a) to dissolve the sulphur, which would be insoluble in water:

```
'sulphur is insoluble in alcohol, but soluble in oils, both fixed, such as linseed, and volatile, such as turpentine; with the former of which it forms balsamum sulphuris turpentinum, with the latter the balsamum sulphuris terebinthatum' (PC. xxiii, 259).
```

"In workhouse practice, the preferable mode of employing sulphur is by uniting it with soft soap" (ib.)

The proportions of a soap, 1 qa of isu (oil) and 5½ qa of uhulu (alkali). Another for washing wool apparently was made with wood-ash:

```
e.g. after several totals of wool, oil, isu-nun (bimett-ghee), dates, and copper, we find 'total 4 talents 2 mana of goats' hair, total ½ qa good bimett-ghee, isu-ki-ib (its charcoal) 1½ shekels' (AT. No. 50, i, 7 ff., iv, 7 ff., DACG. 78).
```

It corresponds to the beech-ash used in *certae* early soaps (EB., xith ed., s.v. "Soap") and is here probably the tamarisk (see p. 40).

Much earlier soaps are mentioned (a) by Gudea (see Thureau-Dangin, *ISA.* and *SAK.*, Cyl. B. ix, 6) A ku-qi-da te el-e-da (7) iå bur-bar-bar-ra te ê-nun-qa-da, wherein, as can be seen, water, alkali, and oil are all mentioned: and (b) (see De Genouillac, RA. 1909, 113, 3rd Dyn. of Ur) the proportions of a soap, 1 qa of isu (oil) and 5½ qa of uhulu (alkali).

Another for washing wool apparently was made with wood-ash:

```
e.g. after several totals of wool, oil, isu-nun (bimett-ghee), dates, and copper, we find 'total 4 talents 2 mana of goats' hair, total ½ qa good bimett-ghee, isu-ki-ib (its charcoal) 1½ shekels' (AT. No. 50, i, 7 ff., iv, 7 ff., DACG. 78).
```

It corresponds to the beech-ash used in *certae* early soaps (EB., xith ed., s.v. "Soap") and is here probably the tamarisk (see p. 40).

Medicinally we find a form of alkali used in India (*Salicornia brachiata* Roxb.); the leaves of *Sueda fruticosa* Forsk. are applied as a poultice in ophthalmia, and are infused in water as an emetic (IMP. 1068-9). Gerarde (429) recommends *Salicornia* for provoking urine, and for bringing forth a dead child from the womb, and the ashes for removing scabs.

In the cuneiform glass-texts of the seventh century digmen *suanuhuli* "ash of alkali", digmina *sa* *suanuhuli* *qarnani*, *suanuhuli*, and *suanuhuli* *garsu* 'a taiaaru (sharp pieces, not round lumps) are the kinds used. The proportions prescribed appear to represent the amount of alkali calculated before

1 Postpositive *ia* appears almost to have the value of a vocative, curiously like the propositive Arab. *i6*; cf. OE. *i6*, "iulanniai ki66a-kia ik ni66a," "O iulanii, etc."*, KAR. 122, 14, *Tia-me-ibna-ia*.

2 Examination of a parallel phrase in King, *Magic*, No. 12, 8, suggests *nap66a* "anointing bowl".
calcining takes place (DACG. 15 ff.). On the other hand, in the glass-
text of the seventeenth century B.C., alkali is not mentioned, but zukū,
an alkaline glaze, is one of the components (DACG. 197).

The method of obtaining alkali from *Salicornia brachiata* Roxb.,
*Suaeda fruticosa* Forsk., and *S. monoica* Forsk. in India is to burn the
sundried plants in pits, the alkali thus fused collecting at the bottom,
becoming "barilla" ready for export (IMP. 1069). Bacon (quoted by
Fowler, Arch. 1881, xlvi, 95, note) says that the ashes of kali growing in
the desert between Alexandria and Rosetta were compressed into masses
like stones and sold to the Venetians for making glass.

The other Assyrian words for alkali (p. 31 ff.) are:
(1) *samQiltu*, obviously the Arab. *qily*, alkali, the calcined *sunān* (*jilu, julu, qilu* of mod. Mesopotamia), from *qalā* "to calcine". (*samqiltu*,
like *ahlulu*, can have the attribute *garni.*)
(2) *sāmSagilatu*, distinct from *sāmsuggilatu* (p. 31). It must, of
course, from its association here, be an alkali, and therefore cannot be
the *Syr. segittādah*, Cyperus (Zimmern, AF. 58), and may well be the Aram.
*sayē*, an alkaline plant (AH. 116), or even more probably Arab. *aslaj*,
a soap, *FJ. i*, 649. *sāsKu-NIM*, built up of *Ku* (= *zid*) "powder", and
*NIM" "buzzing fly" (paralleled by NIM in *ebarza-NIM*, for which I suggested
in *DACG.* 140 "stone effervescing under acid"), probably "effervescing
powder", i.e. the bubbling lather of soap.
(3) *sāmPir kalbi*. I doubt if *pir* can be referred to *pir'u* "offspring",
as *BAG. 226* suggests. Cf. *fis al-kištāb*, *Chenopodium album* L., *FJ.* ii, 430; if, however, it be one of the *Chenopodiaceae* other than the soda-
productive plants, it may be the link between this register and the next
which contains a fresh group of this genus. If *sāmpir kalbi* should mean
"dog's eructation" (from *pararu* "break", i.e. wind) it would suggest
the *Chenopodium vulvaria* "Stinking Goosefoot". *sāmPi-ir kalbi* occurs
in Schell, RA. 1921, 4, No. 7, Col. ii. (See, however, *sāmPI-PI-nu-nu*,
p. 38).
(4) *sāmMangu*, (5) *sāmsameţu*, (6) *sāmqaqulu*.

With *sāmPir kalbi* the register of *Salicornia* and *Salsola* comes to an
end, but from the Sumerian column of our texts the sign *Ti* still indicates
the plants in the following register. Here, again, we must see plants allied
to the soda-plants, the Assyrian botanist being alert to the similarities of
all the species of *Chenopodiaceae*.

*sāmMangu* was identified with the Syr. *magqā*, *Phaseolus Mungo* L.,
by Meissner (Z.A. vi, 293; cf. *FJ.* ii, 468). Similarly he identified *sāmqaqulu*
with the Aram. *qāqūlād*, *Cardanusum* or *Nasturtium*, a kind of cress eaten by
the poor (Jastrow, DT. 1409) (= *qāqūlag*, Brock., 335). These two, with

I am inclined to think, however, that the presence on the lists on
p. 31 of the sign *Te* compels us to refer these plants to some sort of
alkalis, and therefore that we should see in *sāmMangu* the Arab. *mārjo*
"soda", *qali*-plant, *Suaeda fruticosa* Forsk. (Dozy, Supp. ii, 578), in
spite of the Syr. *magqā*, *Phaseolus Mungo* L., Arab. *manaj* (= *šamutu*, *šimittu*?).

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1 The difficulty is in the rendering, whether we are to see *Nasturtium* or *Amaltaste* (= *šamutu*, *šimittu*?).
green peas”, the Mungo of Clusius (Dozy, ib. 617). *šām* Qąqulu may equally well be the Arab. ḡąqulu, *Salsola fruticosa* L. (Suáeda fruticosa Forsk.) of Iraq (Dozy, ib. 296: PS. 3710), which in SM. ii, 721 finds the explanation in (Syr.) *mallāḥa* = usnān al-ḡąqulu (Vol. i, 606 ‘āthānādā wmr-ḡąqulu). 1B. 1725 says that ḡąqulu is eaten with milk, resembles soda, and its leaves are like cultivated cress (has he here a reminiscence of ḡąqulu = Cardamom?). Rašī (Job. 30, 4) gives the Heb. *mallāḥa* = Aram. ḡąqulīn (F.J. i, 649, 650, g.v., for ḡąqulī = usnān).

On the other hand it is possible that in the MB. group Meissner was right, and that we have doubles of both *mάngu* and *qaqulī*, the former as "bean" and the latter as "cress," their counterparts being, as I have suggested, words for alkaline plants. *Ṣātā ṣār* I cannot identify; *laḥlāḥa* ṣār is perhaps the Arab. *lablāb*, *Silybium Marianum* Gaertn. (Dozy, ib. 521), *Carduus syriacus* (see Forskål, *Flora Eg.*, lxviii = *Notobasis syriaca* L., *FP.* 2 ii, 92).

Our last alkali-word *šām*[š]αmeṭu may be compared to the Arab. suwa'idī (Suáeda vera Forsk.). *šām*[š]α-mīṭ occurs in a *marḥaṣ* (lotion), † in beer, KAR. 202, iv, 43.

B. ALKALIS AND SOAPWORTS


(A) Pl. 18, K. 4354, r. xvi-xv:

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><em>šām</em>[š]ī Gāb-Bur ²</td>
<td><em>šām</em>[š]ī Ka ³-Zal</td>
<td></td>
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<tr>
<td><em>šām</em>[š]ī Gū-ID</td>
<td><em>šām</em>[š]ī Zīd Mā-lah(Du-Du)</td>
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<tr>
<td><em>šām</em>[š]ī Kū-SA A-Ab-Ba</td>
<td><em>šām</em>[š]ī Ku-SA <em>ša</em>-a-me ⁴</td>
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</tr>
<tr>
<td><em>šām</em>[š]ī-hu-lap ut-liš</td>
<td><em>šām</em>[š]ī-mi-pa-nu ut-liš</td>
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(For the continuation see p. 175.)

I had, I confess, been led to consider the possibility of much of this group being the Caper, *Capparis spinosa* L., parallel to the *šām*[š]altu-group (p. 175). There were certainly some reasons for considering this as a possibility; the name *šām*[š]al-Bur in comparison with the Syr. *qappar*, the word *šām*[š]irī ṣār in comparison with the Syr. *parḥā* “caper,” and *šām*[š]al-lap in comparison with the word *šām*[š]a-Sī-A-Sī, *akulabak* equivalent to *šām*[š]altu “caper” (Thureau-Dangin, RA. 1919, 169).

¹ Re-examined; fairly certain.
² *šām*[š]al-Bur beginning a section of three plants only, *Mat.* 88, 5, 49.
³ Probably in *Mat.* 88, 5, 50.
⁴ Scheil, *RA.* 1921, 5, No. 9, i, 3, *šām*[š]ku-SA ia-me.
But actually this, however attractive, cannot be maintained. For one thing, it is unlikely that there would be two different groups meaning "caper" without any connecting link. For another, šamgal-bur would be a slender piece of evidence as a philological comparison; and finally the Syr. pardī has also the value "flower". The most serious evidence is that of šan-aṣr-aṣ which is definitely šan-balitu, and its equivalent aḥulabaku is practically the same as šamalulap, which is given in our text above as "in common speech šan-pūhī šar, whereof the shoots are young and tender". Even here, however, we have to consider that šamalulap is quoted "in common speech", and it is not exactly aḥulabaku.

The clue lies in the probable connection of šanžid mà-lah with the Heb. malluš, generally taken to be Atriplex halimus L. Indeed, from p. 15, 38 it is not improbable that we have also to consider šanmallāšt, a spinach, as closely allied, even if not exactly equal to šanžid mà-lah. That this in some measure fits the Heb. malluš will be obvious; "The Atriplex halimus has undoubtedly the best claim to represent the Malluah, as Bochart (Hieroz. ii. 223) and before him Drusius (Quæst. Hebr. i. qu. 17) have proved... The Greek word used by the LXX is applied by Dioscorides (i.e. 120) to the Atriplex halimus, as Sprengel (Comment. in l.c.) has shown. Dioscorides says of the plant that "it is a shrub which is used for hedges, and resembles the Rhamnus, being white and without thorns; its leaves are like those of the olive, but broader and smoother, they are cooked as vegetables, the plant grows near the sea and in hedges."... The Hebrew name, like the Greek, has reference either to the locality where the plant grows—"nomen graecum a loco natali ążap, ąparadλαιασίον," says Sprengel—or to its saline taste. ... it grows on the sea-coast in Greece, Arabia, Syria, etc." (Smith, DB. ii, 215). FCH. 38 says: "The Qṣaf of the desert is Atriplex halimus, which grows down by the Dead Sea in silvery scurfy bushes and the leaves of which we suppose, as those of other wild Oraches, are edible when young."

Most interesting are the two names "Fox-Flour" and "Sailor's-Flour" which have evidently arisen from the scurfy or powdery deposit on the plant. For instance, Bentham (Hdbk. to the British Flora, 1858, 441) describes the Atriplex (Orache) as "herbs or undershrubs, often covered with a grey or white scaly meal"; especially note the Wild Spinach ("Good King Henry", Chenopodium bonus Henricus L.).1 "The stalks... are... covered with a whitish powder, which is likewise found on the underside of the leaves" (VK. 304). (In Lincolnshire this is cultivated and preferred to the common spinach, ib.)

Its other Assyrian names correspond: "Bank of the River," "Offspring of the Flood," "ku-sa of the Sea," all show its maritime connection, and its descriptive epithet "Star of the Sea" doubtless represents the five-petalled flower of the Atriplex halimus as given in Smith's DB., i.e. (similar to the šamšil-bat "Venus-flower", p. 43). šam Aḥulap, as a name in the mouth of the common people, must be a punning derivative of ąḥulu, the general name for the alkaline plants (to

1 Cf. also Atriplex rosea L., "on the sea-coasts, and in the saline districts, of Europe, Asia, and Africa" (Bentham, Hdbk. 443) "much more covered with a white scaly meal." For šem-ka-zal see p. 15.
which the Chenopodiales belong: cf. Löw, *Ar. Pfl.*, 42, which discusses the *mulādaḥ* along with the *ahidā, uhlā*. The sense "How-long-plant" doubtless had some popular explanation; here, too, the description "*sampirhi šar, its shoots young and tender*" (similar to the description of opium, p. 229) certainly fits in with the young shoots of the spinach. *samgās-bur*, resolved into its Sumerian values, might mean *epū + naptānn "cook + a meal"*, which is borne out by the song of the fellahin of Palestine, "Without the Hedge Mustard and Spinach the Bedu would be plucked bare," *i.e.* the Bedu without such wild food would be shrunk away to nothing, so valuable to them are the two plants (*FCB. ib.*).

If *sam-pi-pi-nu-nu* ("Fish-pi-pi-plant") belongs to this group, as presumably it does, and if we are to see in this word a reference to the smell (see p. 35) this may be the Stinking Goosefoot, *Chenopodium Vulvaria* L. (Europe and Western Asia, "remarkable for a strong, stale-fish smell when rubbed" (Bentham, *Hdbk. 348).

We may, therefore, accept *samšID MĀ-LAH*, with its synonyms as *Atriplex halimus*, although the other spinach, *C. bonus Henricus*, has a claim. The fact that the Assyrian word for "salt-petre" is *mēlu* disapproves any connection of the Heb. *mallādaḥ* with "salt", if this Assyrian word *samšID MĀ-LAH* really represents the *Atriplex*.

We have also here to consider the Assyrian *sammallāhu* given on p. 4 as equivalent to *samīšabatū*. This latter, although not given as an equivalent to *samšID MĀ-LAH* must surely be connected, since *samīšabatū* is closely connected with the spinaches. The connection *samšID MĀ-LAH* with the difficult *samšKU-SA irome* with the difficult *samšKA-A-AB-BA*, p. 36, will give us a clue to its meaning (see p. 37).

*samšPir(pir)-hi šar* is prescribed thus in *MT.*:

Seed only, *Ext.*: *ΚΑ*Ρ. 189, 11: *AM*. 6, 3, 8 (†, 1/2 qa, for head or temples, joining K. 2354, Col. i, *CT.* xxiii, 24, after l. 15): *AM*. 45, 5, r. 4 (†, in a bandage for the stomach): *ΚΑ*Ρ. 205, 7 (†, in oil, doubtless reading *zir for nu*): *AM*. 74, 1, iii, 10 (bind on feet with sumach-seed in rose-water): *AM*. 69, 2, 8 (†, bathe, feet). Pliny (*NH. xx, 83*) says of the Orage (*Atriplex halimus*) that it has been recommended as a liniment for inflammatory swellings, incipient boils, and all kinds of indurations.

*samšID MĀ-LAH(DU-DU) occurs thus in *MT.*:

... MĀ-LAH(DU-DU), †, probably for poulticing, breast and loins, *AM*. 49, 4, 8: and ... MĀ-LAH(DU-DU), †, including cantharides and rosemary mixed in oil for weak hair, *CT.* xxiii, 36, 51. For *TAB-UD BA* ("heat of the day") *samšID MĀ-LAH(DU-DU) brayed and anointed alone in oil, *ΚΑ*Ρ. 203, i–iii, 50. Pliny (*NH. xx, 83*) says that wild Orage is used for dyeing the hair. (For the ext. use of *Atriplex* see above.)
ALKALIS AND SOAPWORTS

C. ALKALIS AND SOAPWORTS

1. .signIn-nu-ush, mastakal, "Wash-All," a soapwort, probably Struthium, Saponaria.

2.  signIn-Tul(l)al, "Thou-shalt-wash," a soapwort, perhaps Leonice leontopetalum L.

3.  signIn-Dil-bat, "Venus-flower," a soapwort, perhaps Cyclamen.

First, before giving the medical uses of these plants, I propose to show that they are especially "washing plants" such as the Arabs use. This is particularly obvious in the case of signIn-nu-ush, mastakal.

1. Beginning with this plant, the most important instance is to be found in Maqlû i, 46, where after the performance of the ritual with the "Town of Zabban, with its two gates, East and West", the bewitched man holds (up) era ḫāṣbu 1 signIn-mastakal, and brings water to the gods: "as I (cleanse) you, so do you cleanse me." Here the plant plays a solitary part in a cleansing ritual with water, which suggests at once that it is some kind of soapwort.

Continuing on these lines we find this plant with others in the Incantation-texts proper:

CT. xvi, 24, 18, water is to be poured into an asannûa-vessel (basin), tamarisk and signIn-mastakal placed therein, the "Incantation of Eridu" performed with the water, and then the patient is to be sprinkled with it ("that the namtarû (plague) which is in the man's body may trickle away 2 like the water "). CT. xvii, 31, 30: a saḥarratu-vessel is to be filled with water, tamarisk, signIn-mastakal, "small palm." gi-šul-šār, pine-resin (turpentine, riṭli) Juniperus oxycedrus (iṭerin-par-ra) placed therein, the "Incantation of Eridu" performed, and the patient sprinkled with the water; ultimately, as the water trickles away (ṣur-ṣur, or ṣur-ṣur) from his body, so may the namtarû (plague) in his body be washed away. Then the water is to be returned to a cup and poured away in the street.

CT. xvii, 38, 35 is still fuller, and more magical, to cleanse a tabû caused by one who has come into contact with unclean water or with some person unwashed (obviously a very intricate ritual, perhaps for a priest rather than an ordinary layman). Water taken from a river-mouth on both banks is to be placed in a saḥarratu-vessel "which has come from a large kîl", and therein are to be placed tamarisk, signIn-mastakal, "small palm", gi-šul-šār, Salicornia-alkali, [sa]lt, ... supalu (manna), ṣu (urkarinnu), riqqé (gums), pine, fir, liāru (Juniperus oxycedrus), various oils (including that of niqībutu), fat of a cow born (or made) in a pure fold, ... , ṣārīru ("red gold"), crystal, white lead for eyes, serpentine, white lead, carnelian, and lapis.

Other texts in Maqlû are easier, e.g., i, 21 ff.: ʿibīnu līlīlanīna ša kimmatu šarû, ʿigīšimarû līpšurûnī, maḥīrat kalû šáru, signIn-nu-ush lībīlanīna ša iṛṣītim malāda, terinatu līpšurûnī ša šeem malāda: "May the tamarisk cleanse me, whereof the fronds (hair, top) grow high, may

1 BAG. 63: Meier, Maqlû 8, "eine Blütenriase": Tallqvist, Maqlû 35, "einen kasten, einen topf."

2 Liṣur, here equivalent to šur-šur, which also has the value of muṣṣurûn, while šur = tabdīnu.
the date-palm free me, which faces every wind, may the ṣam-mastakal-plant clean me, which fills the earth, may the pine-cone free me, which is full of seed-corns.1

Again, in ix (Meier, Maqlû, 63, 170 ff.; Talqvist, Maqlû, ii, 50, 73 ff.) we find a similar group for washing hands, tamarisk ṣam-DIL-BAT (p. 43), date-stone, päš (chaff), gypsum, šU-GUR 2 ṣam.za-suḫ, fir-turpentine, pine-turpentine.

Similarly Šurpu ix, 1 (Zimmer, Šurpu, 45: Dhorne, RT. 1907, 125: BRP. iv, No. 17, 1 ff.) gives a series of invocations to the tamarisk, ṣam-mastakal, Acorus calamus, Salicornia-alkali, salt, cedar, pine(-resin or turpentine), in which the burden at the end of each section is practically the same, i.e. that the patient’s mouth shall be clean, and the evil tongue shall stand aside.

We have, therefore, to explain not only ṣam-mastakal, the unknown plant in these cleansing texts, but also among other substances the “small palm”, the palm, Acorus calamus, gi-šul-šās (“reed for plaiting”), pine-resin, juniper, manna, tamarisk, alkali, ṣam-DIL-BAT, and ṣam-tualal. On the assumption that these are texts which include substances to cleanse the sick man, we can discuss them in this light.

To begin, it may be stated that, apart from plants used as soapworts, the various components of soap are fats (palm-oil), alkali (potash, soda), resin, and salt. In our last invocation we have the alkali, salt, and resin clearly; hence we have to explain, on these lines, the others as used for washing. I suggest the following:—

The tamarisk obviously plays the most important part in some of these washing-rituals; most simply we find it with ṣam-DIL-BAT and ṣuqrū (King, Magic, No. 12, 84): “May the tamarisk cleanse me, may the DIL-BAT-plant free me, may the heart of the palm’ release my sin.” In BBR., No. 11, 1 ff. (cf. No. 75, 14), the seer is directed to wash, anoint himself with unguent (scented) with ṣam-imnhur pāni (heliotrope), put on clean clothes, and then ṣam-pinnī ṣam-tul-lal utallal (i.e. cleanse himself with these two plants), and cedar . . . ināʾūṣ without a meal, and then chew corn. Again, in a ritual, ṛikibbi of ṢH-HU (Cantharides), ṣameli-[kulla], tertenna of tamarisk, . . . , ṣam-mastakal, palm, ṭikan[šām], and mim-ma zerō₂ are to be put into water to wash the man (KUB. iv, 48, and VAT. 10830, Liebész. 52). In these texts the part of the tamarisk used can hardly be the galls or the manna, and we must seek another substance obtained therefrom.3

1 A pun in Maqlû vii, 11 (Scheil, RA. 1925, 155) gives ṣam-in-NU-UŠ beside mastakal, which may be a reference to ṣam-in-an-na.

2 Not uqrū “ring”, but a word from the root hapāru “wash away” (see D. 354, 171 (b)). From DAC. 92 it will be seen that there has always been a confusion between “white vitriol” (šam-ma-suḫ), and alum, and it is very probable that we have the same confusion here. The obvious intention is to provide a means of washing (cf. arumṣṭpa, ṣu-gur = ṣakṣūt) with alum.

3 For the ritual with tamarisk in water cf. the numerous cylinder seals in which a branch, not dissimilar from a possible representation of a tamarisk, is placed upright in a pot between or near the worshipper and the god (Danthine, Le Palmier-dattier, figs. 523 ff.). The authors of this latter work draws attention to the similar scene at Dura: “Le prêtre syrien semble déposer la plante, roseau ou tamaris (Fr. Cumont, Fouilles de Doura-Europos 67) dans le vase ” (ib., Texte 91). It may be that all this is symbolic of whatever use is made of the tamarisk in our Assyrian ritual.
The obvious washing-substance from tamarisk would be the ashes: IB. 17 speaks of the ashes of the ahl-tamarisk as detestive, and LPG. 441 says: "On emploie ses cendres [tamarix] pour l'extraction de la soude." "T. gallica," says PC. xxiv, 24, "is one of the species of this genus remarkable for the large quantity of sulphate of soda which its ashes contain." Since tamarisk is in common use in Baghdad for fuel (p. 279), the ash would be one of the most easily obtainable, and we may therefore accept the use of tamarisk in our rituals as indicating its ashes for washing purposes. Indeed, in several of these rituals, that most common of washing materials, alkali (uḥulu), is frequently absent, and this reinforces the theory for the use of tamarisk-ashes.

Next, cedar. In the ritual for the barū-priest (p. 40) this substance was apparently used for purifying and scenting the breath, and, if this be correct, it may be regarded as a perfume here.

As for the Acorus calamus, the stress again seems to be on its fragrance; it is true that the oil might possibly be used in soap-making, but the scent is more probably the part for which it is used. There would be no advantage in burning it for the ash.

The date-palm, again, is a difficulty. Actually "palm-oil" as we have it does not come from the date-palm, and this must almost certainly be eliminated as a possibility. But there is the fuller explanation of it perhaps having been the date-stone that was intended, i.e. another ash (p. 40). Yet again, it must be remembered that on p. 39 a "small palm" is mentioned, and also the "heart of the palm" (i.e. perhaps the crisp, edible head of the palm), and these again make the explanation difficult, if they are to be taken simply. Note, however, that a part ("die Scheiden") of the Phoenix dactylifera is used as a perfume in Palestine (FJ², iii, 95).

Nevertheless, almost everything points to the intention of providing a soap which, by magical use, will wash away the evil. Hence we should see in ša;m mastakal, šentullal, and ša;mdilk bat some kind of soapwort (distinct from the uḥulu, the šūnān of the Arabs, i.e. the alkali).

Let us now examine the characteristics of these three:

1. ša;mn-nu-uš, mastakal, māltakal, martakal, occurs thus in MT.:

   (1) Simply: ext.: Excessive menstruation, wrapped with bitumen in red and white wool, and sprinkled with powder of aṣbe;ad-bar (DACG. 160, basalt or lava) inserted in uterus, KAR. 194, i, 39. "Poison," †, poultice, AM. 98, 3, 8. Poultice, (ša;mn-uš) †, Scheil, RT. 1901, 134, 6 (for this spelling, cf. Scheil, RT. 1900, 159). In virility charm, †, prob. wash, Læbesz. 52, 13. To avert evil presages from the King when driving, anoint with ? in fine oil (tā zar-ga), Thureau-Dangin, RA. 1924, 135.

   Int.: Uncertain, perhaps stomacheic, fragmentary, bra) drink, AM. 57, 6, 5. Uncertain, †, drink without a meal, AM. 75, 1, iv, 13. To remove sorcery, with 31 others, drink, AM. 89, 1, 3. For difficult childbirth, with cynoglossum only, without a meal, bra) drink, AM. 67, 1, iv, 17. For some female trouble, with flour of roast corn only, in oil and beer drink, AM. 67, 1, iv, 5: alone, dry, bra) drink in beer, KAR. 194, iv, 13.

1 All travellers in the East will bear me out when I say that scent is there regarded with far higher favour than it is with us. Note also the perfuming of soap-balls with Prunus mahaleb, p. 308.
DICTIONARY OF ASSYRIAN BOTANY

(similar to nūḥurtu, Asa fœtida). Too much saliva, †, without a meal, in beer (prob. drink), AM. 31, 4, 11. When saliva is stopped, †, in kurnnu-beer (prob. drink), ib. 15.

To chew green (arugtu) for sorcery, with green annu'ara and [green(?)] thyme, AM. 85, 1, ii, 16.

Quantity: 10 carats, † (?), for cough, AM. 80, 2, 3 : 2 shekels, AM. 90, 1, r. 9.

(2) Seed: ext.: Feet, fray with seed of šam[kam]kadu and apply, AM. 74, 1, iii, 1. To relieve muscles of hands and feet, †, apply, prob. ext.: AM. 98, 3, 18 + 39, 3, 4. Ointment for Hand of Ghost, †, AM. 94, 2, ii, 14 (cf. Liebesz. 50, 6).

Int.: Hand of Ghost, †, drink in beer, AM. 76, 1, 25.

(3) Uncertain part of šam[IN-NU-US], †, rub on feet, KAR. 191, 4, which is much the same as, and perhaps dup. of AM. 69, 2, 2 ff., and 70, 7, i, 9 ff. (cf. E., iv, 45) (if so, it will vary with šam[DIL-EAT]).


It may also occur in the Chemical Texts in a small mutilated receipt (K. 6920, r. 8, OTC. pl. 4): ... [ka]-al-gu-ga šīqlu IN-NU-US [ešteniš (niš) tuβallal an-nu-u t[u(?), or b(i(?)] ... “[So much ṭalugu (red ochre), 1 shekel of IN-NU-US?] thou shalt mix together: this is ...”. It is possible that an alkali is indicated, but the text is so mutilated as to provide little evidence.

2. šam[Tu(l)]-lal, thus in MTT. —

(1) Simply: Ext.: Dry cough, †, bind on, AM. 50, 3, 2. [Swelling], pound with Solanum, in [beer]-yeast ... AM. 73, 1, ii, 5. Swelling, †, dry, pound, bind on, KAR. 192, 27.

Int.: Stomachic, †, drink, AM. 87, 1, 11 ; Kü. ii, ii, 46. Cough, †, drink, Kü. i, i, 2. One of many against sorcery, drink, Boissier, RS. 1894, 137, ii, 4.

Uncertain use: For ... “his semen unintentionally or not floweth”, †, AM. 32, 1, 12 (a saliva-text?).

(2) Seed: Venereal, alone, reduce, fray, fill the interior of penis, AM. 62, 1, ii, 4. Temples, †, in squeezed grapes drink, CT. xxiii, 46, iv, 5 (cf. S.818, Bezold, Cat. 1439).


We have already seen on p. 40 that šam[ul(l)]-lal is one of the washing plants, and in this instance it is at once followed by the verb utallal (i.e. “he shall cleanse”), a word meaning the actual process of washing 1; the reading therefore must be certainly šam[ul(l)]-lal “the ‘thou-shalt-wash-plant’”, Semitic, and not Sumerian.

1 E.g. see HWB. 71, s.v. ēlīnu.
It is possible that this plant is used by the mother of Gilgamesh when she adorns herself and climbs up to the roof to make her prayer to the Sun-god on behalf of her son (GE. iii, ii, 1): (1) ... 'ru-ub; (2) ... šamtu-lal; (3) ... si-mat pag-ri-sá; (4) ... si-mat ir-te-sá; (5) ... [ú-k]in-ma a-şá ap-rat ... she entered, ... šamtu-lal ... the adornment of her body ... the adornment of her breast, ... she set, wearing her tiara”.

Again, in what is practically a ritual for nahšádu (excessive menstruation), after threading nine minerals and tying seven and seven knots, šam₂ₚ₃ šir šamtu-lal (Asa ŧeṭida and tu-lal-seed) are to be included between the knots and the minerals, and the whole bound on the stomach of the woman (KAR. 194, 7). In this case we have to consider for what the purpose of the Asa ŧeṭida and the šamtu-lal are intended. The ritual doubtless intends that they are ultimately to be released when the seven and seven knots are untied, and we may see in them various possibilities: (1) the contrast in smell, between the unpleasant Asa ŧeṭida and the šamtu-lal; (2) the use of Asa ŧeṭida in hysteria, with a corresponding or contrasted use of the šamtu-lal; (3) the use of šamtu-lal as a washing plant, with a contrast in Asa ŧeṭida. I incline to the first, that we should see in šamtu-lal a perfume, which would correspond well with the passage in GE. quoted above; and if so, we must find some scented plant which is also to be used as a soapwort, or at least in soap.

The meaning “thou-shalt-wash” for the plant šamtu-lal at once suggests a similar one for šemmastakal which is never written with šem, and leaves us with the word mastu as coming from mesša “to wash” (parallel to barlu “hunger” from bīrū), the word thus meaning “Wash-All”.

3. šam₁-DIL-BAT.

(A) Pl. 26, K. 14822, i-ii, joined to K. 10466, Pl. 32, i:

<table>
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<tr>
<th>šam₁</th>
<th>šam₁-DIL-BAT(?)</th>
<th>šam₁-DIL-BAT</th>
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<tbody>
<tr>
<td>-GA</td>
<td>-LUH</td>
<td>-GA(?)</td>
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<td>šam₁-DIL-BAT</td>
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<td></td>
<td>[šemmas]-ta-kal</td>
<td>-i</td>
</tr>
</tbody>
</table>

It occurs thus in MT.:

(1) Simply: ext.: Head, prob. alone, Ṽray, anoint, AM. 3, 5, 5. Continuous pain in temples, dry alone, bind on in rose-water, OT. xxiii, 44, 8 (cf. SM. ii, 39, in headache (“caused by drinking wine”) “and on his head must be poured an infusion of chamomile-flowers, and oil of
roses or violets). *Eyes, inflamed, fray alone, bind on, AM.* 12, 8, 11 (cf. 8, 1, 3 and *PRSM.* 1924, 23) : full of blood, with lupins in *himeta-ghee* and *nigilibu* (Euphorbia), *AM.* 8, 1, 32. *Feet, †, rub with various oils, AM.* 69, 2, 5; 70, 7, 10 : †, bathe, *AM.* 70, 3, i, 4. *Swelling, †, poultice, AM.* 100, 3, 13. "Poison and lassitude, " *samDIL-BAT M*-*R* (shredded), †, bathe, *AM.* 52, 5, 8. *A blow on the "middle" (pelvis), so that the patient cannot walk, †, poultice, AM.* 79, 1, 12 : for a blow, †, poultice, *AM.* 77, 8, 10 : when knocked unconscious (probably, see *AJSIL.* 1930, 5), †, [apply], *AM.* 79, 1, 17.

*Int.* : *Pain in breast ("lung-trouble"), †, drink, in beer or wine, AM.* 48, 4, r. 10. *Stomach, †, drink, AM.* 48, 2, 6. (2) *Seed : ext.* : *Eyes, inflamed, with dough in puru-oil alone [apply], and then antimony, AM.* 8, 1, 8 ff. (dup. 11, 2, 45 and KAR. 183, 11 ; see *PRSM.* 1924, 23). *Feet, †, poultice, AM.* 70, 7, i, 4 : in rose-water with seed of *samEL* bind, *AM.* 74, 1, iii, 8 : feet itching, with seed of *samEL*, [apply], *AM.* 74, 1, ii, 36. *Swelling, with seed of *samEL*, in rose-water, AM.* 75, 1, iv, 5. *A blow, †, [apply], AM.* 77, 2, 4.

*Int.* : *some form of general neuralgia or debility, †, drink 3 grains, AM.* 90, 1, iii, 21.

(3) *PA* (tops) : *Anus-trouble, with swelling, uncertain use, AM.* 58, 2, 7.

In *ADD.* 1042 we find a collection of various vegetable-drugs mentioned, including, among others, *PA* (tops) of pomegranate, of grapes(?), of *A*-AM citron(?), of mulberry, of *GI-BU*, and then simple *samFadanu, samSagumtu* (manna), *cynoglossum, samalamu, samDIL-BAT, Asa foetida*, rose (I have corrected the published text with the tablet). This with the omission of *samqurban eqli* would suggest that *samDIL-BAT* here represents a common drug. It must be noted that the occurrence of *samDIL-BAT*, while prominent in *MT.*, is not obvious in the Plant-lists, except in the one given on p. 43.

Briefly, the outstanding characteristics of these three plants are:

(1) *samMastakal*, simply, ext. for menstruation, poultice, and in virility charm : *int., difficult childbirth, some female trouble, saliva, cough, and probably stomach : its seeds, ext. as ointment : int. once. It is compared to human semen, and apparently grows on low ground near water.

(2) *samTu(l)lal*, simply, ext. for coughs and swellings : *int., coughs and stomach-trouble : its seeds for venereal disease introduced by penis, drink for some head trouble : the tops, uncertain use. It may be a perfume.

(3) *samDIL-BAT*, simply, ext. for head, eyes, feet, swelling, and a blow : *int. for lungs and stomach : its seeds ext. for eyes, feet, swelling, and a blow, and int. once : its tops probably for haemorrhoids.

Taking next the possible soapworts for identification, the Greek *struthion* is certainly the most important, although its identification is not entirely certain. As a matter of fact, the evidence for the *struthion* according to Beckmann (op. cit. 98) shows that it is a thorny plant, of pleasant aspect without smell, with a large root, growing especially in Asia and Syria spontaneously; the green part being used for increasing the milk in sheep, and it is particularly noteworthy that Pliny says
ALKALIS AND SOAPWORTS

"trans Euphratem landatissima." Fuchs (Beckmann's Hist. of Inv., 4th ed., ii, 100) thinks that this was Saponaria officinalis L., against Beckmann who identifies it with Gypsophila struthium L., which, he says, is still used in Italy and Spain. Feb (Bostock, MH. vol. iv, 149, n. 9), however, says: "Linnaeus has 'pretended'... that the Spaniards still employ the root and stalk of the Gypsophila for the same purpose as the ancients did the same parts of the Radicula," but "he himself, however, though long resident in Spain, had never observed such to be the fact," and the description in Pliny (NH. xix, 18), he says, does not correspond with that of the Gypsophila struthium.

If we accept the Saponaria as the equivalent of sammastakal, we shall find certain resemblances in MT. S. officinalis L. "foams when rubbed in water" (perhaps the Assyrian comparison to semen), is used for washing woollens, and medicinally is a bitter, aperientive tonic used for rheumatic affections, jaundice, and long-standing skin-troubles (FF. 1862, 57). IMP. No. 116 says that in India S. Vaccaria L. is used int. for gout and rheumatism and ext. for itch: IB. 1286 says that the seponaire (Syr. adharyā, Arab. šajarat abi malik) washes clothes, and that the leaves are used for poultices on the breast, and the root for atrabile. LGF. 407 says that the Saponaria of the East is richer in saponine than the native kind (France); root, leaves, and seeds are all used in medicine "contre les dartres squameuses,... l'ictère, dans le traitement des engorgements lymphatiques et des cachexia, la syphilis, les maladies de la peau et les catarrhes". Pliny's struthion (NH. xxiv, 58) has many medicinal properties; int. for cough, jaundice, and the chest, diuretic, laxative, and as a detergent on the uterus (like sammastakal); and ext. on leprosy sores, eyes, etc.

Saponaria and Silene are mentioned as occurring not far from Al-Hadhr (Ainsworth, T., ii, 177), and S. Vaccaria L. at Qala'ah Sherghat (Herzfeld, Beih. 35). S. officinalis L. is cultivated in [Syria] for its saponaceous root used in washing woollens and for the manufacture of halawi (FP. i, 163).

On the whole, therefore, there is every probability that sammastakal, definitely a soapwort, is struthion, and probably Saponaria.

samm Tullal is not so easy, inasmuch as, if we make samm mastakal = struthion, we have to seek for less easy soapworths. There is the Gypsophila already mentioned (G. Rohejeka Del., in Arabic raqaiqah or sirr, FP. i, 165, and G. struthium L., 'irq al-hulāwa, FJ. i, 635): but I cannot find that it is used in medicine. There is also the Mesembryanthemum (Mesembryanthemum crystallinum L. (Arab. ghassul): M. Forskalei Hochst. (Arab. ghassul): M. nodiflorum L. (Arab. ghassul): M. tortuosum L. (FJ. i, 635 ff.: FP. i, 486)), which are also soapworths. Note that M. crystallinum is burnt in the Canaries for its ashes for glass, and M. nodiflorum is used also for glass in Egypt, and in the manufacture of Morocco leather (PC. xv, 1839, 124). Olivier, Voyage iii, 77, speaks of the M. copticum used for soap; Ainsworth, T. ii, 301, mentions one species of M. on the banks of L. Urumiyah, and Herzfeld (Beih. 33) M. nodiflorum L.

1 But he also speaks of the Struthium (No. 1179) under the name of k.n.d.s and qallyā as a soapwort which washes clothes, is sharp-tasting, diuretic, and used by women for detereive possaries. See also FJ. i, 639.
at Qala‘ah Sherghat. “Mesembryanthema and asters cover the great level tracts of Babylonia, Chaldaea, and Susiana” (P.C. xxv, 1842, 177). Here again, however, I cannot find that the Mesembryanthemum is used in medicine. Mesembryanthemum Forskalei Hochst., called samh in Palestine, is described by Doughty (A.D. 312) as providing a seed for flour, and FCH. 48 describes this seed as coming from a Mesembryanthemum with very long fleshy leaves and a small daisy flower. We may also eliminate another soapwort, Atriplex halimus L., as being already identified with şamzid-mâláh (p. 37).

There is a possibility that the sam-tullal is the Leontice leontopetalum L., also a soapwort: Prens (Bib.-Talm. Med. 431) says: “Die Wurzel von Leontopetalon resp. ihre Verwendung als Seife kennt, wie man gewöhnlich meint, erst die Mischna unter dem Namen eschlag, Gemara schalgâ [cf. F.J. 2, 1, 648] . . . Für die Bedürfnisse der feineren Toilette benutzte man parfumierte Seifenpulver, die aber meist das Seifenkraut, ahalâ, Salsola, als Grundlage hatten. Das Waschpulver bardâ bestand aus gleichen Teilen Seifenkraut, Myrte (âsâ) und Veilchen (sigâl). Ferner gebraucht wurde Weihrauchpulver und kuspâ de jāśmin, nach den Erklären Sesamtrester, die man mit Jasminrosen weicht, dann trocknet und pulvert.” It is called hamârat adhâr in Syria and Palestine (FP. 2, 1, 28), and was found at Qala‘ah Sherghat (Herzfeld, Beih. 33).

According to F.J. 1, 288, the root of the Leontice leontopetalum is used for itch, epilepsy, and snake bite. The fact that it is a perfume suggests an equivalence with sam-tullal, but the medicinal use is not helpful.

In the case of šam-dir-bât, the Venus-flower, we might have assumed, as I suggested in A.H. 69, that this was the daisy, from the daisy-like appearance of the Star of Venus on the Assyrian monuments, a flower sacred to the goddess. Indeed, we might have worked further afield and seen in it such wider application as is suggested by Christian tradition, wherein the Virgin Mary has absorbed many of the characteristics of the Great Mother of the Near East. The Matricaria Parthenium L., for instance, is of this class, and yet sufficiently near the daisy to suggest itself: its Arabic name is šajarat maryam, IB. 121.

Nevertheless we have certainly to look for a soapwort of some kind; it must be connected with Venus (or rayed like a daisy) and useful in medicine.

The best plant which I can suggest (but I do not feel happy about it) is the Cyclamen, C. hederefolium L., being called in Arabic bahâr maryam, šajarat maryam (Lõw, Ar. Pfk. 307). C. latifolium (called “Shepherd’s soap”, FCH. 67) is still used as soap in Palestine. The Cyclamen root is said to cause abortion, is an active but dangerous purgative, and can be applied to serofulous tumours as a cataplasm (LPG. 177).
III

VEGETABLES
**VEGETABLES**

\( \text{sām} \text{SUMUN-DAR (Šar), šunnitu, Beta vulgaris L.}, \text{beetroot.} \)

\( \text{sām} \text{SUMUN 1-DAR = šunnitu, sāmŠU-SUMUN-DAR, sāmši-mi-il-tum, sāmši-mi-il-tum, sāmGIS-ŠAR-GIS-ŠAR, sāmši-ip-ru in one of the new Nineveh texts (cf. Pl. 32. S. 1928, 1–8). sāmŠumultum is amplified in CT. xi, 45, i, 5, thus:} \)

\[ \text{sāmSU-MUN-DA = sāmDUL-ŠE-ŠAR = ū-du-u(?)-min-na-bi-ša-a-} \]

\( \text{(i.e. nisigā) = šu-mut-tum paralleled by CT. xii, 45, i, 5, thus:} \)

\[ \text{sāmKIL-ŠE-ŠAR = šu-mut-tum (dup. ib. 35, viii–vii, 23, ... DUL-ŠE-ŠAR} \]

\[ \text{KIL = šu-mut-tū. This is further augmented by Mat. 86, 7–9, 17, 28, and Pl. 4, ix, 26–8: sāmMAN-DU = } \]

\[ \text{(ād)im-me-tū = šu-mut-tū, sāmGIS-ŠAR = šu-mut-tū ?} \]

\[ \text{(cf. sāmGIS-ŠAR-GIS-ŠAR above), MU-ŠAR = šu-u = mat(?)-} \]

\[ \text{na-ša-tam, ŠAL-DA-ŠAR = mi[i-t-tu] (v. mut-tum) = šu-mut-tū.} \]

In omens sāmšumultum occurs between sāmšumānu and sāmIM-MAN-DU (TR. 10, r. 7).

An interesting ritual (KAR. 73, 1 ff. trans. Ebeling ZDMG. 1920, 187) towards the end, prescribes braying sāmňar-har (mustard), sāmKUR-KUR (hellebore), sāmmatqa (= sāmararānu, lupins), sāmAS(?) (Asa foetida), sāmSUMUN-DAR, and sāhli, together put into karrumu-beer, and set before Gula. Apparently the intention of using such a heterogeneous collection of plants is to bring into play their various colours, respectively yellow, black, white, brown, red, green. The Asa foetida is the one doubtful component; we should have expected a blue here.

This is paralleled by KAR. 186, 48, one of several prescriptions against the alē which has seized on a man. The alē is the vampire (or even nightmare) described at length in CT. XVI, 27, 1 ff. (Devils, i, Tablet “ B ”: Šem. Mag. 71, 81), so that the drugs are as likely to be magical as medical: bind on (AŠ-SU) sāmAS (Asa foetida), sāmSUMUN-DAR (beetroot), sāmABIR (lime), sāmšalmu (a black plant).

It occurs thus in MT.: (1) sāmšumun-dar:

| (a) Simply; ext. | Bruise (dikši), ṭ, poultice, KAR. 182, 36, ṭ, lection, KAR. 202, 43, Hand of Ishtar, ṭ, bind on (AŠ-SU), KAR. 186, 33. |
| Int.: Strangury, ṭ, prob. drink, AM. 59, 1, 36. Prob. “when a man goes to a woman... to another woman goes”, ṭ, AM. 66, 1, 11. Uncertain disease, with seed of tamarisk, bray in beer [drink(?)] KAR. 186, 5. |

Enema: Stomachic, ṭ, Kū. ii, iii, 7.

1 This was my former pupil, Dr. P. W. Geers, who pointed out to me that sām šu-an-dar (AJSL. 1937, 17, 15 ff.) is the same as sāmSUMUN (i.e. ŠAR)—DAR, from a comparison of the spellings of the name of the canal nāššu-an-dar, nāššu-MAN-DAR, nāššu-man-da-[q], nāššar-DAR, nāššu-ma-ra, Landsberger, OLZ. 1916, 33, for which I am most grateful.

I see that Landsberger read the plant thus in ZDMG. 1920, 444.

2 This line is not on PL. 4.

3 This is apparently different from the simple GIS-ŠAR of MT. PA GIS-ŠAR kalama occurs in a prescription for feet and... , following the PA (tops) of many fruits, AM. 68, 1, 20; nāš GIS-ŠAR similarly after other fruits for qī niššū (blains), AM. 72, 5, 11 ff., and nāš GIS-ŠAR kalama similarly, to bathe, AM. 92, 5, 10. [See further on sāmGIS-ŠAR, p. 51.]
Cf. KUB. iv, No. 48, ii, 3:ff. (Liebesch. 50); virility charm, †, etc.

(2) Șamšumuttu(m):

Quantity: [10] shekels, stomachic(?), †, AM. 42, 2, 8, dup. 57, 3, r. 8.

Fumigate: Ghost, one of 7, AM. 99, 3, 15, dup. AM. 78, 10, 3 ([Șam]SUMUN-DAR).

Uncertain use: one of 51 drugs to dissipate sorcery, AM. 87, 5, r. 5.

The obvious equivalent to the Sumerian ȘamšUM-DAR is the Arab. five-lettered šawandar, Syr. ș'matrâyâ, Beta vulgaris L., one of the Chenopodiaceae.1 This is borne out if I am correct in taking R.A. 1921, 5 (Scheil) as giving as an equation șanGUG : șamšushmanum, i.e. the "red plant". The first sign SUMUN, if given its normal Sumerian value us or mud would mean "blood" (i.e. the beetroot colour), or, as ZARA, ṭamû "to spin", would suggest the shape either of a top (very much the shape of the beetroot), or of a spindle whorl. The second sign DAR, properly D. 114, would give Durrumû "two-coloured, rolled, twisted", but as D. 113 (which has not the value DAR) we might see in it șamu "red". It is therefore reasonable to see in șamšUM-DAR a plant perhaps of spinning-top shape, and red.

Next, the Semitic values. șamšushmanum, șamšîmsîtu (and šîmsîtu šar of MB. 23) are obviously loan-words from Sumerian: the Arabic and Syriac have kept the older form.2 șamšîmsîtu and șamšîsprû are not clear, but șamšîšîmmeûti again suggests ṭamû "to spin" (as in sumûn?), i.e. a top, the form being perhaps parallel to riq̄û (Heb. riq̄eâḥ?), šiq̄qû(?) (saqqî, "to water, sprinkle").

Beta vulgaris var. rapacea Koch and var. Cicla L. (white and red beetroot) grow wild in Mesopotamia, and c. 1000 B.C. were both in Sicily (F.J.2 i, 346: note in ib. 347 the suggestion that the Aram. šilq̄ = "the Sicilian"). B. vulgaris L. in waste and sandy places, F.P.2 ii, 429.

In medicine Beta vulgaris L. is used in India by the application of its leaves to bruises and burns and its seeds are cooling and diaphoretic (IMP. 1066). Pliny (NH. xx, 27) prescribes it for many diseases (dysentery, chilblains, ulcers, and as diuretic). These coincide well with MT.

In the VM. we find a difficult passage: șamšushmanum is to be used (a) ina zê amēlûti "in dung of men", and (b) ina ḥulû ša āpi ("on the rat (mouse) of the grove") (Pl. 27, K. 4431, 5, 6; Pl. 42, K. 8807, 5, 6; and K. 4163, 5, 6; Mat. 88, 1, 4, probably omitting (b). Although ḥulû is ordinarily "rat" or "mouse", the animal "mouse of the thicket" is not at present identifiable, and it may be an alchemists' synonym. It might conceivably be a cryptic term for some such thing as the galls of the tamarisk-grove (a mere suggestion) to which the use of beetroot is added to tan or dye. In this problem Mr. D. Burton,

1 Other forms are šimtar for Chenopodium murale L. (F.P.2 ii, 430) and a Syr. form šimdar, beetroot (F.J. i, 348). Other Arab. words for Beta vulgaris are lîbîdûn, dîrîs al-kallî, ūjî bit'l-ḥalî (F.P.2 ii, 429).

2 The Syr. šappēr ṣīrēt "beautiful of leaves" for spinach (F.J. i, 352), and sprîq, asparagus, are hardly probable. Mittain is the Arab. for C. opulifolium L. (Schrad.) (F.P.2 ii, 430).
M.B.E., D.Sc., at the Rose Hill Tannery; Bolton, a specialist in tanning, has with much expenditure of time and labour, done me the great kindness of trying to find a solution. He writes thus:

"I believe the explanation you are seeking lies in the following experiment: A piece of limed skin was taken and the hair removed. It was then treated with water containing beetroot. This not only removed the lime, but the skin became fallen (i.e. the swelling was completely removed) and it had a silky grain. This is exactly the effect produced by dog dung. The skin was then treated with urine. This is a weakly acid solution and had the same effect as a bran drench. The skin was then ready for tanning and I enclose a piece which has been tanned with a mixture of vegetable tanning materials.

"If one wished to tan the skins of rats or mice with the hair on, I think it would be possible to treat them with beetroot, then with urine, and then tan them. This treatment prior to tanning would tend to give softness. Beetroot alone would be more satisfactory.

"Beetroot has no tanning properties. I have proved this by tanning experiments and by the following analysis:

| Tanning matters absorbed by hide | 0.0 |
| Soluble non-tanning matters | 6.8 |
| Insoluble matters | 0.1 |
| Water | 93.1 |
| **Total** | **100.0** |

"I therefore conclude that it is reasonable to interpret your passage as beetroot followed by urine."

Even if Mr. Burton's careful experiments do not solve our problem outright, they throw a great light on the possible channels for exploration. ḫaṃgīš-šār occurs in MT. for mīṣītā (blains) of the feet, along with cypress of the cemeteries, kung[ṣ] (Cyperus), ḫanelpitū (rush), and one other, to be dried, pounded, and poulticed, AM. 79, 1, 55.

[A curious ritual occurs, AM. 15, 3, 7 ff. (No. 202, JRAS. 1937, 282), where, for a man who has trodden in pure (?) water (?), ḫaṃgīš-šār is to be collected (tatabbak) on the bank of a river; vessels are then to be filled with beer and put facing the ḫaṃgīš-šār and bread placed in various "bends" of the man's limbs. Here ḫaṃgīš-šār suggests merely "vegetables", but it is entirely doubtful.]

B. Laptu (ṣāb), Brassica rapa L., turnip.

Long ago pointed out as the same as the Aram. laphta (MA. 492). The colour is obviously white from CT. xxiii, 10, (14) kima lapṭi lipšū panu-ka "may thy face be white like lapṭi ", and ib. (19) kima zīr lapṭi lipšū panušū. Zīr lapṭi, doubtless on account of its whiteness, is used in contrast to the red on a red thread, ib. 24. Hesychius' gloss λάφια is quoted in AF. 57.

In MB. 40 ff. we find silqā šāb (beta vulgaris, Arab. silqā, MA. 763); lapṭi šāb, puγNu šāb (radish), and the uncertain vegetables nanṣabu šāb, ḵassari šāb, mar-gal-bad šāb (if this is the right way to read it), and nadāl šāb. ḫaṃgīš-šār (if this is the right way to read it), mix in cedar-blood, "in fire" (fumigate),

1 Cf. Nbn. 386, 12, si-il-qe-a-tā'.
It is thus used in connection with the mongoose (better than "cat", which I suggested, JRAS. 1929, 341, see Landsberger, Fauna, 110). VAT. 9000 indicates that it is a gum from a thorn (p. 13), and its synonym there, samgan-zi ša-šadi(?) suggests a narcotic.

2. sē-ŠAR, šāmu, Allium sativum L., garlic.
3. sē-sīkil-ŠAR, prob. sīkillum, (wild) onion.
4. Mirga šAR.

CT. xix, 50, gives :

| GA-RAŠ-SAR | ka-ra-[šu] |
| GA-RAŠ-SA[G]-ŠAR | gi-ir-ša-[i] |
| GA-RAŠ-... (?) KIN-ŠAR | pār-3 |
| GA-RAŠ-GAR-GI[D]-DA-ŠAR | uš-šu-ra-a-ti |
| LA-LA-RAŠ-ŠAR | ki-is-mu |
| LA-LA-RAŠ-ŠAR : bi-is-ru | ši-ni-tū |
| [[U]E-GAR-RAŠ-SAR | ša 30-ŠAR : bi-is-ru |
| GA-RAŠ-SAR | iš-di ka-ra-ši |
| GA-RAŠ-SAR | iš-di ka-ra-ši |
| NUNUN-GA-RAŠ-SAR | zir ka-ra-ši |

The first section in MB. gives sē-ŠAR, sē-sīkil-ŠAR, GA-RAŠ-ŠAR, and mi-ir-ga-šAR.

Various species of these vegetables are given by D. 164, 62 : cf. also his Der Gemüsebau bei den alten Sumerern, Ornul. 17, 24, [also Analect. Orient. 2, p. 86] which gives several kinds for the older Sumerian period: sē, sē-gu(D), sē-tillum, sē-sīkil, sē-läm-ma(?) (šk)a-ša-ti,8 sē-šāg, gu-gū-gū, gū-mun, sī-lum, še-lū (coriander), cf. also gū-gū-gū(D), ib. 29.

1. GA-RAŠ-SAR, karašu, Syr. karthā, kērēšah, Allium Porrum L., the leek (Meissner, ZA. 1892, 292 : see FJ. ii, 131). It was grown in gardens as far back as Sin-muballit’s time (c. 1950 B.C., Langdon, RA.

1 This must be K. 11388, a correction which I owe to my pupil Dr. F. W. Geers. 
4 Or to be restored from 1. 12 above : see DACG. 55.
5 Text apparently zik (?) or li (?) . 
6 Cf. vēshurati, 1. 9.
7 Suggested by MB. 4.
1927, 91, *ana gušari ga-raš-šar-šag*) down to Merodach-Baladan (i.e. MB). In a mythical text it represents šaratu šuhati-su “the hair of his upper lip” (Tod. 32, 6), evidently with reference to its long thin shoots. One of the forms of native arsenic, [as]giqiš or [as]gilkū,¹ is given the name inšiš karaši “fruit of leek” because of the garlic-like smell of arsenic given off when it is roasted (DACG. 55).

It occurs thus in MT.:


(2) Seed: ext.; itch or ringworm (kurari), with castor-oil and ṣaralatmātu, bray [apply head], AM. 5, 5, 4. Against grey hair, †, anoint, AM. 4, 1, 24. Uncertain, AM. 27, 6, 11.


(3) Fruit: trouble with saliva and stomach, †, poultice, Kū. ii, iv, 30.

There were various tabus on eating leeks: šamāš-šar and SE-šar arc (coriander), not to be eaten by one who has eye-trouble, KAR. 203, ix–vii, 38. The root is not to be eaten on the 7th of Kislev, or the eater will have a worm (quqānu), KAR. 178, r, iv, 57 (cf. ib. 55, fish (and) ga-raš-šar prohibited, lest a scorpion sting him). A šammaš ga-ra-šē is mentioned, Scheil, RA. 1921, 4.

According to Pliny (NH. xx, 23) it is garlic (not leek) which is useful in hollow teeth, but he gives many internal remedies from leeks, e.g. in cases of uterine trouble (NH. xx, 21, 22), and “a decoction of the outer coat [of the porrum capitatum] acts as a dye upon grey hair” (ib. 22), and he mentions the leek as aperient (ib. 21). In India garlic is used ext. to prevent hair turning grey (IMP. ii, 1295).

Ainsworth (Personal Narr. i, 227) mentions the natives near Sarisat (Kara Bambuch) eating the leek freely.

From this we can go on to the more specialized word [ga-raš-šaʃ-ʃaʃ], giršati, which, from the inclusion of the word šaš “head”, suggests that we have here the form of leek called by the Syrians qaphṣatā: “So erhält man porri caput Col. xi, 3, Lens 84, 87, capitatum, kēphalōtōn, Ath. ix, 371, schon bei Theophrast, opp. karton, sectile, tonsile porrum, Salm. Plin. Ex. 703. Diese zwei Porreesorten wurden im Orient als k'rēšāh, ǩřthi Schnittporree, und ǩphlǐt Kopfporree unterschieden” (FJ. ii, 134). If [ga-raš-šaʃ-ʃaʃ] is the qaphṣatā, [ga-raš . . . (?)]-kin-ʃaʃ, pir’, may be the other: “Die grasgrüne, dicht gesäte Art des Porree (Plin. 19, 33, herbaceum) hiess alt-hebraisch hāšīr, Gras, aram. ǩřthi ‘das Abgeschnittene’ ” (FJ. ii, 133). If this meaning can be maintained the word pir’ suggests the Assyrian root parād “cut, cut off”.

Giršati looks as if it were a doublet of karašu, but the genitive form is peculiar.

2. SE-šar, šūmu, Heb. šām, long accepted as *Allium sativum* L., garlic. It is found in very early texts (Deimel, Fara, ii, 59: VAT. 12425, v. 20) and in Rim-Sin’s time, c. 1920 B.C., e.g. ½ Gū šum šaš (Charles

¹ Cf. the Arabic šakk, arsenic, the origin of the word being the Sumerian šaṭ-ge₃,ge₄ based on Aš, the base of the word for Aššu faṭalī.

² This may be the Arab. buṭaṭ, *Allium sativum* Boiss., FJ. ii, 149.
F. Jean, *Bab.* 1929–1930, xi, 178, 5). The quantities in late Bab. times are usually reckoned by the *gillu* (Heb. *g'hdhillin* twisted threads) like our "ropes of onions" (e.g. 5,500 *gil-dil ša šē-šar*, Cyrus, No. 76, 1: 5,500 *gil-dil ina šē-šar šāri ša šarrī*, *Nbk.* 307, etc.). In the time of Samsuiluna (c. 1900 B.C., C.-F. Jean, *RA.* 1927, 2) we find "fish of the sea, dates, and šē-šar", which looks as if it were meant to be used as a certain species of onion, is used in Preuss, *Bib.-Talm.-Med.*, 669, "bōcēl gaqlūti šē-šar šē-šar, dem Man an Fische tut, im Restaurant aber mit Mohn und Pfannen zusammen servirt." During the same reign a tablet mentions 1 (gu-r), 100 (qa) of sur-šē-šar, 160 (qa) of šē sikil-lum šar (onions) and 40 (qa) of za-ša-tīn šar (Scheil, *RA.* 1918, 191). A particular kind came from Tilman, sē-nī-tuk (D. 164, 51).

šē-šar is used thus in *MT.*:

**Simply:** ext.: Teeth aching, with šā-ša-hāša, *AM.* 105, 1, 18. Ghost, ‡, [rub?] on in cedar-blood, *AM.* 99, 3, 12 (I doubt if fumigation is intended here, although such a procedure is indicated in some of the other prescriptions). Note šē-šar šir-rum for "a fall of the entrails", *AM.* 61, 5, 8, *disp.* 62, 1, and cf. šē šir-rum, *AM.* 34, 1, 11: 53, 1, iv, 3: 58, 1, 5.

**Int.:** Strangury, bray, alone, drink in oil and kurumnu-beer, *KAR.* 203, i, 28. Bīde, bray alone, drink in water, Kū. iii, ii, 14: Kū. iii, ii, 73 (followed in this case by īrrum). Sorscery, bray alone, and eat in ama-rig (sic, re-exd.), *AM.* 85, 1, 1.

Note the skin (bar), to be used for eyes, as amulet on neck, ‡, *AM.* 14, 3, 14, and a similar method for stiff neck, ‡, *AM.* 47, 3, iii, 10. Neither garlic, onions, nor leeks to be eaten when there is stomach-trouble, Kū. i, ii, 29, and of the first two, cf. *ib.* ii, ii, 37. It is advised not to eat šē-šar on the twelfth of Tisri lest a scorpion sting the man (*KAR.* 177, r. 11). According to SABB. 110 (*FJ.* ii, 134) leeks are bad for the teeth, but useful for bowels. Garlic is prescribed for teeth in E. Galician and also in Jewish folk-medicine (ib. 143) for toothache, a hazel-nut shell is filled with garlic which has been rubbed down, and this is laid on the tooth. Garlic was used in medicine pounded and rubbed in oil (ib. 141), and this is evidently indicated in En-ammatum's inscription on a stone mortar dedicated to Ningirsu as a b 4 8-tum-Gaz ("un recipient en pierre à broyer l'oignon", Thureau-Dangin, *ISA.* 51). *IMP.* ii, 1294, says that garlic is diuretic and used for stomach-troubles, and even as a poultice for the bladder. Pliny (*NH.* xx, 23) gives a long series of prescriptions for serofulous swellings on the neck, toothache, etc. In Assyrian magic (*Surpu* V–VI, 52 and 60) it is used like the pikurtu, the wool, and the goat's hair, which are all symbolically shredded with appropriate rites that the tabu on the patient may be removed.

3. šē-sikil-šar, with probable Semitic equivalent *sikillum šar*. It has all the appearance of being distinct from "garlic"; in the hemerologies (e.g. *KĀR.* 147, 6, 24: 177, r. iii, 12) it follows the prohibition against garlic quoted above, p. 53, the risk of eating šāmšē-sikil on certain days being that šurub lēbbi will result. The name šē-sikil-šar

1 No. 27, but 71 in *Contrats de Larasa.*

2 Occurring as (sē)za-ha-ti, p. 52.

3 Does this mean that the patient is impotent? Garlic was used as an aphrodisiac in later times, e.g. Preuss, *Bib.-Talm.-Med.* 538: cf. *FJ.* ii, 143.
suggests the "bright garlic", and it seems probable that it is the onion. The only objection to this is that
bi~b'u, the Heb. bešel, is given (on p. 52) as equivalent of ga(?)-[ṣar]-ṣar and gir-zik(?)... it must be the gi-ir-ṣa-[i] of p. 52, the "head-leek". Nevertheless Arabic supplies ṣiqil (modern Iraqi Arabic ṣiqil, Weissbach, LSS. 1930, 321 ff.) for "wild onion", and it would therefore appear that the value sikil (i.e. EL) represents the (wild) onion, taken over in Semitic as sikillum.¹

sē-sikil is found in Shulgi's time (e.g. Turk. No. 121, iv, 9). (Note sē-sikil, Agade-period, De Genouillac, ITT. ii, 22, No. 4405 (pl. 66): sē-sikil-[ṣar], Pinches, CT. vi, 13, 15, a, and sē sikil-lum [ṣar], ib. 16, a, and sē sikil-lum hul(?)-ṣii(?)-[ṣar], ib. 17, a.: cf. D. 164, 62 ff.

The word is sparingly used in MT.: ears, AM. 34, 1, 36 (sē-sikil). This is paralleled in Pliny, NH. xxix, 39, where onions and garlic mixed with fat or other ingredients are recommended to be inserted in the ear. For dryness of the eyes the Assyrians used sē-sikil-la with ṣamša drunk in beer, the eyes being [anointed] with oil, AM. 8, 1, 11. The skin of it (bār sē-sikil-ṣar) is used, †, for an uncertain disease, KAR. 205, 16.

Of the Squill, FCH. 35 says that the authors have come across no case of its use as a medicinal plant in their district (in Palestine).

4. Mirga ṣar has a similarity of sound with the Arabic maṛjān some kind of spring cabbage, but the Sumerian equivalence on p. 52 suggests that we must have a definitely alliaceous plant here. Usšurati, its synonym, may well be the Arabic ʿansul, Urginea scilla Steinh., squill: kismu may be the Syr. ʾamākē, some form of Cepae, bolbos, Muscari comosum, FJ. ii, 186. The "Of-30 plant", as biṣru "onion", must represent the layers of skins (DACG. 179), like ṣamša + 20, possibly tale (ib. 180).

D. 1. ZAG-ḤI-LI-ṣar, ṣamṣahle, Lepidium sativum L., cress.
2. ṣam Kudimeru, ṣam kudimeranu, the same.
3. ṣam Saṭāmu, perhaps the wild variety of the above.

Pl. 34, K. 4565, 35-41; 108860, CT. xxxvii, 30, ii, 40-4 : VAT. 9000:

| ṣam ku-di-me-ra-nu | ṣam ku-di-me-[ru] |
| ṣam ḫa-ra-zi-uš | ṣam " ina maṭ-[ati] |
| ṣam ḫa-ra-zi DIR | ṣam " ina maṭ-[ti] ⁵ |
| ṣam bi-zu-6-na | ṣam saḥ-la-[nu] ² |
| ṣam kiš-ka-ra ⁸ mi | ṣam saḥ-la-[nu] ² |
| ṣam hun ¹⁰ te-e | ṣam hun ¹⁰ te-e |
| ṣam a-ku-ši-mu | ṣam a-ku-ši-mu |

¹ The similarity in sound to scilla is perhaps only a coincidence.
² 108860 adds as an additional line, ṣam ditto = ṣam, ...
³ Ib. dš.
⁴ Ib. ṣu., probably more correct than DIR (VAT. 9000), which would appear to be a mistake.
⁵ VAT. 9000, ṣam saḥ-la-a-nu.
⁶ Apparently on the tablet a gloss is added which I cannot read satisfactorily; the word is so evenly divided over the space that ṣam bi-zu-na appears to be correct. 108860 omits this line.
⁷ VAT. ṣam.
⁸ Ib. adds hād.
⁹ Ib. (blank) = ṣam...
The connection of this section with *sahle* appears certain from Pl. 37, 81–2–4, 264, which gives:

| 1. | *san* |
| 2. | *san-a-[ku-ši-ma-nu]* |
| 3. | *san-sah-li-še* |
| 4. | *san-me-me-[tū]* |
| etc. | |

1. The reading of the sibilant in *sahle* is certainly not *š*. Landsberger, OLZ. 1922, 343, quotes *sa-ah-li-i* from Vorderas. Schrift. xvi, 102, 25 (cf. AM. 96, 1, 8 ff.), and the pun in Maqlû v, 32, kīma *san-zag-hi-li-sar* *lisšuluši kispūsa* "like *sahle* may her sorcery prick her". The Assyrian has the correct root here, since the pungency of the *Lepidium sativum* is well known. A form *sa-ah-li-e* occurs (at Susa, Scheil, MMAP. xxiii, 35, mixed (mezal) along with *še* and *kibši*.

In AH. 126 I was entirely wrong in identifying *sahle* with *Lotium temulentum* L., having been led astray partly by its use in the text which describes an Assyrian king scattering salt and *sahle* on the land of Elam (nagē *meElamīš* *usāhri bištu* *tansahle šar usappiša širūššun*, V.R. 6, vi, 78–80), which I took to indicate that it was the darnel of the NT. Moreover, there was the Arabic *sašal* (also *sašalimā* in Syriac) as a possible philological equivalent for *sahle*, a word for the more usual *zawān* "tares" (IB. 1370). Besides, *sahle* is found also in connection with bread in AM. 34, 1, 6: 35, 1, 9: and prob. 105, 13; darnel has, as is well known, frequently been introduced into bread, in spite of its ultimate deleterious effects (Stillé and Maisch, National Dispensatory 997), and it has been used as a potion when macerated in wine to produce drunkeness and sleep (IB., ib.), and it had a certain medical value at one time.

But Landsberger’s ingenious explanation of our Assyrian text, I am now convinced, cleared up the difficulty, he having compared the action of the king in Elam with that of a Persian king who sowed the fields with *bar gann*štē (Syr., mustard, from Nöldeke in Löw, Ar. Pfl. 427). It was Hrozný (Getr. 179) who rightly compared it with the Mishn. *šhālōm, Lepidium sativum* L., *káρdāmu*ν, although he, while recognizing it as *Gartenkresse*, suggested that it might be mustard. This latter is, of course, unnecessary, since the *Lepidium*, although having much of the qualities of the mustard, is distinct.

The seed of *káρdāmu*ν was bruised and eaten like our mustard, according to Xenophon (Cyr. 1, 2, 8), esp. by the Persians, and Pliny (NH. xx, 50) says that the best cress (*nosturtium*) is the Babylonian, the wild variety having the same qualities as the cultivated sort, but being more powerful (note also F.J. i, 509). Joret (Les Plantes dans l’Antiquité,

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1 Sequence from VAT. and VM.
2 Cf. in MT., of feet and shins, *nashhalāšu*, KAR. 191, 16: AM. 70, 7, 3: the upper part of her womb *nashhalāši*, KAR. 195, r. 16. *Sah-li-e* occurs A.M. 16, 1; 26: 39, 1, 43, and *sah-li-e*, 15, 6, 10: the dup. 16, 4, 4, and 64, 1, 35 show *zag-hi-li* varying with *sah-li-e*.
3 OLZ. 1922, 343.
4 In the Ras Shamra texts Dhorme compares the *šhit* with the Assy. *sahullatu*, see Virolleaud, G處s. 1, 24.
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(6) says "le cresson ou la roquette et le persil, comme l'ail et même l'oignon, sont moins des légumes véritables que des condiments" (in Persia). Galen (quoted Gerarde, *Herball*, 250) says that cresses may be eaten with bread *veluti obsonium*, as the custom was among the Spartans. Herzfeld (*Beih. 34*) mentions *L. sativum* L. as a garden-plant at Qala'ah Sherghat. It is cultivated throughout India (*IMP. 196*). The seed being of a reddish colour without odour, but with a pungent and mucilaginous taste (*BMV I. 151 ff.*).

The use of *sahlé* as a food in everyday life goes back certainly as far as the 3rd Dyn. of Vr, the seed being mentioned, *e.g.* in De Genouillac, *ITT.* No. 392, iv, 9: No. 5926, 3. In Pinches, *Amherst Tablets*, No. 69, i, 7, 14 qa of *ZAG-HI-LI*-seed is quoted along with "10 gur 240" of "royal pulse", which shows the relative proportions of the two in ordinary use: the seed mentioned in Shulgi's time (*Turk. 121, iii, 10*): on a vocabulary of the Ur period the seed of *ZAG(!)-HI-LI-SAR* occurs alongside the seed of *GA-RAS-SAR* (leeks), seeds of *LU-UR-SAR* (beans), and seed of *UR-LAI-SAR* (*Scheil, RA. 1921*, 60, 29–32). An OB. letter (*Kraus, M7AG. 1931*, 35) mentions the sending of "60 qa of *ZAG-HI-LI-SAR*", and another (51) speaks of *ki-is-si-bi-i-i u sa-ah-li-li " coriander and cress".*

This use continues down to late Bab. times: *cf. kurmatim b3-at-tim* *sahlé šamni NIG-GAI-LA parzilli* "rations, cress, oil, a sickle (?) of iron" (*Ebeling, Neub. Briefe*, C, 136, p. 111): "2 pi of *šE-BAR* (barley), 2 pi 18 (qa) of dates, salt, *sahlé" are the food for the month of Tēbet for a boatman (*Nbn. 925*): oil, salt, and *sahlé ša šatu-u-[su]ana imeri-tunu bēlu lišum, i.e. the food for the year 3 to be sent by donkey (*Ebeling, ib. C, 85, p. 240; cf. ib. K, 16): *sahlé ša raggati ša imereh* (*ib. C, 107, p. 87*): it is measured by the *gur* in Cyrus 54. It was eaten with bread: *sahlé ša mimma ana lb NU-RE ina GAR-ZIZ-AN-NA ikkal "cress, in which nothing has been put, in wheaten bread he shall eat." (AM. 35, 2, 8): ... *sahlé itti GAR-ZIZ-A-AN ikkalu* "cress with wheaten bread they shall eat." (AM. 34, 1, 6): ... *ma sahle šAR GAR-ZIZ-AN-NA buhram saluppuru* ikkalu*"cress, wheaten bread... dates, they shall eat," (AM. 35, 7, 8) *hibza ina sahle ikkal "bread with cress he shall eat," (AM. 105, 13) (all four of the Late Assyri Period). Indeed, in a ritual text (KAR. 234, 25) ZID-DA and *sahlé*, flour and cress, are prescribed mixed together.

The *Lepidium latifolium* L. serves for sauces (*FJ. I, 505*). It has always been the custom in the Near East to include flavours in bread: in Mosul nowadays they mix fennel-seeds, *Punica mahaleb* L. (the stones of the sweet-cherry), and *Roccella Montagnei* Belanger (a lichen), and include it in the dough: or, of course, add the seeds of *Nigella sativa* L., as in Egypt, where the cakes are also sprinkled with the seeds of *Nigella sativa*, karmun aswad, *simsir* (sesame) and caraway (*Wilkinson, Anc. Eg. ii, 386*). Lane (*Thousand and One Nights* i, 134) instances the meal made in Egypt by the poorer people of bread with a mixture called *duqeh* of salt, pepper, zaatar (or wild marjoram) or mint or cummin

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1 10 240 10 our lugal.

2 Dougherty, *Archives*, No. 71, takes this to be the Arab, *minjal*. The *minjal* (pronounced *minyal*), as I saw it in Mesopotamia, is a serrated, curved knife of a sickle shape.  

3 This food for the year shows that *sahlé* means the seed (which would last a long time) and not the plant itself.
seed, and with coriander seed, cinnamon, sesame, or chickpeas, or a mixture of them, each mouthful of bread being dipped in it.

Salālē is forbidden in certain ritual performances: "On the days when thou doest this, 1 if he be a male he shall not eat salālē: if a woman, she shall not spin with a spindle (nor) eat salālē", KAR. 43, r. 5, 6. Obviously cress was part of the daily diet in Mesopotamia from the earliest times.

A special grinder or pestle and mortar were used in preparing it: note Pl. 16, S. 1805, 8–9, and Mat. 52, iii, 3–4, in conjunction with CT. xviii, 26; Rem. 339, 11–12:

<table>
<thead>
<tr>
<th>abanNA-ZAG-HI-LI-SAR</th>
<th>ur-su</th>
<th>ma-zuk-tu</th>
</tr>
</thead>
<tbody>
<tr>
<td>abanNA-ŠU₂-ZAG-HI-LI-SAR</td>
<td>i-li</td>
<td>i-li</td>
</tr>
</tbody>
</table>

and ii R. 30, 1, c:

| abanNA-ZAG-HI-LI-SAR | e-li ur-šī   |

Masuktu is from ẓäkku "to crush, pound" (E. xiii, 6). The ilt must be the upper stone, and the uršu or masuktu the main, lower stone on which the cress is crushed. A special description is given in CT. xxiii, 23, 10 (dup. KAR. 202, i, 15) (AJSL. 1937, 220): 10 šiqīl sa salē ša KA abanurši ša šiqīl šama nušpušu 5 šiqīl salē ša nu GAR-ZIZ-AN-NA bašši . . . iškal 5 šiqīl salē itti ½ qa šikari tadāk šattu "10 shekels of cress which the mouth of a grinder has not let go for the baking (?), (nor salt), nor vinegar destroyed; 5 shekels of cress baked in wheaten bread . . . he shall eat, 5 shekels of cress thou shalt pound, with ½ qa of beer he shall drink". The abanNA-ZAG-HI-LI-SAR, the special grinder for cress, is not necessarily confined in its use to this vegetable: it is used also for grinding GAB-ŠE-GIS-NI (mucilage of sesame) and "doves' dung" (carob-pods), KAR. 195, 4, as well as other drugs, AM. 40, 1, 63: particularly zīr šam ku₂₄-me₂₄ ("seed of manna"), CT. xxiii, 41, 14, like the manna of Num. xi, 8: salt, AM. 14, 5, 7: and abanur-ši for grinding various drugs, CT. xxiii, 50, 17. In AM. 24, 5, 16, and 36, 2, 9 (both for some mouth-trouble), the patient is directed to lick the abanNA-ZAG-HI-LI, where doubtless the pounded cress seeds have left much of their juice behind, which would, of course, be pungent and alogogue.

abanHAR is another word for the mill in which this plant is crushed (CT. xxiii, 23, 3). The word for the actual pounding is maḥāṣu (i.e. ZAG-HI-LI-A-ŠU-RA-RA=), (i.e. maḥāṣu) ša saḥši-e, CT. xii, 42, 42, a, preceding šE-ŠU-RA-RA=, (maḥāṣu) ša še-im (i.e. of corn). (For other words indicating the crushing of salālē see p. 60.)

Salālē is therefore the seed of the ordinary cardamon, cress, in daily use with bread, and having a special grinding-mill. We have next to consider the form šam saḥlānu (= šam ku₂₄-me₂₄). šam ku₂₄-me₂₄ is brayed dry in oil for a hollow tooth, Pl. 23, K. 259, 8, dup. KAR. 203, i 8: saḥlānu is used in MT., †, for eyes, AM. 8, 6, 6 (without det.); and int. (šam saḥlānu) alone in strong wine to be [drunk] (long diagnosis, stomach, etc.), etc., Kū. iii, i, 34. Obviously saḥlānu bears the same relation to

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1 Note that the relative ša is omitted after an indefinite plural: ʾina ʾume teppāṭu (see GE. 73).

2 [Śic], re-examined. Mat. has šam-NA-MA (!) . . . Deimel is incorrect in D. 332, 109 (a) in making ZAG-HI-LI-(ŠAR) as ʾaWR, c. Gewürz-Mörser . . . Yet he has also seen that it is saḥši, ib., (b) but has read "šinā" (1) on the next page for ZAG-HI-LI-A.
Saláh as șa'mšimranu to șa'mšimru ("like șa'mšimrum"), and șa'mazupiru to șa'mazupiru. Moreover șa'makdimenu is so similar in sound to κάρδαμον that the obvious suggestion is that it was taken over by the Greeks.

Since saláh is the cultivated variety (inasmuch as it is constantly mentioned in rations with grain), the sahlánu may perhaps be the wild kind (more powerful, as Pliny says, p. 56).

FP.3², 105 gives the Arabic as rašād (found in fields, probably having escaped from cultivation). This last may perhaps explain the Assyrian omens "When in a field zag-ur-li-š[AR] i-pu-úš, the crops will flourish, etc."

(Gadd, CT. xxxix, 4, 40).

Saláh occurs thus in MT.:

(1) Simply: ext.: Eyes, †, bind on, AM. 8, 1, 14 (5 shekels): †, apply, ib. 17; †, bind on, AM. 8, 5, 7: after an application of other drugs, bind on alone in beer-yeast, AM. 12, 8, 8: with flour of roast corn and others (†), apply dry to head, AM. 16, 1, 6: †, in a šābkū for eyes, AM. 19, 6, 5: †, as ointment, ib. 7: sim., †, ib. 12, and prob. 15.

Mouth (apparently), † (among which are roses, Ammi, pine- and fir-turpentine), bray in equal proportion mix in water, dry in the sun, again pound, boil in oil in a small copper pan, pound, again pound in fat, rub in sweet oil, bind all his limbs as a poultice, AM. 29, 5, 5: KA'DIB-BI-DA (obviously unpleasant breath), †, AM. 23, 2, 11 (cleanse mouth):

(1) Simply: ext.: Eyes, †, bind on, AM. 8, 1, 14 (5 shekels): †, apply, ib. 17; †, bind on, AM. 8, 5, 7: after an application of other drugs, bind on alone in beer-yeast, AM. 12, 8, 8: with flour of roast corn and others (†), apply dry to head, AM. 16, 1, 6: †, in a šābkū for eyes, AM. 19, 6, 5: †, as ointment, ib. 7: sim., †, ib. 12, and prob. 15.

Healed (apparently), † (among which are roses, Ammi, pine- and fir-turpentine), bray in equal proportion mix in water, dry in the sun, again pound, boil in oil in a small copper pan, pound, again pound in fat, rub in sweet oil, bind all his limbs as a poultice, AM. 29, 5, 5: KA'DIB-BI-DA (obviously unpleasant breath), †, AM. 23, 2, 11 (cleanse mouth):

(1) Simply: ext.: Eyes, †, bind on, AM. 8, 1, 14 (5 shekels): †, apply, ib. 17; †, bind on, AM. 8, 5, 7: after an application of other drugs, bind on alone in beer-yeast, AM. 12, 8, 8: with flour of roast corn and others (†), apply dry to head, AM. 16, 1, 6: †, in a šābkū for eyes, AM. 19, 6, 5: †, as ointment, ib. 7: sim., †, ib. 12, and prob. 15.

Mouth (apparently), † (among which are roses, Ammi, pine- and fir-turpentine), bray in equal proportion mix in water, dry in the sun, again pound, boil in oil in a small copper pan, pound, again pound in fat, rub in sweet oil, bind all his limbs as a poultice, AM. 29, 5, 5: KA'DIB-BI-DA (obviously unpleasant breath), †, AM. 23, 2, 11 (cleanse mouth):

(1) Simply: ext.: Eyes, †, bind on, AM. 8, 1, 14 (5 shekels): †, apply, ib. 17; †, bind on, AM. 8, 5, 7: after an application of other drugs, bind on alone in beer-yeast, AM. 12, 8, 8: with flour of roast corn and others (†), apply dry to head, AM. 16, 1, 6: †, in a šābkū for eyes, AM. 19, 6, 5: †, as ointment, ib. 7: sim., †, ib. 12, and prob. 15.

Mouth (apparently), † (among which are roses, Ammi, pine- and fir-turpentine), bray in equal proportion mix in water, dry in the sun, again pound, boil in oil in a small copper pan, pound, again pound in fat, rub in sweet oil, bind all his limbs as a poultice, AM. 29, 5, 5: KA'DIB-BI-DA (obviously unpleasant breath), †, AM. 23, 2, 11 (cleanse mouth):

(1) Simply: ext.: Eyes, †, bind on, AM. 8, 1, 14 (5 shekels): †, apply, ib. 17; †, bind on, AM. 8, 5, 7: after an application of other drugs, bind on alone in beer-yeast, AM. 12, 8, 8: with flour of roast corn and others (†), apply dry to head, AM. 16, 1, 6: †, in a šābkū for eyes, AM. 19, 6, 5: †, as ointment, ib. 7: sim., †, ib. 12, and prob. 15.

Mouth (apparently), † (among which are roses, Ammi, pine- and fir-turpentine), bray in equal proportion mix in water, dry in the sun, again pound, boil in oil in a small copper pan, pound, again pound in fat, rub in sweet oil, bind all his limbs as a poultice, AM. 29, 5, 5: KA'DIB-BI-DA (obviously unpleasant breath), †, AM. 23, 2, 11 (cleanse mouth):

(1) Simply: ext.: Eyes, †, bind on, AM. 8, 1, 14 (5 shekels): †, apply, ib. 17; †, bind on, AM. 8, 5, 7: after an application of other drugs, bind on alone in beer-yeast, AM. 12, 8, 8: with flour of roast corn and others (†), apply dry to head, AM. 16, 1, 6: †, in a šābkū for eyes, AM. 19, 6, 5: †, as ointment, ib. 7: sim., †, ib. 12, and prob. 15.

Mouth (apparently), † (among which are roses, Ammi, pine- and fir-turpentine), bray in equal proportion mix in water, dry in the sun, again pound, boil in oil in a small copper pan, pound, again pound in fat, rub in sweet oil, bind all his limbs as a poultice, AM. 29, 5, 5: KA'DIB-BI-DA (obviously unpleasant breath), †, AM. 23, 2, 11 (cleanse mouth):

(2) "Water of sahlē," AM. 11, 2, 29 (gloss to "copper dust", †, for eyes).

(3) Flour ša-a-li-e?, with other kinds of flour, for bruise (dikšī) poultice, AM. 96, 1, 8 ff.

The adjectives applied to it in MT. are:
(a) bi•-ti, see above, p. 59 : bi•-tim (= essētim "fresh"), AM. 83, 1, r. 20.
(b) Qalute "roast", †, in poultice, AM. 78, 9, 2 : 81, 2, 8 : (uncertain use), AM. 98, 2, 8 : qalatî "roast", †, in poultice, AM. 31, 2, r. 6 : qalatē bašati ("roast, alive"), †, for eyes, AM. 15, 6, 10.
(c) Teniti "ground", CT. xxiii, 23, 6 : AM. 64, 1, 16 : 79, 5, 4 (all ūAR-tim) : AM. 39, 1, 28 : 82, 2, 15 : teneti, †, in poultice, AM. 98, 3, 19 : tenetim, AM. 80, 1, 5.
(d) Sīkite "powdered", AM. 81, 1, 4 : sīktē, AM. 39, 1, 33 : sīkati, KAR. 202, ii, 32 (†, bind on head).
(e) Pašate "pounded", AM. 80, 7, 3 : pa-ha(l)-ti, in beer drink for aśā, KAR. 202, 42.
(f) Kišēti, AM. 11, 2, 26.
(g) Ťubbatē, along with bread in an offering, BBR. No. 1–20, 34.

See p. 55, šamtupē, šamtubbae (or šamtupē).

The use of Lepidium sativum L. medicinally in India is very common. The seeds are used in mucilage, powder, and paste, being alterative, tonic, aphrodisiac, stimulant, and aperient; a cold infusion with mucilage is used to check hiccup; as an alterative for enlargement of the liver and spleen. Bruised, they are mixed with lime-juice and spread on linen ext. for internal inflammations and rheumatic pains. Saccharum officinarum with clarified butter and seeds of Lepidium are used as a restorative by native women (BMM. 152 ff.). In the Punjab the plant is used for asthma, cough with expectoration, and bleeding piles, while the root is used in secondary syphilis and tenesmus; and the seeds, boiled with milk, are thought to cause abortion. Ext. in general the seeds are of great service in all the diseases for which mustard is used, and are also used in dysentery and diarrhoea (IMP. 96 ff.). According to Sanskrit writers the seeds are tonic and alterative, efficacious in hiccup, diarrhoea, and skin diseases. Mahomedan writers consider that they have aphrodisiac and diuretic qualities, and recommend them for spleen. According to Belalw the seeds are considered in the Punjab to be galactagogue (IMP. ib.). Pliny (NH. xx, 50) says that the nasturtium (L. sativum L.) is antaphrodisiac: there are two kinds, one a purgative, used also as a liniment with bean-meal for scrofulous sores, while the other, darker than the first, carries off vicious humours of the head, and sharpens the sight: in vinegar it calms the troubled spirits, and drunk with wine it is used for spleen, or in honey for a cough. The seed is good for asthma or cough, and a decoction in goats' milk is used for pains in the chest; as a liniment in vinegar it removes spots from the body. The smell of burnt nasturtium drives away serpents, and neutralizes the venom of scorpions, and gives relief in headache, and applied to the head
with mustard it is a remedy for alopecy, and with fig is applied to the ears for hardness of hearing. The juice, if injected into the ears, cures toothache and with goose-grease is a remedy for porrogo and sores in the head. It is employed for lichens and malformed nails.

"Als Gewürz verwendet, wie die Gartenkresse (L. Sat.), die Brunnenkresse (Nasturtium offic.) und die Bitterkresse (Cardamine arora) (KERNER 2, 677). Sie dient zu seinen Saucen und war früher officinell (ÖKEN 1392). Sie muss früher viel mehr gebaut worden sein als jetzt, wo sie allmählich in Vergessenheit gerät" (FISCHER-BENZON 103) (FJ. 1, 505).

On the preparation of L. sativum see ibid. 503.

E. 1. sam-ph, šimru, Funiculum capillaceum Gilib., Fennel.
2. sam-Sharrnu (probably) Pimpinella anisum L., anise.

Pl. 19, K. 4216 + 4360 + 4586:

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<th>šam</th>
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<td>2</td>
<td>SU-nu-uš</td>
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<td>šam</td>
<td>3</td>
<td>ša-mi ha-bi-pi</td>
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<td>šam</td>
<td>4</td>
<td>HA</td>
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<td>šam</td>
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<td>HA : šim-ra-nu</td>
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<td>šam</td>
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<td>HA : šim-ša-hi-a</td>
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<td>šam</td>
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<td>HA</td>
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<td>šam</td>
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<td>pa-ri-e</td>
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The text given by Langdon, RA. 1916, 31, 3 gives:

šam-ra-a-nu = šam-ra-an-tú = šam-la-mu-u,

paralleled by Mat. 86, 7-8, 3:

šamšan (= HU-st)-ra-nu = a-ra-an-tú =

The various forms of the drugs in this list occur in MT. thus:

(a) šamšimru: simply: Sorcery, uncertain, AM. 85, 1, g. Root, šimru-uš šimri ... ears, AM. 34, 1, 32.


(2) Seed: Feet, with Ricinus, bray, apply, AM. 74, 1, iii, 2. Hand of Ghost, ź, drink in beer, AM. 76, 1, 25, Langdon, PBE. xxxi, 67, 8.

(3) PA (tops): Feet, ź, AM. 74, 1, iii, 12. Breast, ź, bind on, AM. 83, 1, r. 26 + 51, 9, 4.

1 Meissner, SJ. 5963, has slipped in reading this (šam) ur-nu (?), and Deimel (383,48) has not improved on it with šamur-nu. Šim is clear.
2 [Sic], re-examined.

(2) **pā** (tops): *Itch*, on head, †, ext., *AM*. 5, 5, 13.

(d) **sām-ri**: (1) *Simply*: ext.: Eyes, †, *AM*. 13, 4, 2 (?). Head (?), †, bathe, *AM*. 6, 5, 5 (†). [Breast and loins], †, bathe, *AM*. 49, 1, iii, 8. *Itch* (gurāstu), †, *AM*. 17, 1, ii, 1, 5. Threaded on wool to hang on neck, †, *AM*. 28, 7, 5 (*PRSM*. 1926, 70).


*Fumigate*: Ears, †, including sulphur, *AM*. 33, 1, 35.

(2) Seed: [Head], alone in oil, ext., *AM*. 64, 1, 19 (*RA*. 1929, 69).


*Int.:* Strangury, †, *AM*. 59, 1, 38 (?).

*Fumigate*: “Poison” of all limbs, †, *AM*. 91, 1, 8.

With this Langdon (*BEA*. xxxi, 72) rightly compared the Aram. šammārā “fennel”: the root šammar “made to flow” indicates the “tear-like drops” of *NH*. xx, 95. The main difficulty in this group is to distinguish between šamšimrū and šam-simrūnu (šamšimrūnu), and the solution lies in the similarity of fennel (*Anethum fomiculum* L., *F. capillaceum* Gilib) with anise (*Pimpinella anisum* L.) (“these fruits and the Anise have been confounded together”, *BMM*. 346: cf. *MI*. 129). The following are the points of difference between the two:—

**Fennel**: wild in A. Minor, Persia, and India (*Bentley, Organ. Mat. Medica*, 172), esp. common in the Mediterranean region. In Medicine as aromatic, stimulant, and carminative, rarely in substance, more commonly as distilled water (for flatulence), and volatile oil, the roots being formerly used (*BMP*. No. 123); in India, used as confection, paste, infusion, distilled water, and tea, promoting urine and perspiration, and being used for colic and amenorrhoea (*BMM*. 345). The leaves are good for diseases of the eyes, and increase milk (*HD*. 7) (*Culpeper, Eng. Phys*. 1814, gives numerous uses for leaves, seed, and root). *Pliny* (*NH*. xx, 95) says that the plant is good for eyes, the juice destroys small worms in the ears, the seed is used in wine for stings of scorpions and snakes, and for the lungs, liver, stomach, and to increase urine, the root is used for dropsy and convulsions, and the leaves applied to tumours: he includes a wild variety of fennel (“hippomarathron”), more efficacious in medicine than the above (for calculi, menses, and against serpents).

**Anise**: a native of Egypt, Crete, and Cyprus (*BMP*. No. 122) (*FP*. ii, 518). (Called šammārā rōmāyē, *FJ*. iii, 468, although in English the “Roman fennel” is the sweet variety, *Bentley, Org. Mat. Med.* 173.) Carminative and stimulant, the oil being used (*BMP*. 1, c); in India used as having a special influence on the bronchial tubes, and locally

1 *RA*. 1929, 53.
for headaches, and applied to the abdomen for flatus (BMM. 329). “The seed is only used in Physick,” the oil provoking urine, and of use against coughs; it takes away pains and noises in the ears, and outwardly the stomach and navel may be anointed therewith (HD. 8). Pliny says (NH. xx, 73) that it is good for the eyes, ears, cough, the stings of scorpions, as a carminative, for sleep, against calculi, vomiting, affections of the chest, etc., and as a liniment for phthisis, and for infants attacked with epilepsy; Pythagoras said that those who hold it will never be subject to such fits. The root is used for kidneys; Sosimenes prescribed it for lassitude in oil and nitre. NH. also recommends it for headache, either in fumigation or as a decoction in oil.

Obviously our evidence for the distinction of our Assyrian words as “fennel” or “anise” is slight. GunSimru, GunPI-Pi, and GunHA are all given as equivalents to each other: GunHA is the only one of these equivalent to Gunšimranu and Gunšamranu, of which the former is said to be like Gunšimarum. In MT. we find:

(a) GunšSimru, used simply only.
(b) GunPI-Pi, used simply, and the PA (tops) used also.
(c) GunHA, simply, and the PA (tops), seed and root used.
(d) Gunšamranu, simply, and the PA (tops) and root used.

Our evidence for the different, more modern uses of fennel and anise shows that we have:

(a) From fennel, distilled water, oil, seed, root, leaves, and juice.
(b) From anise, the oil, seed, and root.

It is therefore difficult to draw any very definite inference from such evidence as this about the exact distinction between Gunšimru, Gunšamranu, and Gunšimarum.

But the hemerologies do offer us a little better indication. Here it is laid down that Simru (always written out šim-ra, an important point) and cress should not be eaten on the second or fifth day of Elul (KAR. 147, 10, and 25; 177, r. 3, 18, and 42). Now this must surely refer to those seeds which are so constantly mixed in the bread in Mesopotamia, and consequently they will be the seeds represented by the modern wmnajj “fennel” (which I bought in the Mosul bazaar, Dr. A. B. Rendle, F.R.S., kindly identifying it for me as F. capillaceum Gilib), it being used with the sweet-smelling cherry-stones (Prunus mahalèb L.) and Rocella, pounded and mixed with dough. I have no knowledge of the anise being so used in Mesopotamia, although it must be noted that anise is certainly used in some northern countries either in making the bread or sprinkling on the surface of it (LPG. 38), and Pliny actually speaks of both fennel and anise in bread (NH. xx, 72, 96). Ainsworth mentions two species of fennel in June at Umrah in the Tiyari country, the inhabitants chopping up the fennel when green and putting it into sour milk (Travels, ii, 228). I suggest, therefore, that though our indications are not too well marked, we may see in the simpler form, Gunšimru, which heads the list, the fennel, rather than the anise, which we may refer to Gunšamranu (šimarùnù).

GunPI-Pi, the Sumerian for Gunšimru (i.e. fennel), has another equivalence (as GunPI-Pi) of k’anaktu, which, if it be an umbellifer, as GunPI-Pi suggests, and not frankincense, will be Opopanax (p. 346).
Another equivalence is *sam[a]tu*. Pl. 35, K. 271, 14.1

Pl. 29, K. 4566, 23, and KAR. 263, iv, 1, give *sam-ti-pi* as one of the *šam ašš* (appetizers), and Pliny (NH. xx, 72) gives anise (*Pimpinella anisum L.*) as having this effect, which, it must be noted, he does not definitely say of fennel.

*šamParā as = *šam[a]ša šašī(i)* “fennel of the mountains” will then be hippocarathron, Pliny’s wild variety of fennel, the *sammārā dhī* tūrā, F.J. iii, 464, which might be the *P. piperitum D.C.*, which grows in the dry hills (*FP.* ii, 545).


4. *šamSULLIM-SUR-BA-ŠAR*, *šašiltu*, “rust” or “stinking smut”.

5. *šamSULLIM-GIS-MI-ŠAR*, *šillantitu*, “smut.”


(A) Pl. 18, K. 4354, i–ii, 27–28, gives the beginning of the section, dup. of Pl. 21, K. 267, iv, 10–12, continued by rev., vi–v, 1–10. K. 8667, CT. xix, 50, 2–5, is a duplicate.

Pl. 18, i–ii : Pl. 21, iv.

1 Whether *pi-pi* has anything to do with “smell” (*phu, phlu*), as I thought in *AH*. 52, is uncertain; it is possible that *šam[a]lu* as the “fishy plant”, may have some connection, and perhaps the *šam-pi-pi-šal-la* (“*pi-pi* of the uterus”). Other compounds with *pi-pi* are *šam-pi-pi-pi*, *šam-aš-aš*, *šam-tab-ba-šar* (= *ususulti*?), *šam-lu* (= *samlu-nu*?), *šam-pi-pi-tak* (*pi-sum*?). It is by no means certain that we are to restore *šampi-pi* in Pl. 41, K. 8829, 7, for *šam-pi* eridit., and in Pl. 30, 79–7–8, 19, 15, for *šam-nu* (see pp. 108f.).

2 From CT. xi, 45, i–iv, *šam* a-lit tam | *šamSULLIM-ŠAR* | *šam* . . . . . . (i.e., *ni-si-gu-nu*) | *šam* ba-lit-tum. On *šamSULLIM* = *šišu*, see p. 147.

3 *Var. še-lu*, K. 8791; this text has only one line in this group before these four words following, i.e. *šamšu-šu-šar* | *ki-si-bi-ru*. I fear that I cannot understand Deimel (No. 367,163) “Zwiebelart” for *še-lu*.

4 K. 8667 and K. 8791, ši.

5 K. 8791, ši.

6 K. 8667 apparently omits this line.

7 K. 8791 gives the additional equivalence after this: *šamHAR-SAG-ŠAR* | *a-za-pi-ra-nu*.
(B) Pl. 46, Rm. ii, 203, obv. 2 ff.: 

<table>
<thead>
<tr>
<th>šamšá-mu ba-[lil]-tu</th>
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<tr>
<td>šamúl-tú</td>
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<td>šamúrE4-TI-LA</td>
<td>šam</td>
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</tbody>
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(C) Mat. 86, 7-9, 27:

šamSULLIM-ŠAR | šam-ba-lil-tú | lu-di-ru

šamSULLIM-ŠAR occurs in MT. as one of sixteen drugs, uncertain, AM. 98, 2, 10.

1. šamŠambaliltu was rightly identified by Meissner (MVAG. 1904, 3, 27, 39) as the Aram. šebhililtu, Syr. p'iltu, fenugreek.1 Fenugreek, Trigonella Fumum-Gracum L., “is a native of the south of Europe. Dr. Sibthorp found it in abundance on the shores of Asia Minor” (PC. xxv, 212). Ainsworth saw it in Mesopotamia (A. 36), where it was called “hubly” (hubla, FP. 3 i, 312). Pomet (HD. 11) says that its pods resemble a bull’s horn, and that as a drug it is of greater use ext. than int. It expels wind, but is disagreeable: it is emollient and anodyne, in use in emollient oysers. “In some parts of the south of Germany this plant is extensively cultivated as fodder for horses and sheep” (PC. ib.), which suggests a reason for its inclusion in MB. alongside lucerne. In this connection in MB. šam-ba-lil-ti šAR occurs in the same group as ašpasti šAR (= Syr. ašpastā, lucerne, Meissner, ZA. 1891, 296), niqdu šAR (possibly the Arab. reqd, Reichardia tingitana L., FP. 3 ii, 151), šurbi šAR (Asa foetida, p. 352, qisṣu šAR (cucumber, p. 81), and piqquš šAR (Heb. pagqūḏi, Meissner ib. 297). The value “fenugreek” is curiously confirmed by the equivalence in Šabar of šam tuldu (šam tuldu) which must be the Aram. tilān “fenugreek”, probably the Phoenician ʔeš-šaw (cf. FJ. ii, 475) (not the same as šam tul-te, Pl. 23, K. 259, 7, i.e. “a drug for the worm” in teeth, p. 303). As was mentioned above, fenugreek is a good forage (FP. 96), which may perhaps allow us to refer Šambaliltu to the Heb. b'ilil fodder.

šamMUH-AS-AS, eriṣrum, i.e. “(strong) smell”, comparable to šamMUH-AS-AS-ŠAR ... (p. 73), presumably Lactuca virosa L., a strong-smelling plant (which is evidence again here for fenugreek), this lettuce being “of a disagreeable smell” (said to be like opium, Gerarde, ed. 1633, 309), especially the seeds (VK. 534, although FP. 3 i, 312, describes them as sweet-smelling, and added to give a savour to hay which has become musty. It should be added that CT. xii, 34, i, 45, discussing eriṣu “smell”, gives šamMUH-AS = e-riṣ-tu šam-mu “smell + plant”: moreover, one of the synonyms for “fenugreek”, šAMLadirus, is given an equivalence šame-riṣ-ti kašš šAE, i.e. “scent of the rose” (p. 64). Whether the scent of fenugreek can be compared to that of the rose depends on the fancy of the seeker.

šamLadirus is a synonym for šamŠambaliltu, and šame-riṣši kašš šAR, its seed being used in MT. once in enema, †, KAR. 187, r. 7 (i.e. zir šam-di-r[i]). šamEriṣši kašš šAE is used also once in MT. (p. 198) for the

1 Whether these two are the same is discussed in FJ. ii, 478.
head. The former prescription is comparable to the use of fenugreek in clysters (V.K. 534), the latter to Pliny’s (NH. xxiv, 120) prescription for ringworm and dandruff. *samEri-šat eqīl* occurs *KAR.* 203, iv, 2 (for *ašī, appetite*), but I cannot help thinking that this is a mistake for *sam*ša-mat eqīl, cummin (p. 76).

*sam*šam-tab-ba-šar suggest a doubling of some obvious part of the plant, but what is not clear.

2. Finally as a parallel in this group we have the *kisibirru* (*kusibirri šar in MB. 33*) compared by Meissner, *ZA.* 1891, 294, to the Aram. *kusibartha “coriander”, Coriandrum sativum* L., which I have bought in the Mosul bazaar under the name of *fazbū’ah*, it being prescribed in tea for stomach-ache. Pomet (*HD.* 9) says it helps digestion, makes breath sweet, and closes the mouth of the stomach. It does not appear to occur in *MT*.

3-6. The next group in this register ((A) vi, 7-10) stands out curiously. All the words begin with *sullim* or *ša-šū*, and end with *šar*: all the Assyrian words are feminine and two end with the termination -*anitu* (both of these referring to colour, black and saffron). There is no reason that we are obliged necessarily to consider them as plant names, except that they follow at the end of the *šambalītu* group. The initial sign *sullim*, which, besides being used in groups to give the meaning “tares” (p. 146), “fenugreek”, and “coriander”, is properly the word for “harvest” (*eburu, šibirru*), and this, with the two words for “black” and “saffron”, suggest that we have here words for “blight” or “mildew” in corn. Here is the evidence:—

There are at least three kinds of disease in corn (fungus, blight), these being to some extent represented in Hebrew by *yērdāqôn* (root *yāraq*, Assyr. *arāqu*, “be green” or “yellow”), and *ṣiddāphān* from *sādāph* “to scorch, blight”. The modern English for them is “rust”, “smut”, and “bunt”:

(a) “Rust,” *Puccinia graminis*, a fungus which makes its appearance in orange-red spots or streaks on the stalks and leaves. This must be the *yērdāqôn, ṫāqqa, rubīqa*, in Arabic *araqān*, a blight or disease on seed-produce, with the meaning of jaundice in men. The result is a brown or reddish dust similar to iron-rust (*EB. xith ed.*, s.v. “Wheat”). Clearly, from the reddish dust we have here, our Assyrian word *azupiranitu* the “saffron-thing in harvest”, from *azupiranu*, the crocus (which latter has a brown dust given off from the stigmas).

(b) “Smut,” *Ustilago Tritici*, a mass of dark-coloured spores, “burnt ear,” like charcoal, without smell (*EB. ib.*). This must be our *šištānutu*, “the black-thing in harvest,” which has no hint of smell in it.

(c) “Bunt,” *Tilletia Tritici*, “stinking smut,” a black powder with the smell of “stale herrings” (*EB. ib.*). Here we probably have *šaḥītu* (*sāḥītu*) (the meaning in Sumerian is uncertain), probably connected with *šālu*, the Syr. *šālu* “verdigris”. That this suggests “rust” is obvious, but there may also be the idea of the disagreeable smell produced by rubbing copper, but whether this can be compared with the smell of
"stale herrings" I cannot say. We can, however, see in it either the "rust" of (a) or the "stinking smut" of (c).

The fourth word, *assulta*, may be cognate to the Arabic *wasīha* "be dirty", and so connected with "smut".


2. *mašek* *hullatum* ṣAR, Ammi *Visnaga* (L.) Lam. Bishop's Weed.

3. *sam* *Alamā*, perhaps *Anchusa*.

1. *Pl. 20*, K. 4216 + 4360, r. 32 ff.:

<table>
<thead>
<tr>
<th><em>samā</em> śā-mi GĪŠ-ṣAR</th>
<th><em>samni-nu-u</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>samā</em> śā-mi ḫi-in-ṭi</td>
<td><em>samni-nu-u</em></td>
</tr>
<tr>
<td><em>sam</em> KUR-RA-ṢAR</td>
<td><em>samni-nu-u</em></td>
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In MB. this plant occurs as *ni-nu-ū* ṣAR in the same sector as ḫi-īṣ ṣAR ("parsley", or ḫi-īṣ ṣAR "lettuce"), *mašek* *hullatum* ṣAR, and *šimittum* ṣAR ("beetroot").

The difficulty lies in deciding whether *ninā* is the equivalent of the Syr. *nānā* "mint", or *ninād* "Ammi". Küchler (83), however, agreed with Meissner in making it *Ammi*, and this seems certain, since *mašek* *hullatum* will be seen on p. 69 to be another word for *Ammi*.

Further evidence lies in the description *samšami ḫinti*, which latter word may be compared to the Syr. *ḫinti-ṭḥā*, *unguentum*, *condimentum* (balm), μῆγμα (Brock. 117), the Greek word meaning a compound, esp. of made dishes, medicines, etc. Pliny (*NH. xx*, 58) says of the *Ammi* that "it is employed for just the same purposes as cummin, for we find it used at Alexandria for putting under loaves of bread, and forming an ingredient in various sauces". This gives us a new Assyrian root *hanātu*, equivalent to the Heb. *ḥāmat* "make spicy".

With all evidence thus pointing to *samninā* as *Ammi*, we can examine its occurrences in MT. The use of *Ammi* actually is so similar to that of mint that the coincidences in use need not affect the relative identifications:

1) *Simply*: ext.: *Eyes*, apply, †, *AM. 9*, 1, 13: 19, 2, 6 (in oil): 10, 4, 5: 19, 6, 5: *ib. 7* (boiled and brayed with oil and white (?)(or dry (?)) wax): *ib. 10* (roasted and brayed in fat, wax, and *ḥimetu*-ghee). Itching feet, with *samkazalla*, bray, apply locally, *AM. 74*, iii, 3. Tooth (or mouth), apply, †, *AM. 36*, 2, 3 (for *KA-DIB-BI-DA*, mouth-trouble), †, cleanse mouth (presumably in all cases), *AM. 7*, 1, 15, 19, 25, 30: possibly when saliva comes when speaking, bind on "all his limbs" as poultice, *AM. 29*, 5, 5: when teeth (ka?) deposit yellow, etc., †, cleanse mouth and nostrils, *AM. 31*, 6, 7. Apply to nose, †, *AM. 26*, 1, 3. For woman sick of . . .-al-lu-tu", put on wool and insert in womb, † (?),

1 I think that *šibītu* ṣAR (the Syr. *ḥēttā* *Anethum graveolens* L.) of MB. 23 (Meissner, *ZA. 1891, 203*) is less preferable than *šibītu* ṣAR, beetroot.
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KAR. 196, iv, 17. Anus-trouble (?), apply (?) to anus, †, KAR. 191, ii, 10. Ghost, anoint, †, in cedar oil, AM. 96, 4, 3. Uncertain disease, †, Bray, bind on in kirrani(?)-oil, AM. 30, 2, 3: alone, Bray, anoint in oil, KAR. 203, i, 46.

Int.: Factor in mouth, apparently with Lepidium (drink), AM. 36, 2, 12 (PRSM. 1926, 65). Bile, alone, drink with fresh water, Kū. iii, ii, 14. For easy accouchement, with šamšišan kalbi (Cynoglossum or Plantago), AM. 67, 1, iv, 15: some uterine trouble (menses?), †, drink, KAR. 194, iv, 1. Stomach, alone in beer, AM. 48, 1, 9 (RA. 1929, 79): alone (and sarrum, he shall vomit), Kū. ii, iii, 12. Virility charm, †, drink, Liebesz. 49, 23, and 28. Sorcery, with 31 others, drink, AM. 89, 1, 8.

Enema: †, AM. 56, 1, 6: 57, 5, 1, 4 (5 shekels): 94, 2, ii, 4. Stomachic, †, apply ext., and as enema, KAR. 157, 3: allan (suppository), †, AM. 43, 1, 3, 7: 57, 5, r. 6: for diagnosis including involuntary diarrhœa, †, KAR. 157, r. 32.

Fumigation: †, AM. 10, 2, dup. of 99, 3, 14 (for ghostly seizure) probably 19: †, 93, 1, 11 (for ghostly seizure): †, in old ox-fat, 103, 20 (for ghostly seizure): for ears, AM. 33, 1, 34.

Quantities: 10 shekels, AM. 57, 7, ii, 6: 5 shekels, AM. 57, 5, r. 4: 64, 1, 8.

(2) ZID (powder) (½ (?) qa), AM. 77, 2, 8.

(3) Leaf ("while it is yet green"), for anus-trouble, alone, in strong vinegar and dopranu (p. 279) oil, KAR. 203, iv, 9, dup. Pl. 30, 8, 698, 16. "Yellow" or "green", drink in beer, †, and anoint, AM. 38, 12, r. 8. Apply head, †, KAR. 202, i, 45.

The uses in India of "Bishop’s Weed" are given in BMM. 326 as powder, decoction, infusion, and tea; it being considered a fine stimulating and hot carminative and antispasmodic, used for colic and tympanitis, chronic discharges, and to lessen sputum, while a plaster of the crushed fruits is said to relieve pain. The seeds are used hot as a dry fomentation to the chest for asthma, while the oil is used ext. for pain. Pomet (HD. 3) says that the seed of "Bishop’s Weed, or the Ethiopian Cummin", Ammi, is the only part in use, it being carminative, cephalic, resisting poison, expelling wind, good against colic and pains in the womb, and provoking menses.

šamNinú is shown by its name to be "a plant of the garden", and yet Post (FP. 2 i, 525) gives the three kinds of Ammi, A. majus L., A. copticum L., and A. Visnaga (L.) Lam., as growing in the fields (the first also in waste places). I found A. Visnaga growing near Mosul (kindly identified for me by Dr. A. B. Rendle, F.R.S.), while A. majus was seen by Herzfeld (Beil. 30) at Qala‘ah Sherghat. This fact about its habitat (i.e. growing wild) is obviously expressed by šamKUR-RA "mountain plant", although in contrast to its other name "plant of the garden". Rauwölff, i, 49, mentions Visnaga at Tripoli.

It was known in the time of the 3rd Dyn. of Ur (Scheil, RA. 1921, 58, 19 (šamKUR-RA), and an OB. letter mentions the sending of šamni-in-nam (Kraus, MVAG. 1931, Altb. Briefe 35). There is a ridiculous pun on its name in Maqla v, 30, kina šamnínú limusšu kišpuša "may her sorcery be

1 Note that CPI. 285 says that the Ammi of Dios. is A. Visnaga L., but not Carum copticum Benth, Bishop’s Weed, which is called by the name of ajowan, etc.
shaken like nīnā'". In an omen-text, when šamKUR-RA appears in a city, that city will go to ruin (ṭaarrub), Gadd, CT. xxxviii, 5, 140.

2. This suggestion about the Umbelliferæ allows us to solve the massaKullatum ŠAR (hitherto read saKullatum ŠAR). With this determinative we should find a leather object in Kullatum, and obviously our problem is solved by the Arabic hāllāh, ʿullāh (not only a "sheath", but actually the Ammi Visnaga (L.) Lam., the umbelliferous stalk thus not inaptly representing the "sheath" (FP². i, 525, 526).

Along with massaKullatum, the "sheath-plant", Ammi, we should consider šamKUS-DAR-KU | a drug for ša-ZI-GA | šamKUR-RA (KAR. 203, r. iv, 34, and Pl. 43, S. 60, 14, re-excl.), the probability being that the text means that it = šamKUR-RA. Here, then, we have the probable Sumerian equivalent for massaKullatum ŠAR; the KUS may well be the det. massaK; DAR (having regard to the close connection of DAR and U-DAR, for which see D. 113 and 418, and compare the values of banū and sāmu in both) offers a value for dis-DAR (i.e. U-DAR, read UGUN) of išētum which may mean "sheath" (cf. the išzu of Asb. ii, 12, a dagger, of gold). If to this we add the value KU "to eat", i.e. "the eatable-sheath-plant", it will obviously be the same as the massaKullatum ŠAR. Ša-zi-ša, niš libbi, is a phrase representing sexual vigour. Pliny (NH. xx, 58) says that it is said that if women smell at Ammi during sexual congress, the chances of conception are greatly promoted thereby. Are we then to see in ḫi-iš ŠAR (ĤI-IŠ-ŠAR) not the ordinary "lettuce" (p. 73), but perhaps a second word of similar form, to be related to another of the Umbelliferæ, the (doubtful) Syr. kusdā, probably "parsley" (FJ. iii, 426).

3. šamAlamū occurs rarely in MT. The ash is to be brayed and put on wool alone and inserted in the uterus, KAR. 194, iv, 23; the simple plant is one of many drugs in a long prescription, KAR. 208, 19. The root is mentioned on Pl. 37, 81–2–4, 269, 3. The simple plant or drug occurs along with several others including šamšadānu, šamšašumtu, šamšašan kalbi, šamplil-bat, šamnu-luh-ja, and šamkasī ŠAR (re-examined and corrected) in ADD. 1042, which is presumably a druggist's list. It occurs in the plant-list, Pl. 20, Cols. X–IX, 38: (following šamminū):

| šam-a-la-mu-[u] | inbu-šū |

The description given above which includes it with šamrānu and arantu (fennel, and some form of grass) all described as šam[halāt], almost suggests that they are included with the Umbelliferæ (i.e. "fennel-plants"). The nearest philological comparison is the Syr. bašlamthā (bāšlamthā, etc.), which seem to be the slimy plant Anchusa (FJ. ii, 292), of which many species are given in FP². 224 ff. Note "In einer taanitischen Überlieferung hat sich in einem Satze neben Artischocke, atad und ṣal′āl der Name einer ṣafāli Kraut oder Strauchart erhalten" (FJ. i, 284).

H. 1. šamtin-tir(-par)(-šar), kamunu, Cuminum Cuminum L., cummin.
2. šamtin-tir-gīū(-šar), zibū, Nigella sativa L., "black cummin."
3. šamKamauntu thīni, "lichen of the tamarisk."
K. 8791 (Pl. 41):

| $\text{sam}\text{TIN-TIR}$ | $k[a-mu-nu]$ |
| $\text{sam}\text{TIN-TIR-PAR-ŠAR}$ | $k[a-mu-nu]$ |
| $\text{sam}\text{TIN-TIR-GIC-ŠAR}$ | $zi-bu-[u]$ |

Ditto

K. 4174 (CT. xi, Pl. 45), i, 3:

$ga-mu-un | ^{\text{sam}\text{TIN-TIR-ŠAR}} | ^{\text{sam}}[\text{tin-tir}]$.  

$\text{VM. (Pl. 42, K. 4140, B, 19: Pl. 44, i, 43)}$ gives:

$\text{sam}_{\text{ka-mu-nu}} | ina \text{ DU SU-DIN-...}$

but $\text{Mat. 88, i-67.}$

$\text{sam}_{\text{mu-u-nu}} | ina \text{ ID šu-din-ni}$

Note also $\text{sam}_{\text{si-mat eqli}}$ (KAM) as kamunu, p. 75 and p. 76.

1-2. Kamunu occurs in MT. thus: $\text{sam}_{\text{TIN-TIR-ŠAR}}, \text{kamunu}$ ($= \text{sam}_{\text{TIN-TIR-PAR-ŠAR}}$ “white kamunu”).

(1) Simply: ext.: Blister on the foot, anoint with himetu-ghee, bray pine- and fir-turpentine and $\text{sam}_{\text{TIN-TIR}}$ together, and apply, $\text{AM. 74, iii, 18}$. For insects, bray and anoint in oil alone, $\text{KAR. 203, iv, 20}$:

$\text{sam}_{\text{ka-mu-nu}} | ina \text{ DU SU-DIN-...}$

(2) Seed: probably feet (cf. l. 17 “broken” footsole), after bathing and anointing the place, bind on this seed with seed of $\text{biš} \text{šar}$ (lettuce) in rose-water, $\text{AM. 75, 1, iv, 8}.$

It is used in a charm against a backbiter (bêl dababi) with coriander, Nigella, andahšum and ezizu ($\text{KAR. 171, dup. 178, r. vi, 10}$). About the beginning of the second millennium 2 $\text{qa}$ of $\text{ga-mu-ni}$ was sold for 1 $\frac{1}{2}$ shekels of silver in Anatolia (Gelb, Ins. from Alıshar 55, 12).

$\text{sam}_{\text{TIN-TIR-GIC-ŠAR}}, \text{zibû}, \text{“black kamunu”}$.

(1) Simply: ext.: Eyes, $\dagger$, apply, $\text{AM. 8, 5, 4: 17, 4, 4: 19, 6, 15}$. Ears, $\dagger$, insert, $\text{AM. 36, 1, 14, 15}$. Tooth, $\dagger$, apply, $\text{AM. 36, 2, 3}$. Probably

1 Cf. Pl. 25, r, 8, LU-UB $\text{ša kima HI-ŠAR} = e$-zi-is-pu.
VEGETABLES

hair, †, dry, bray [apply], AM. 4, 1, 26. Some form of swelling, bruise, or sore, †, apply in cedar-oil, AM. 52, 3, 10: in himetu-ghee and cedar-oil, AM. 52, 5, 13: for lamsait ḫillūt (šamzi-be-e), AM. 44, ii, 15.

Int.: Mouth (probably factor) drink 1 šē (grain) with 1 šē each of others in oil and beer, AM. 26, 6, 12. Some mouth or tooth trouble, alone in beer, AM. 36, 2, 13. Stomach, †, AM. 16, 4, 4: (in oil and kurumnu-beer), AM. 64, 1, 35: in kurumnu-beer drink, †, Kū. ii, ii, 18. Strangury, †, in wine or beer, AM. 60, 1, 7.

Fumigate: for Hand of Ghost, †, AM. 99, 3, 17 (10 shekels).

Suppository: †, KAR. 157, r. 32.

In the VM. (Pl. 42, K. 4140, B, i, 8: Pl. 44, i, 33: Mat. 88, 1, 58 (JRAS. 1934, 776):

\[ \text{{(šam)ši}zibū | ina ſid šē + bar + šē} \]

"Nigella in barley-flour."

šamKamumū, long recognized as the Heb. kamūn, the Syr. kammūnā, Cuminum cyminum L. šamTIN-TIR-GIG "black cummin:" is, as Küchler rightly says (Kū. 85), Nigella sativa L. The two families are distinct, cummin being one of the Umbelliferae, and the Nigella ("faux cummin" in French) one of the Ranunculaceae, but they are evidently included in the same register in the Assyrian lists because of the similarity of their seeds.

Cummin, Arab. kammūn abyād, Phoen. χαμμύν (FJ. iii, 435), was probably native of some part of West Asia, and cultivated from the earliest times in countries bordering on the Mediterranean; the dried ripe fruit is used as mildly stimulant, aromatic, and carminative. The large quantities obtainable are shown by the amount (40,000 Tabriz maunds) exported from Bushire (Pelly, Trans. Bomb. Geog. Soc. xvi, 1860, 46). An Emplastrum Cumini was at one time contained in the London Pharmacopoeia (BMP. No. 134). In India the drug consists of pieces of stems, broken umbels, stalks, complete fruits, etc., and is used as a carminative and stomachic (dyspepsia, diarrhoea); locally a poultice of it ealys the irritation of worms in the abdomen (BMM. 339). Curiously enough, cummin does not appear to have been popular as an internal remedy in Assyria; its external use in MT. is paralleled in Syriac Medicine by the use of cummin for a wound (SM. ii, 657), insomnnia (ib. 659), eyes (ib. 660), ears (666), factor in mouth (668, to hold in mouth), stomach (677), anus (678), testicles (682), and to kill fleas (689).

Nigella sativa L., Arab. šānīz, šāhūz, kummīn aswad, habbat al-saudā, habb al-ka rakḥāh, and the Syr. šēbḥabbīnā (FJ. iii, 115, 122, 123). I bought the seeds of it in the Mosul bazaar, where it was called habb es-sāddā'. Ainsworth (T. ii, 134) says that N. Damascena was in flower at the end of May. The use of TIN-TIR-GIG-SAR in MT. is far more popular for internal trouble than cummin; in India the Nigella is used medicinally as powder, decoction, paste, and medicated oil; it is an aromatic digestive, stomachic,

1 There is a šumūz-Dir-ēr-ēr (šumkumūn šādī, i.e. "of the mountains") drunk alone in beer for liver, Scheil, RA. 1916, 38, 21, dup. KAR. 203, i, 33) probably not connected with this kammūn.
emmenagogic, lactagogue, anthelmintic (cf. SM. ii, 506); given just after delivery to stimulate uterus: applied with sweet oil in skin diseases; brayed in water it removes swellings of the hands and feet. The seeds scattered between woollen shawls are used against insects (BMM. 127). In SM it is common. Pomet (HD. 22) speaks of a sort of "black cummin" used by the Turks to clean teeth.

The seeds are, of course, black (BMM. 126), and are constantly used to sprinkle on bread in the East (cf. Pliny, NH. xx, 71, of "gith", black cummin), and Diosc. of melanbtov; cf. also IB. 1351, quoting Diosc. iii, 83, speaking of the black grains mixed with bread. I learnt in Mosul that, as elsewhere, they either put the grains on bread, or they mix fennel, Prunus mahaleb, and Rocella in the bread. It was obviously also the custom in Assyria (p. 57, 63).

The Syr. šbābāna has the appearance of the Assyrian šamzibānu in the same register as the cummin-group, given as equivalent to [lu]-ūb šā kima ḫi-šar "beans which are like ḫi-šar", which is a simile also used of ezizzu, a kind of Lathyrus. Nevertheless it is possible that šamzibānu has been included in this group, not so much on account of its meaning as its similarity to šamzibū: the description "beans like ḫi-šar" hardly fits Nigella.

3. šamKamun ʻibīni occurs in the VM. (Meek, RA. 1920, 181, i-ii, 5: Pl. 44, i-ii, 13: Mat. 88, i, 40):

\[ \text{šam} \text{ka-mun ʻibīni}^1 \mid \text{ina aban-ga-bi-i (v. e)} \]

(see JRAS. 1934, 776).

There would appear to be little doubt that this kamunu is different from the cumunu meaning "cummin". This other may be either kamunu or kanunu, meaning "lichen" (AH. 50: see ABL. No. 367, 8: TR. i, 2: Gadd, CT. xl, p. 6). Gwynn (PSBA. 1914, 248, 93) quotes šumma ina bit ameli wa bibbi karpat šabū ka-mu-nu innamar, etc., "If in a man's house in a pot of vinegar kamunu appears," i.e. the mother of vinegar, a gelatinous substance which collects when vinegar is kept in open vessels (EC. 27).

BRP. iv, 22, JRAS. 1924, 456, gives .. [šd] .. (?) išid ʻibīni usur ša-niš ka-mun ʻibīni: abang-ga-ū ".. [which] (on) the root of tamarisk comes forth, alternatively, kamunu of tamarisk; alum".

Now this use of lichen in alum at once suggests dyeing, the lichens frequently providing good dyes when mordanted with alum. "Lichens all grew on the barks of various trees" (Leighton, "On the Lichens of Ceylon," Trans. Linn. Soc. xxvii, 1811, 161), although it must be admitted that I cannot find any definite example given of a lichen on a tamarisk in the literature. I have gone into the subject more fully in JRAS., l.c.

\[^{1} \text{Kam-mun ʻib-ni -ne} \] occurs once in MT., AM. 85, 1, vi, 11.

1. šamHI-š-SAR, hāssu, Lactuca sativa L., Lettuce.
2. šamHI-š-DUš-SAR, gusau, muraru, "Bitter Lettuce."

\[^{1} \text{Mat. h} \text{a} \text{n} \text{a} \text{h} \text{a} \text{n} \text{a} \text{m} \text{a} \text{s} \text{n} \text{a} \text{r} \text{e} \text{b} \text{i} \text{n} \text{i} \text{n} \text{i} \text{n} \text{i} \text{n} (\text{?})} \]
VEGETABLES

1, 2. CT. xix, 50, K. 8727 and K. 13577, added to K. 8667 and S. 387 (Pl. 29): Pl. 33, S. 1316:

| Hi-1š-Šar | ḫa-ās-su |
| Hi-1š-Du[š]-Šar | gu-za-zu¹ |
| Hi-1š-Du[š]-Šar | mu-ra-ru |
| Hi-1š-Sš-Šar | mar-ru- . . .³ |
| Hi-1š-Sud4-Šar | ši-ḫu- . . . . |
| Hi-1š-Šar-[šar] | . . . . . . . |
| Hš-1š-Šar-[šar] | . . . . . . . |
| MUḫ-AS-AS-Šar | MUḫ-AS-AS-Šar |

Note that Hi-1š-Šar occurs MB. 16, in the same group as Ammi (see p. 69, where I have suggested that Hi-1š-Šar here may perhaps be a different plant from our present one, perhaps parsley, Syr. ḫṣḏā). Meissner rightly compared the Syr. ḥassʾṭḥā, Aram. ḥassā lettuce, ZA. 1891, 293. Zimmern, AF. 57, compared the Arab. murār and the Syr. ḫas mtrārē “bitter lettuce” with the Assyrian muraru (for the Arabic, cf. FJ.² i, 432). The latter must be distinct from muraruš šar, which is kept apart in the MB. register preceding Hi-1š-Šar in MB. Guzu, in its Sumerian form “the small lettuce”, is probably the cabbage-lettuce as contrasted with the upright Cos lettuce, and we should probably see in this a cognate to the Syr. gaddīḫā “bitter” (gaddē is absinthium, not representing any of the lettuces here).

With šamMUẖ-AS-AS-Šar, some kind of lettuce, compare šamMUẖ-AS-AS, erīštum (“(strong) smell”), the fenugreek (p. 65). If we are to see some reference to a smell in šamMUẖ-AS-AS-Šar (as a lettuce), we can identify it with Lactuca virosa L., a strong-smelling plant.⁶ Hi-1š-Šar is not common in MT.:

šamHi-1š-Šar-seed is bound on swellings with cummin-seed steeped in rose-water (AM. 75, 1, iv, 8 + 18, 5). According to LPG. 267, lettuce cures inflammations when cooked and applied as a poultice: Pliny (NH. xx. 26) says that lettuces are applied with salt to recent burns, and an application of them with salt and then wine arrests spreading ulcers.

šam Ḥassu is used in the description of the mythical being in Tod. 47, 14, as representing tuld[tušu] “his breasts (nipples)”, not, I think

¹ S. 1316 makes two lines of this and the next, but Pl. 50 only one.
² Pl. 50 has šam mar-ru-šar . . . , and it is uncertain whether it includes this line, but it probably does.
³ Perhaps restore from MB. 15, mar-ru-šar.
⁴ Clear on S. 1316, but in on Pl. 50.
⁵ S. 1316 has . . . kal (1) ẖi (?).
⁶ There may, of course, be some sort of connection between šamMUẖ-AS-AS-Šar and šamMUẖ-AS-Šar, arsenious acid, the white mass compared to a (sheep’s) brain, as displayed in the bazaars. The white, inspissated juice of the lettuce (lactuca virosa) leads us to suspect a similar product from fenugreek, its Arabic name hulba being parallel to the Latin lactuca, as derived from the words for milk. This may be the “ropy mucilaginous decoction” (PC. xxv, 212) obtained by boiling the seeds of the fenugreek, an ounce of which “renders a pint of water thick and slimy” (Encyclopedia of Botany, 389).
"seine Würmer" as Ebeling, as also ib. 32, 15, "Fisch sind seine Würmer" for tulatušu.

The lettuce (Lactuca saligna L.) is common in sub-alpine regions in Syria, Mesopotamia, Babylon, Persia, and Egypt: L. scariola L. in Syria and Mesopotamia (FJ. i, 424). L. sativa is cultivated everywhere in Syria and Palestine (FP., ii, 146).

J. 1. ʰašū, Thymus vulgaris L., Thyme.
2. ʰasānu, another species.
1. ʰašū occurs thus in MT.: Uncertain disease, alone (ʰa-še-e UŠ) in nidi (slime (?)), of fish, pour into anus, AM. 75, 1, iv, 11: ʰa-šē-e, alone in "milk of virgin kid", pour into anus, ib. 12. For maš-tab-ba, †, drink in oil and kurunnu-beer, AM. 64, 1, 35, dup. 16, 4, 4. Uncertain disease, †, drink, AM. 75, 1, iv, 13, 15. Pour ʰas-šu-u into uterus, †, KAR. 195, r. 22.

In MB. 38, written ʰaše-e šar, identified by Meissner (ZA. 1891, 294) with the Aram. ḫūṣ "thyme", included with zambaru šar, ib. 37, Syr. zabburā "thyme" (perhaps the same word as thymbrūnum, FP. ii, 105).

Thyme was seen at Leilan (Rich, Koord. i, 47). Several kinds are found in Palestine-Syria, FP. ii, 335.

2. ʰasānu has presumably the same relation to ʰašū that ʰasānu has to ʰasānu. It occurs thus in MT.: For ḫarāt (lungs) bray, eat alone without a meal, KAR. 203, iv, 22 (one of nine for the same, Pl. 48, Rm. 328, v, 2). Strangury, alone in oil and kurunnu-beer drink, KAR. 203, i, 29, dup. Pl. 27, K. 4430, 8. Uncertain disease, †, drink, AM. 51, 7, 5. Flatulence, etc., with fir-turpentine, a mašqitu (potion), AM. 41, 2, ii, 14. Quantity, 1 carat, AM. 91, 6, 3. In an apothecary’s (?) list, ADD. 1074, 10. 1 shekel with various other drugs, for the most part viqē or other gums, and turmeric, bututanū, and Acorus calamus. 20 qa of ḫa-šī-a-num is mentioned (above ḫu-šu, fix, 3rd Dyn. of Ur (TÜrk. 113, 1, 7). ʰasāna, †, is used for qīš libbi (some stomach trouble) in Kassite times, Waschow, MVAG. x, i, 35, l. 36.

Pliny, NH. xxi, 89 says that there are two kinds of thyme, both good for coughs, expectoration, and for stomach and bowels. Thyme, he says, is also given for epilepsy (cf. "Hand of Ghost"), asthma, and catamenia; a decoction brings away the dead foetus, and is given to males for flatulence and pains in the bladder. The small quantity of 1 carat in MT. is comparable to the "dose of one denarius of thyme to one sextarius of oxymel ", and Pliny’s warning to use it only in moderation.

It is probable that ʰašū and ʰasānu are closely allied in species (see above), and either of them may be any one of those in FP. ii, 335, and are parallel in relationship as are the Arab. za’tar and za’taran (see FJ. ii, 104: for za’tarēru see below). It is curious that we do not know the Sumerian for either.

K. 1. ʰasēru, the Arab. za’tar, Origanum Maru L., marjoram.
2. ʰēbaratū, Pegænum hæmarla L., rue.
3. ʰam Anameru, probably the same.
1-3. Pl. 33, Rm. 356, 9 ff.; restored from B.M. 108860, CT. xxxvii, 31, 37 ff.:  

<table>
<thead>
<tr>
<th>10. samzu-te-ru</th>
<th>samšib-bur-ra-tú</th>
</tr>
</thead>
<tbody>
<tr>
<td>samLUH-MAR-TU</td>
<td>sam</td>
</tr>
<tr>
<td>[samLUH-MAR-TU-KUR]-ra 1</td>
<td>ša-di-e</td>
</tr>
<tr>
<td>samši-mal KAM</td>
<td>samka-ma-ru</td>
</tr>
<tr>
<td>samši(?)-mat eqli 2</td>
<td>sama-na-š-me-ru</td>
</tr>
<tr>
<td></td>
<td>sam</td>
</tr>
<tr>
<td></td>
<td>sam</td>
</tr>
<tr>
<td></td>
<td>sam [,,]</td>
</tr>
<tr>
<td></td>
<td>qa-li-pu</td>
</tr>
<tr>
<td></td>
<td>šam la-ga-..</td>
</tr>
<tr>
<td></td>
<td>šamUR-P-I-P[I]...</td>
</tr>
</tbody>
</table>

(The order on VM., e.g. Pl. 42, K. 4140, B, is samšibburatu, šamšamunu, šammaneru.) Mal. 56, 7-9, 26, gives the equation samLUH-MAR-TUM-ŠAR : | šib-bur-ra-tu | si-in-par(tu)-ru.

First let us take two of these in MT., samšibburatu and samLUH-MAR-TU :

(1) samšibburatu: Uncertain use, prob. for anus, 10 shekels, †, AM. 42, 2, 6. Foul breath in mouth, uncertain use, AM. 26, 6, 9. For “heat of the day”, etc., trouble in the anus, 10 shekels, †, as enema, AM. 57, 7, 7 (practically dup. of KAR. 157, 18 ff., RA. 1929, 53). Strangury, †, drink, AM. 59, 1, 39.

(2) samLUH-MAR-TU: Sorcery, †, drink (Boissier, Rev. Sém. 1894, 135, 4, and 138, 20). samLUH is given as the name of a plant without equivalent, Scheil, RA. 1921, 5, r. 2.

samšibburatu (AH. 61) must be the Syr. šabbára, Peganum harmala L. “rue”. Its equivalent above, samšamateru, is obviously the Arab. za'tar, ša'tar “thyme” or Origanum Maru L. “marjoram” (AH. 270 : FF.2 ii, 334-5). Actually the Assyrian for “thyme” is settled as samšamburu and samšaššu (p. 74), and so, while accepting the philological connection as correct, we shall probably have to consider that either (a) za'teru is marjoram, and not a proper equivalent for “rue”, or (b) there is a difference in the respective values of the Assyrian and the Arabic words. That samšibburatu is rue is clear from its equivalence with samLUH-MAR-TU “Syrian washing plant”, i.e. on account of the lye obtained therefrom. I have seen the women at Carchemish burning the rue which they have

---

1 108860, samLUH-MAR-TU = šamditto ..., followed by a horizontal division line.
2 108860, qān, but Rm. 356 a.šā.
3 108860, ku (?) for na.
4 For these two lines 108860 has three:
5 samšamurun (?)-MA (?) | sam [,,]  
6 samšaššu L. šaššu | sam [,,]  
7 samšaššu ru ... inerī | sam [,,]  
8 For these two lines 108860 has three:
9 samšamurun (?)-MA (?) | sam [,,]  
10 samšaššu L. šaššu | sam [,,]  
11 samšaššu ru ... inerī | sam [,,]  
12 Rm. 356, a.šā, 108860, gān.
13 108860, ša llevara.
14 108860, ditto.
15 108860 has an additional line, kima šam ...
gathered from the great mound for this purpose (see my Pilgrim’s Scrip. 310, and for a picture of a woman in Anatolia actually burning rue, see Gelb, Inscr. from Alishar 26). The women of Mosul appear to have no such custom, although certainly the plant grows on the mound of Kouyunjik. FP.² i, 272 cites as its habitat Aleppo, Tripoli, Petra, parts of Sinai, etc. "rue of the mountains" must then be perhaps Ruta montana Clus. or R. latifolia (Salisb.), which grows on hillsides and in thickets (ib. 275).

The introduction of the solitary §amkamunu in l. 12 is doubtless because of its value §amsinat kam, i.e. eglî (D. 406, 3) or ereši (ib. 2), which may possibly be the same as the next line §amsi(?)-mat eglî (i.e. qâni ?) = §amanmeru. This latter is probably the same word as the Arab. ḥarmal "rue" (Peganum harmala L., FP.² i, 272, the Syrian rue, ib. 509), since it is juxtaposed to §amsibburratu (p. 75). Its seed is used in a poultice, †, AM. 15, 3, 5. The Syriac equivalent for ḥarmal is "rrm’ûlî, a close parallel to anaameru, so far as consonantal variation goes, just as the Assyry. almuttu (almintu) "widow" = Arab. arnîlak, and the Assyry. lamattu (lamintu) "ant" = the Heb. n’mâlîkh.

Cf. the group in VM., Pl. 42, K. 4140, B, 18–20: Pl. 44, K. 4152, 42–4: Mat. 88, i, 66–8:

| §amsib-burr-ru-tu | ina ḫa-ni-i²-du |
| §amska-mu³-nu | ina ɪd⁴-tiappu su-din⁵-ni | ⁶
| §amsa-na-me-ru | ina ùr⁸-nu-u | "Rue in ḫamûlu, cummin in a bat’s wing (feather), rue in mint." The connections are not clear, and the "bat’s wing" may be an alchemist’s synonym.

In omens §amanmeru (§amPI-na-mî-ru) is found between §amsa-as-su and §amsu-pa-lu (p. 268), TR. ii, 60, 4.

Besides the above forms we have §amsi-in-par(or tú)-ru, equivalent to siburratu (p. 75), which suggests the Syr. sin’drig (FJ. iii, 510), and, in MB., bissu šar (alongside zuḍu šar "hyssop", zambasu šar and hâsâ šar "thyme", and butnana šar (uncertain, see JRA. 1934, 781). With bîṣṣu šar Meissner rightly compared the Syr. baššâša "rue" (ZA. 1894, 294): another form is bûṣṣu (Gwynn, PSBA. 1914, 243).

The few uses in MT. coincide with that of rue in medicine. Pliny (NH. xx, 61) prescribes it for stomachic and urinary troubles, sorea, and shortness of breath. In India (BMM. 202 ff.) the juice is anthelmintic, the leaves diuretic and emmenagogue, and the plant is an abortifacient. The seeds of P. harmala are used for retention of urine (IMP. i, 246). P. 1029 gives rue as antispasmodic, stimulant, rubefacient, and as enema in colic in children. (On the eating of the seeds in Turkey, see FJ.² iii, 318). ³ Forma occurring are orjëla, orjëna, gâpfe 字, armola, orjëla (and Honein, quoted FP. ib. gives πἱγανον ἄγγιον = Syr. arnîlî = Syr. baššûša, Phen. χουρμ, FJ.³ iii, 509 ff.) ⁴ Mat. omits. ⁵ Mat. adds u. ⁶ Mat. ti. ⁷ Re-examined: [sic] Mat. ip. ⁸ Mat. n. ⁹ Mat. ur. ¹⁰ Mat. ti. ¹° Mat. rm. ¹¹ Mat. tii. ¹² Mat. n. ¹³ Mat. ti.
The additional equivalences on p. 75, n. 4, "drug for sheep," "drug for . . . ass," suggest a comparison with *NH*. xx, 51: "Of all the plants that are grown, rue is the one which is most generally employed for the maladies of cattle."

3. *ṣam* Nanīḫu, nanāḫu šar, perhaps a form of the above, or *Ammi Vīṣuṇa*, Anmi.

1-3. (A) K. 4586 (Pl. 31) joins K. 4216 (Pl. 19):

| *ṣam* Būمخ-SUN-DUL(?) . . |
| *ṣam* Būمخ-DA |
| Ṣam Būمخ-DA |
| *ṣam* šar-ši |
| *ṣam* qur-šu-Ḏ u šāmu |
| *ṣam* qur-šu-Ḏ u ta-ba-li |
| *ṣam* ṣu-Ḏ u-Ḏ u-Ḏ u |

(B) Pl. 32, Rm. 364:

| *ṣam* šā-mi ]Tuḇi |
| *ṣam* ša-mi ] tāk-zu-ti |
| *ṣam* ša-mi ] q(t) ] li-ša-la |
| *ṣam* ur-šu-Ḏ u šāmu |
| *ṣam* ša-mi ] arqū |
| *ṣam* ša-mi ] nāri |
| *ṣam* ša-mi ] a-ḏu-ša-la |
| *ṣam* qur-nu-Ḏ u šāmu |
| *ṣam* qur-nu-Ḏ u ta-ba-li |


In the identification of these plants, the previous difficulty whether the Syr. *naʾā* "mint" or *nināḏ* "Ammi" is the cognate representative of *ṣam* ninū has been removed by the evidence that *ṣam* ninū is actually the latter. The problem, however, is not confined to Assyrian: Bar Bahlul speaks of the interchange of the two Syriac words (*PJS*. ii, 76).1

1 On the interchange of other plants in later Semitic medicine, see *PJS*. ii, 77. Indeed, *PJS*. ii, 104 says that *ḥalā* (thyme) is "in Babylon für ḫornīṯ gesetzt".
From the following it will be seen that there is now no doubt about sa'urna being “mint”. The most satisfactory initial evidence comes, not from sa'urna, but from the other members of this group:

sa'urna = the Syr. qârætha, Origanum, Mentha Pulegium L., with a variety dhânaqâ “of the river”, Calamintha officinalis (Brock. 339). FJ. ii, 77 gives the Syr. qârætha as equivalent to the Arab. 'âlaq (basil), but the Mishnaic form as probably M. Pulegium L. (?), or calamint). The two kinds of sa'urna (“red” and “of the dry land”) are parallel to the three kinds of qârætha (dhâlaqâ “of the field”), dhûnârâ “of the mountain” (= Origanum), and dhânaqâ “of the river (= calamint”), ib. 78): here the colour “red” agrees with the pink of the corolla of Mentha Pulegium L. (FP. ii, 331), or of Calamintha officinalis Moench. (ib. 343). Both these occur in the Near East, but, having regard to the identification subsequently of the Assy. hamuk šar with Mentha Pulegium, Calamintha would be preferable.

With this evidence that we are dealing with words of the nature of mint, we may consider the equivalence of the Assyrian Qârâ with the Syr. qan'a and Arab. na'na’ mint as certain. But, more than this, there is good evidence that sa'urna is philologically the same as the Syr. nân'a : (a) Assyrian initial u representing final ' is found in uqnu, Syr. quna'd, cyaneus: Assyrian initial a representing in the second syllable in azupij'anu, Arab. za'jariin, saffron.

(b) Assy. r and n interchanging in the first syllable are found in arnu and anna “sin.”

(c) An instance in Assyrian of a prosthetic vowel before r and n is found in irnitlu, from ranânu “triumph”. It is, of course, unnecessary to mention the persistent varieties of interchange in words containing the letters l, m, n, r.

With this evidence that we are dealing with the Labiatae we can examine the uses in MT. Actually sa'urna does not occur in MT.; sa'urna is found thus:

(1) Simply: ext.: Eyes, bray, and blow in through a copper (bronze) tube with willow-nitre, AM. 9, 1, 40. Nose, †, ib. 2, 5. Ears, brayed with myrrh and inserted in wool, AM. 37, 1, r. 14. Mouth (hardly tooth), †, AM. 78, i, 13: cleanse mouth, †, AM. 28, 7, 12 + 78, 1, 15: foul breath, †, AM. 26, 6, 8. [Swollen muscles (?), cf. 1, 13], †, poultice, AM. 98, 3, 11. Swellings, †; probably, AM. 73, 1, i, 7: †, bind on, AM. 74, ii, 13.

Feet itching, bray alone and apply, AM. 74, 1, iii, 3. Anus-trouble with bruise (diksa), †, AM. 58, 2, 2, 8: anus-trouble, alone, KAR. 203, iv, 1 (cf. Pl. 30, S. 698), probably apply.

Int.: Too much saliva, †, without a meal [drink] in beer, AM. 31, 4, 12: for illatû (spittle), †, ib. 22. Temples, etc., 15 shekels, †, drink (see below, Enema), Kû, iii, ii, 21. Probably urinary, †, drink, AM. 60, 1, 7. Sorcery (?), †, drink, AM. 87, 5, 13, perhaps [sa'mur]-ni-e: sorcery, †, drink, AM. 89, 1, i, 7: against zi-tar-ru-da, †, drink, AM. 90, 1, i, ii, 16, 20. Hand of Ghost, †, drink, AM. 76, 1, 9, 13. For sores (um'sati), †, drink, AM. 17, 5, 4. For “fire of the stomach”†, [drink], AM. 40, 1, 47. Uncertain use, 2 shekels, AM. 90, 1, iii, 8: 10 shekels, AM. 42, 2, 6.

Enema: Heartburn (probably), †, AM. 43, 6, 5. “Constriction
of anus," †, AM. 56, 1, 5. Temples, 15 shekels, †, Kü. iii, ii, 25 (see above, int.).

(2) Seed: To bathe a sick “place”, †, AM. 75, 1, iv, 6.
(3) “Water”: for something like heartburn, †, drink, AM. 76, 1, 16.
(4) P.A (tops): On poultice in fat, †, probably lungs, AM. 54, 1, r. 7: “kişirte ĥarṭî (congestion of the lungs) or a cough,” in poultice, †, AM. 83, 1, r. 22.

The species șamûrnû šo šadê(e) “mountain mint” is an ingredient in a virility charm, to be drunk, Liebesz. 56, 1. According to Culpeper (Eng. Phys. 1814, 208) mint "stirreth up venery”.

Now the more modern medical uses of these Labiatæ are:

(a) Mentha Pulegium L., supposed to drive away fleas; formerly emmenagogue, antispasmodic, expectorant, carminative stimulant, and used for hysterical complaints (BMP. No. 291).
(b) M. viridis L. and M. piperita L. (the oil, leaves, and tops used of both); carminative (BMP. Nos. 202, 203), the oil of the latter being prescribed in P. 764 as an aromatic stomachic allaying nausea and colic, while ext. it is a local anaesthetic, relieving neuralgic pain. Cycl. Bot. i, 262 mentions the infusion of mint in warm water as stomachic: LPG. 298 says that mint is used for menses and in powder in poultice for tumours and ulcers, and its oil against indolent swellings of the gums, and for decayed teeth, and suggested as aphrodisiac. The various forms of mint are common in Syria (see FP. ii, 329); mint and peppermint both occur in Mesopotamia (at Leilan, Koord. i, 47).

șamûrnû will therefore be Mentha, either M. pulegium L. or M. piperita L. (cultivated), and șamqûrnû the Origanum vulgare L. (or similar), the marjoram.

We can go on to the curious form ʰamûk šâr, obviously not a native Assyrian word. I took this in AH. to be the Syr. ĥaï̇kî, the Arab. hâbaq (FJ. ii, 78). The equivalence for this is sometimes Ocimum basilicum L. (basil) (the Arabic ḥubugbug being O. gratissimum Forsk. (ib. 80), but also (ib. 65) hâbaq is Mentha pulegium L. or M. crispa L., and ḥubugbug, M. Sylvestris L.; indeed, Sir Richard Burton (Land of Midian ii, App. iv) gives hâbaq (in N. Midian) as M. lavandulacea W. (pounded and mixed with fresh dates “good for stomach”). Seeing that ʰamûk šâr is included in MB. among the mints, I cannot help feeling that we must see in it one of the Labiatæ, nearer to mint than basil, albeit basil (Ocimum basilicum L., Arabic rafîn in Basrah, and cf. FJ. ii, 65 f.) has a strong fragrance. Yet, on the other hand, we do not find the word ʰamûk šâr in the mint-lists of the Assyrians.

Nevertheless it would not seem unreasonable to consider ʰamûk šâr (possibly a foreign word) as a mint comparable to the Arab. hâbaq in its value M. Pulegium, while we may see in the Arab. ḥubugbug the Assyr. ḥambaquaqua 1 (similar to the Heb. Habakkuk, suggested by Meissner, ZA. 1891, 296, the latter being compared by Hommel to our ḥubugbug (Aufs. u. Abb. 27, quoted by Meissner, l.c.) (as Mentha Sylvestris L., FJ. ii, 65).

1[Quoted in the colophon of the series UURU-AN-NA: šam-ni-ia-kal as the equivalent of a name šam-ka-ra-am-bi: see introductory note to this book.]
samNanlu (with nanalu šar in MB.) would appear to be the Persian nanēnawah, accepted as Ammi (BM.M. 326; MI, i, 38).

samUrnu, with its equivalent qa-nu-u(?)... (“reed (?)...”) has no connection with qurnē apparently, other than a similarity of sound. MB. 9-12 gives the group urnu šar, nanalu šar, hambuk šar, qurnē šar in one register, showing that they are at all events of the same genus probably, if not of the same species.

M. samMā-eres-Mā-Lā (and other forms), Rosmarinus officinalis L., rosemary.

The plant-name is spelt in various ways:
samMā-PIN (= eres)-MA-LĀ-e, Kū. i, i, 20:
samMā-PIN (= eres)-MA-LĀ, AM. 5, 5, 14:
samMA-PIN-es-MĀ-li-e, CT. xxiii, 36, 50:
samMA-PIN (= eres)-MA-li-e, AM. 5, 1, 13:
samMā-eri-is-MĀ-RA, Kū. ii, ii, 54: cf. AM. 2, 1, r. 9 and 69, 2, 7.
samMā-PIN (= eres)-MĀ-RA, CT. xxiii, 31, 68.

This does not look like an original Sumerian word, and the variations suggest an artificial combination made up in Assyrian.

It is found in MT. thus:

(1) Simply: ext.: Decayed teeth, alone, apply, KAR. 203, i, 11 (dup. Pl. 23, K. 259, 12). Feet, †, bathe, AM. 69, 2, 7. Grey hair in youth, with the head of a black raven, etc., reduce, fray, mix in sweet oil, shave head [and apply], AM. 5, 1, 13 (cf. SM. ii, 691, “mix the fat of a black raven with moist qurtbhe” against white hair): for “dry” head, alone in rose-water bind, CT. xxiii, 31, 68. Weak beard, apply with cantharides, etc., in oil, CT. xxiii, 36, 50 ff.

(2) PA (tops): ext.: Head- or hair-trouble (probably weak hair, since cantharides is in the preceding receipt) \( \frac{3}{2} \) qa of PA of it, alone in rose-water, shave head and bind on for three days, CT. xxiii, 25, 31 + AM. 2, 1, r. 9. Itch or scab in head (kurura), shave †, bind on, AM. 5, 5, 14.

Int.: Stomach, drink alone in water, Kū. ii, ii, 54.

Quantity: 10 carats, bray with 10 carats of... , Kū. 1, 1, 20.

In AH. 197 I thought that it was Sahvia, sage, but changed my opinion to Rosmarinus, rosemary, in AJSL. 1937, 222. Rosemary possesses stimulant and carminative properties: its volatile oil is a powerful stimulant and carminative, and is used ext. with other substances to promote the growth of hair: it is an ingredient in some rubefacient liniments: it is given int. occasionally in hysteria and for nervous headaches, and a weak infusion of the fresh leaves is used by dyspeptics (BMP. No. 207: cf. for this latter Pliny, NH. xix, 62. LPG. 392 says that it contains more camphor than the other labiatae, which doubtless accounts for its Assyrian use in toothache. But botanically the two classes are sufficiently close to one another for us to be justified in uncertainty (cf. BB. xith ed., s.v. “Rosemary”).

1 This was read sī-nī-e šar incorrectly by Meissner.
The fact that the word has no proper Sumerian value is an indication that it is a foreign word, or that the plant came into MT. after Sumerian times. *Rosmarinus officinalis* L. is found in the Lebanon (“probably escaped from cultivation”, called in Arabic *haṣa al-bān*, *FP.* ii, 362). *FJ.* ii, 68 gives the Arabic as *klēl, klīl, haṣa lubān, haṣa al-bān*, etc., *BMP.* 207 says that it is a native of the Mediterranean district: *FP.* ii, 362 says that it is found in the Lebanon, “probably escaped from cultivation from Southern Europe.”

If *samMA-erēš-MÁ-RA* is really *Rosmarinus*, the similarity in sound between it and the Latin is extraordinary.

2. *samukūš-tī-gīl-la*, *tīgillā*, *Cucumis coccolythis* Schrad., coccolynth.

The interesting point about these cucumbers is that they are all defined by the sign *ukūš*, which is also used in the plant *samukūš-rīm* “poppy”, because of the similarity of the poppy-capsules to the small cucumber. If the sign *ukūš* is really “a strung instrument” (*D.* 550), it will represent the ovoid or hemispherical belly of the lute or guitar.

1. Omitting for the moment the *ukūš-rīm* (poppy) group (*p.* 223), we have:

   *Pl.* 21, K. 267 + *Pl.* 32, K. 4180, B, viii–vii, 5–16: restored from *Pl.* 18, K. 4354, iii–iv, 6–11:

   
   (A) 5. *ukūš-[šar]* 1
   *ukūš-du₃₃ [šar]₃*
   *šir-[GUD (?)]*
   *zīr [ukūš-šar]*

   10. *kaṭ* ....................
   *sam[ukūš]* ..................
   *samukūš-li-li-ga*
   *samukūš-li-li-ga*
   [ukūš-šir-gud-šar]

   15. .........................
   ...........................

   1. *qiṣṣu-ū* 2
   2. *ū-ba-nu* 4
   3. *šā-ru-ru* 4
   4. *šā-ru-ru* 4
   5. *zīr qiṣṣ-šē-e* 4
   6. *samukūš-tī-gīl-la* 5
   7. *mu-uṣ-ri-tā* 6
   8. *tam-šīl a-ru-ni*
   9. *samqiṣṣ-u* 7
   10. *iṣ*-ki al-pi 8
   11. *... ukūš-Adad* 4
   12. *... ukūšpt* 4

---

2 K. 4354 apparently *qiṣṣ-ṣa-ti* (re-exd.).
3 Restored from *Pl.* 4, ix, 36.
4 K. 4354 apparently omits line.
5 K. 4354 inserts after this line *sam[ukūš-tī-gīl-la]* 4.
6 This line may be l. 2 of K. 4354 (*sam[ukūš]* 4).
7 Var. K. 4354, š.
8 Var. K. 4354, š.
The sign UKUS is given without det. as equivalent to qiṣṣū (D. 550, 7), long compared to the Heb. qiṣṣā‘īm “cucumbers”. Qiṣṣē is used in Assyrian literature in comparisons: first, with what I think must be garnets, the small grain which is supposed to take its name from the seed of the pomegranate (granaticus, DACG. 163), the Assyrian comparing them to zer qiṣṣē “cucumber seeds”; and, secondly, in the well-known passage in Senn. 46, which I think may have been misunderstood: “With the bodies of their warriors I filled the plain like grass: sapsapate unakis-ma baltasun abut lcima bini qiṣṣē simani 6 unakis qatišun.” Luckenbill’s translation is not entirely satisfactory: “Their testicles I cut off and tore out their privates like the seeds of cucumbers of Siwan (June). Their hands I cut off.” Qati may well have the secondary meaning “member”, like the Heb. yūdāh in Is. lvii, 8 (cf. Eerdmans, ZA. 1894, 297, and see GE., Text., 81), in which case baltasun abut (without -ma) may be the first half of a circumstantial clause: “I destroyed their pudenda (their capacity for sexual pleasure), cutting off their members like bini qiṣṣē simani.” The latter is difficult, but bini cannot mean “seed”

1 K. 4325, gil.
2 K. 4325, l.a.
3 Apparently ma on text.
4 Or šu.
5 K. 4325, gil.
6 Probably ma on text.
(for which we already have ẓir in ẓir qisṣê) which would have no sense. The probability is that ẓinu here defines the actual fruit of the cucumber, for obvious reasons. If simani means the month of Siwan (May–June) it coincides well with the growth of the Cucumis sativus L. ("March–July", FP. 2, i, 480).

Ẓirî qisṣim and "5 qisṣê" are found in OB. letters (Kraus, MVAG. 1931, 50 and 99). Although cucumber seeds have a certain value in medicine (SM. ii, 204, 205: "chiefly us’d for Emulsions, and sometimes to express a cooling Oil from them for the Skin," HD. 22), they apparently do not occur in MT.

To continue with the other forms in this group:

The ukûš-pûl-is-Sâr "small cucumber" (ubanu "finger", "thumb") will be the short cucumber so plentiful in the Mesopotamian bazaars. Its synonym ((D), 7) banbillu, possibly panpîllu, can hardly be the Syr. puphêz, cucumis melo (the Greek word πετρων), Forskal (SP. 168) giving the Arabic as ẓinawîr.

ukûš-ṣîr-gûd, ẓîki alpî, "bull-testicles," represent the short, ovoid cucumber; cf. PC. viii, 1837, 212, describing the Indian Cucumis utilisissimus as having a perfect oval fruit, and, when ripe, variegated with deeper and lighter yellow, coinciding with the synonym for our word, qisṣê tukpîtu (BAG. 292 giving for tukpîtu "gesprenkelter Marmor (?)")

ṣâruru presumably in (A), 7, is simply a synonym for "cucumber", while in l. 8 it is apparently that cucumber known as "testicles of a bull". The Syr. šîrûdâ, germen recens, doubtless gave rise to the "Guckenschlüssel" of AF. 58. But our ṣâruru here is to be compared to the same word which means a "poppy-capsule", from the similarity of the two (p. 226).

ukûš damšillûm ṣâr as a "cucumber" or gourd is as difficult as "ma-γûnu damšillûm (p. 302). It can hardly mean "Similarity-gourd", comparing Theophrastus, EP. vii, iii, 5: "thus the bottle-gourds become like in shape to the vessel in which it has been placed." Moreover, we already have the bottle-gourd probably in the following.

ukûš qurdillum ṣâr = qurdîllu = namâšabu. Namâšabu is a vessel of some kind, thus giving us a clue to qurdîllu as the Syr. qurddîd, a pot or jar. This suggests Cucurbita lageneria (Lagenaria vulgaris Sèx.) for our plant, which acquires the form of a flask and forms good bottles (PC. viii, 1837, 212): it is a plant of South Asia (FJ. i, 542, quoting Keimer) and tropical Africa (MPB. ii, 1076). Na-an-ša-bu ẓâr occurs, however, in MB. r. 43, after "radish", and not with the cucumbers or gourds. The Pal.-Heb. is qisṣê habaqäh (i.e. "cucumber of the flask", FJ. 5, 542).


From the ordinary cucumber we can go on to the Colocynth, ukûš-li-li-gî-ṣâr and šâmukûš-tî-gîl-lâ (= -bu). šâmukûš-tî-gîl-lâ is not "melon", as I thought in AH. 40: CT. xvii, 19, 32, 36 (translated in Devils ii, 67, "wild cucumber" (?) shows this: "", (= šâmukûš-

[1] Or it may mean simply "in season.
[2] It can hardly be the Hibiscus esculentus L., the Arab, bâmîd, so common nowadays in the Near East, which was probably unknown to the Assyrians ("in Ostafrika heimisch, in vielen Tropenländern cultiviert", MPB. ii, 667). At the same time there is another word for the short, ovoid cucumber, šîki alpî.
DICTIONARY OF ASSYRIAN BOTANY

TI-GIL-LA)-a ša ina šeri eḫšši-šu aşu, i.e. the U. which springs up of its own accord in the desert, is hardly a correct description of a melon, which is a field-product, carefully cultivated. We must, however, distinguish ša-UKUS-TI-GIL-LA from ša-UKUS-TI-GI-LI-KUR-RA (p. 81, *Ecballium edaterium* Rich), there being some possibility of confusing the two.

There is every probability of the group (A), ll. 10-12 on p. 81, representing the same plant. First, there is the similar-sounding UKUS-TI-LUM-ŠAR, to be read tigilû, equivalent, therefore, to UKUS-TI-GI-LI-ŠAR (tigilû, (B) 6), and defined as qissat merawâ “bitter cucumber” (comparable to the Syr. *m-rāta dhhâdhâhrâ*, the Arab. *al-ḥanzal al-μswr*, SM. ii, 721), which at once suggests the Colocynth (“nauseous, acrid, and intensely bitter”, VK. 538, the gourds of ii Ki. iv, 39). That ša-UKUS-TI-GIL-LA is certainly the Colocynth is confirmed by the magical text CT. xvii, 19, 32, already quoted. This is for Headache, beginning with a long description of the Headache-demon who “roams in the desert” (l. 1), and then “slays” the patient (l. 15). Then Marduk as usual receives advice from his father: “Go, my son (Marduk), the (UKUS)tigilû, which springeth up of its own accord in the desert—when the sun entereth his dwelling, cover thy head with a cloth, and cover the (UKUS)tigilû, and surround it with flour, and in the morning before the sunrise root it out from its place, and take its root; take the hair of a virgin kid, and bind it on the head of the sick man, and bind it on the neck of the sick man, that the Headache which is in the body of the man may be removed, and may not return to its place, like a straw which the wind whirleth away” (Devils ii, 67).

Here the Headache is to be inveigled into the spherical Colocynth, which, it is hoped, will be mistaken for the head of the sick man. There are two possibilities here: the first, that there was a fanciful belief that the spherical Colocynth, with all its associations with evil, is the habitat of the Headache-demon by day, being vacated by its devilish occupant at night, when ghosts and demons usually prowl about the land, and that the magician will therefore find one of these gourds without a tenant; he must cover his head and the Colocynth with a cloth to guard against the attack of any wandering Headache demon returning to seek a resting-place, and must surround the Colocynth with a magic circle of flour with the same object. The empty gourd can then be used as a bait to attract the Headache-demon from the patient’s head. The second possibility is that the Colocynth was not the normal habitat of the Headache-demon, and the visit of the magician is made by night because he is less easily seen then. This is not such an attractive view as the former, as the association of the spherical gourd and its poisonous qualities have obvious connections with this particular demon.

But in any case this is definite proof that ša-UKUS-TI-GIL-LA is the Colocynth.

That the UKUS-LI-LI-GI-ŠAR is the same plant is apparent, however strange it may appear. The description of it on (A) 12 (p. 81) that it is tamšš aramu “like a ball” (AH. 40, from arû, Heb. *yārîth “to throw“) obviously fits the spherical colocynth which grows in the desert on a trailing vine, inviting the traveller to stoop and pluck it, merely for the pleasure of throwing it. This is borne out by (D) 9 (p. 82), where
85 VEGETABLES


Muṣrutu, presumably equivalent of סַמְמַיUKUS-LI-LI-GA rather than סַמְמַיUKUS-TI-GIL-LA (at all events, for one of these two) may mean “Egyptian”, as long ago suggested, indicating that the Colocynth was regarded as being a particular product from that country. It is the same word, doubtless, as occurs in the Phen. κοινακεταρ = σκύνος ἄγριος (= πιγκ Muṣrutu), quoted from Diosc. iv, 152, by Drake (Smith, DB. i, 372; note, however, that in Theophrastus, EP, Hort, ii, 476, the σκύνος ἄγριος is the Elaterium).

Lilkā (labīkkā) has apparently no Semitic cognate.

In medicine the part of the Colocynth used is the pulp, freed from seeds, a powerful hydragogue cathartic, prescribed in combination with other drugs to prevent griping (P. 433). Ext., it is said to be used in frictions for intestinal worms, and sometimes for ailments of the joints, gout, rheumatism, and sciatica (LPG. 161). In SM. ii, 95, 100, the pulp is used ext. for eyes (i.e. perhaps the PA and even “seed” of סַמְמַיUKUS-TI-GIL-LA, below). C. Colocynthis L. was found at el-Fatha (Herzfeld, Beih. 32); the Colocynth is very common in the Near Eastern deserts.

It occurs in MT. thus:

(a) סַמְמַיUKUS-TI-GIL-LA:

(1) Simply: Ext.: Feet and arms which cannot be straightened, †, poultice, AM. 68, 1, 21 (HUL-TI-GIL-...).

Int.: Retention of the anus (faeces), with 21 others including UKUS-RIM, opium, probably drink, AM. 40, 5, 17 (the opium being doubtless to counteract the griping) (UKUS-TI-GI-LI). Stone, in ... or wine drink, AM. 4, 4, 5, dup. in part of 30, 12 (., UKUS-TI-GI-IL (?)).

(2) PA (tops): Ext.: In same tablet as above, †, AM. 68, 1, 21, l. 7 (PA סַמְמַיUKUS-TI-GIL-LA).


From the Colocynth, סמUKUS-TI-GIL-LA and סמUKUS-TI-GI-LI-SAR we can proceed to the similar-sounding סמUKUS-TI-GI-LI-KUR-RA, which is given a section all to itself by the Assyrian botanist, showing that it is actually distinct from the סמUKUS-TI-GI-LI-SAR.

Pl. 22, K. 267, vi–v, 39:

<table>
<thead>
<tr>
<th>סמUKUS-TI-GI-LI-KUR-RA</th>
<th>הִי-יִלָּקֵיל-תָי שָדִי(i)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ŠÀ — KUR — RA</td>
<td>הִי-יִל-תָי שָדִי(i)</td>
</tr>
</tbody>
</table>

3 Piqquti šar, MB. 67, Meissner, Z.A. 1891, 297.
From (C) 31 ff. (p. 82) it would appear that this and the Colocynth were kept in close relation, and yet it is obvious that in the present grouping a wide distinction was made. Here in this particular syllabary (Pl. 22) it is inserted after the word for "caper", rather than after the ukūš-group, because of the appellation bartu.

In AH. 40 I suggested that this was the Ecballium elaterium Rich, or "squirtling cucumber". This, like the Colocynth, is a drastic purge, and its Assyrian title "gum of the pudenda of the mountains" exactly fits it. The plant is found in maritime Syria (FP. 2 i, 481: LB. 459, "found all over the country" and "looks like a young squash": at Nisibin, Von Opp. ii, 377). The part used is the sediment from the juice of the fruit (P. 480); the ripe fruit, about two inches long, roundish, green, and fleshy, ejects the seeds with a mucilaginous juice (PC. xv, 312). Obviously the bill batli šadī is this juice (gum), which at once allays any doubt that there might have been about this being the Elaterium, and not merely a "mountain" variety of the šamukūš-ti-gil-la. The title "gum of the pudenda of the mountains" is allied to the Arab. name for the Ecballium, qīthā al-kimār "donkey's cucumber", the lasciviousness of the donkey, the shape of the Ecballium, and the word "cucumber" combining to give us its meaning.

Its equivalent ša-kūr-ra, "stomach (heart) enemy" is paralleled by ašā akalēt, in reference to its purging property, and contrasted with ša-hul-la, "stomach (heart) comfort" of fennel (šammu šā šam-rum in Langdon, RA. 1916, 31), which is antispasmodic in infantile colic (P. 540), similar to aniseed (another umbellifer), corrective of scammers, HD. 8.

In MT. šam-ši-gi-lat šadī(i) occurs, among more than forty drugs, to be drunk for strangury, AM. 59, 1, 36.

_Melons_

It is a curious point that we know little about the Assyrian words for this very common fruit. Scheil, however, points out that the following text of the Ur period may contain the names for some of these (RA. 1921, 56, 22 ff.).

UKUŠ-A DUG . . . .
UKUŠ-A . . . . .
UKUŠ-A . . . . .
UKUŠ-A AN- . . . .
UKUŠ-A . . . . .
IV

VICÆ (VETCHES) AND CEREALS
VICLÆ (VETCHES) AND CEREALS

A. 1. ṣamuruṣu, a vetch.
2. ṣamamuṣu, Phaseolus maximus, vetches.
3. ṣamaziyu, Lathyrus.
4. ṣamandahṣum, Ervum lens L. (?), lentils (?).

(A) VAT. 9000: CT. xxxvii, 29, 108860, ii, 25–32:

| ṣamha-ti Türk | ṣamuruṣu |
| ṣamuruṣu | ṣamamuṣu |
| ṣamatu-zi [u] | ṣamkakku-ṣu m[ar-ru] |
| ṣamku-ni-[bu] | ṣamala-mar |
| ṣamHAL-MAŠ-[DA] | ṣamkakku-[u] (?³) |
| ṣamKAK-KU-[UŠ] | ṣamala-ku-ṭ |
| ṣam | ṣamaṭa- |

(B) PI. 24, K. 4412, r. 20:

| ṣamHAL-MAŠ-[DA] | ṣamala-ar sa-bi-[bi] |
| ṣamKAK-KU-[UŠ] | ṣamkakku-[u] (?³) |
| ṣam | ṣamaṭa- |

(C) Mat. 86, vii–ix:

19. ŠE-HUŠ-AŠAR a | iz-зу lap-ṭi | zi-im-zi-me
20. ŠE-HUŠ-AŠAR | ū-ru-ti (!) | šu-un³
21. ŠE-RIM-SAR | a-muṣ-šu | ku-ni-ib-h[u]
22. ŠE-SIŠ-SAR | a-za-mu | ṣa-mi[n (?)]-
23. ŠE-DU13-SAR | an-daḫ-šu | an-daḫ-[ṣum]
24. a-muṣ-šu SAR | e-zi-зу | a-ru-šu

1 Actually saḥ.
2 108860, for this line ṣamditto | ṣam |
3 108860 omits line, and has for the remainder:

| ṣamla-bi-ṣi | ṣamala-ku-[u] |
| ṣamku-ni-ṣi | ṣamal[a]-uš |
| ṣamal[a]-uš | ṣamala-ku-[u] |
| ṣamKAK-UŠ-TUR-[A] | ṣamala-ku-ṭ |

4 [uš] from 108860 in n. 3, and p. 92.
5 [u] from p. 95, but not certain. 1 have taken it as a parallel to ša-ṭ support, kak-ku-u.
6 [u] from p. 95, but not certain. 1 have taken it as a parallel to ša-ṭ support, kak-ku-u.

But cf. CT. xxxv, 3, l. 15 (duplic. Yale Syllab.), and the "stone" discussed in DAGG, 180 f.
7 Cf. PI. 4, ix, 32, ŠE-HUŠ-AŠAR = . . . .

89
(D) Pl. 29, S. 387:

... ...
... ...
... ...
... ...
... ...
5. ...
... ...
... ...
... ...
... ...
10. ...

(followed by the nuhurstu-group).

(E) Pl. 25, K. 4398, r. 3–14: Pl. 24, K. 4412, r. 10–19:

<table>
<thead>
<tr>
<th>Samku-ni-bu</th>
<th>Samku-ni-ib-ju</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samku-ni-ib-ju</td>
<td>Samku-ni-bu</td>
</tr>
<tr>
<td>5. Sam-sa-ri</td>
<td>Sam-sa-ri</td>
</tr>
<tr>
<td>2 Sam-a-us-se</td>
<td>Sam-a-us-se</td>
</tr>
</tbody>
</table>

| Sam-sa-ri | Sam-sa-ri |
| 4 Sam-sa-ri | Sam-sa-ri |
| 10. Sam-sa-ri | Sam-sa-ri |
| 7 Sam-a-us-se | Sam-a-us-se |
| 7 Sam-a-us-se | Sam-a-us-se |
| SE-KUR-SAR | SE-KUR-SAR |

1 From Pl. 31, K. 4581, r., b, (1) ...
2 Or perhaps same. u-a-se.
3 K. 4412, same. e-zi-zu.
4 K. 4412 omits this line.
5 K. 4412 adds šar.
6 K. 4412, e-zi-šu. . .
7 Or perhaps same. u-a-se.
These groups are of the Viciæ and related plants, differing in some measure from the following section of cereals.

1-4. *samAtirti eqli* (probably the same as the form *samAtirti eqli*, with a curiously scientific use of ḫ to represent '). This "ātirti of the field" must be the Arabic 'ātopr, 'ātr, Lathyrus, as Holma (KB. 59) saw, which occurs as *L. hirsutus* L. at Qala'ah Sherghat (Hertzfeld, Beih. ii, 33). It is true that in another connection (p. 149) *samAtirtu* has the value of *Euphorbia*, but here, of course, it must mean one of the vetches.

*samArusu*, equivalent to the above, is amplified by the word *marru" bitter" when equated with *samEzizu* (ezisū elsewhere), and is defined as "a bean-like *šl-SAR*" (a comparison also made of *samzibibanu*). It may perhaps be referred to the root *erēšu* "to wish", *erēsu* "bridegroom", Arab. 'ārūs (from its clinging capacity?; the Arab. 'ārēs is a dialect word for a vine, *FP.* 2, i, 283), Beih. ii, 32, giving *erēsh* for convolvulus. ḫasē' al-'arūs is the milk-vetch (*FP.* 2, i, 373).

*samEzizu* (ezisū) must be the Syr. 'asūga, Lathyrus (*FJ.* ii, 438). Note the occurrence quoted from *VM.* in (4) below. (Cf. the Arab. s'es'a (according to Miss Baldensperger, *FCH.* 46), *Lathyrus cicera* L.)

*samAmusu*, hardly the Arab. himmas,1 Syr. ḫemsē "chickpeas", owing to the difficulty about the sibilant; more probably it is māš, *Phaseolus maximus* in Assyria (A. 35), the change of position of a being paralleled by the a in *azupiranu*, Arab. za'farān. Note the occurrences

1 K. 4412 apparently put [sam-]*a-[ru-]*bh | ... here.
2 K. 4412 omits this line.
3 K. 4412, ḫu.
4 K. 4412 changes places with next line.
5 Re-examined [sic].
6 Or perhaps mē ḫu-ču.
7 Not in K. 4345 as extant; it is possible (but not likely) that the line was included in Cols. viii–vii (broken away).
8 Although for himmas cf. ḫe ... *num-yum* | ḫu-um-mu-šu, Scheil, Z.A. 1893, 201, r. 3.
“Vetches in the blood of a wounded man, chickpeas in the blood of a dead man.” Unintelligible.

§am(i~)a-mu-se ina dám hab-li
§am(i~)e-zí-zu ina dám me-e-ti

§amKunib, perhaps connected with the Arab. kanib (“like duhn (millet) and called tahaf”), Landberg, Arabica v, 213 (cf. Geitr. 37). §amKunib(p)šu might conceivably be the Syr. t'lappha, lentils, if a change from k to t be allowed as in Wright's Comp. Gram. 51, where mod. Syr. is given as pronouncing k as ty (“dog”): perhaps, cf. ṭṛṭqlā = oraticula. §amKunib(p)ši šār occurs in the vetch-group, MB. 5–8, along with andahšum šār, šašnibi šār, and zimmimnu šār, the latter word occurring as equivalent to še-huš-a-šār and isso lahti (p. 89).

§amZir labiše “seed of labiše” must surely be the Arab. bīsillah (bīzella, bishlah, FP. i, 434, 435), peas. The metathesis of l is not uncommon in words containing liquids.

§amAušu (I am inclined now to read it thus, and not mé usšu or mé usšu, since the Sumerian is §amŠEKURŠAR, which has nothing to do with soup), possibly the Arab. addas (“lentils”) (cf. Wright’s Comp. Gram. 51, where mod. Syr. is given as pronouncing k as ty (“dog”)): perhaps, cf. ṭṛṭqlā = oraticula. §amAušu is merely a form of amu(s)su. At the same time a-šaḫ (“soup of pig”) occurs (KVH. iv, 51, 5).

For §amJanušu and §amEnanu I can suggest nothing.

The §amKAK-(KU)-UŠ, kakku, group is comparable to that occurring on p. 95 among the cereals, §amŠEGU (§amkakku), §amŠEGU-DU3 (§amkakku), and §amkakku (§amAB(EŠ)-BA(?)) and clearly allied to the vetches. Cf. VM. Pl. 10, r. 9: Mat. 88, ii, 30):

§amKAK-KU-US-GAL | ina kur-mai ineri

i.e. it is an ass-fodder. Meek, BA. x, 1913, 42, K. 3251, gives a hymn in which kun-ši hal-bu-ri kak-[i-c] (l. 9) are mentioned in relation to ʿNisaba, and alkali, salt, sulphur, . . ., azupiri, and cress (l. 12, 13) in relation to ʿNE-DAR.

§amHAL-LA MAŠ-DĀ is represented by §amhallar šabi[ti], “gazelle dung.” HAL-LA is well known to mean “dung”, but §amhallar appears to be unknown elsewhere. Doubtless the seeds are compared to the little spherical dung of the gazelle.

§amAndahšum is a difficult word. In AH. 130, partly because of its presence near karšu (p. 90), which has one meaning “cherry” (p. 307), partly because of its connection with (BI)ṭik[hi]-t-ti, supurgil “quinces”, sirdi “almonds”, and šamri “jujubes” in ADD., and partly on account
of the possible similarity of the word with the Arab. ḯinjāṣ (pears, plums), I thought it might mean "plum". But "plums" are angāṣ in ABL. 813 (along with supurgillum "quince"; so that either we must read our word andahšum as angabšum, accepting this as equal to angāṣ "plums" (that is, when we find it in such texts as are in ADD.), or we must relinquish the meaning "plums".

There is a curious parallel in NH. xxii, 49 to this grouping of andahšē, quinces, etc., where for certain diseases lentils are pounded either by themselves, or with quinces, pears, myrtle, wild endive, black beet, or plantago.

Next the vocabulary on p. 90 (Pl. 29) contained andahšum in one group, followed by the nuḫurtu-group, Asa fatīda, and, since the andahšum-group contained karsū, it was not unreasonable to see in this the Syr. karsā, Laserpitium siler. Indeed, even MT. was confirmatory of this, 闼m-andahšē being used in two prescriptions actually along with Asa fatīda (AM. 81, 3, 1, dup. 81, 2, 4, and AM. 83, 1, r. 19). Curiously enough, the Persian for Asa fatīda is not dissimilar (unguzah = hingiseh), FJ. iii, 452 ff.: aṅgusta gāndah, aṅgudāna, i.e. hīṅga, which appears in various Indian forms, BM. 336.

Yet it is certain that the occurrence of 闼m-andahšum in the lists of vetches compels us to see one of this class of plants in this word. This is also evident from a ritual containing coriander, cummin, nigella, andahšum, and ezīzu (Lathyrus), KAR. 171, 4 ff., 178, r. vi, 13; Ebeling, MV. v. 3, 1931, 26). In omen-texts, too, the order of such plants runs )?$-CLI$-ŠAR, ezīzu ŠAR, andahšum ŠAR, 玺kamumu ŠAR (Virolleaud, Bab. 1910, 291, 43-6, DA. 77, 43-6). The word is curiously spelt 闼m-andahšum (ZA. 1923, 34), and as in-dah-šu-um as far back as the 3rd Dyn. of Ur (ITT. 7059), 20 mana (about 20 lb.) of it being mentioned.

It is used thus in MT.:

To rub on a sick "place" alone, Scheil, RA. 1918, 75, 4. To insert in uterus of pregnant woman, † (or after childbirth), KAR. 195, 10. For cough, with bloodspitting, drink mustard, Asa fatīda, etc., in kurunnu-beer, and then eat andahšē with honey and hēmetu-ghee, AM. 83, 1, r. 19: for cough, eat 闼m-andahšē with Asa fatīda, AM. 81, 3, 1, dup. 81, 2, 4: for cough (when no improvement is obvious) KAR. 203, iv−vi, 33 (alone in honey, oil, and kurunnu-beer, let his tongue take without a meal, let him drink). For sīki alone, bray, drink in kurunnu-beer, ib. 41.

What is most interesting is that there was a festival celebrated about it by the Hittites in the spring (I owe this to Mr. Oliver Gurney): KUB. x, 198, 18, i, 2: xx, 42, 1, 9: "he (?) puts andahšum in the house of the queen," and "there is a big assembly in the house of the queen": ib. x, 94: 2−3: "when the time of the andahšum comes, they will offer the andahšum to the gods," ib. xviii, 12, i, 3–4. It follows bulug-an and ti-ta-ti (Asa fatīda) in a list of vegetables, ib. vii, 1, i, 21.

Asa fatīda may well have been used as an addition to lentil pottage, or however it was cooked: Pliny (NH. xxii, 49) says of the Laser that

1 A form andašē (1 shekel) occurs along with tidtu (1 shekel) and honey (San Niccolò-Ungnad, Neubabyl. Rechtsurk. No. 858, VAT. 2042, late Bab.).

[2 See RA. XL, 109 f.]
“taken with food, it is very refreshing for patients just recovering from an illness”; “employed by itself, it warms and revives persons benumbed with cold.” *Asa fetida* is “very serviceable in imperfect digestion . . . the Romans employed it along with their food, as the Persians still do” (PC. ii, 493). As lentils according to *NH. xxii, 70, “inflate the stomach,” the use of *Asa fetida* is obvious. On the use of it in food, see *FJ*. iii, 453.

B. LU-UB-SAR, lubbu (luppua), *Phaseolus vulgaris* L., bean.

Gadd, *CT*. xxxv, 4, 54:

\[
\text{ub} \mid \text{UB} \mid \text{ša LU-UB lu-ub-bu}
\]

(Cf. Clay, *YOS*. i, *pl*. xliv, 151.) Cf. also *CT*. xi, 35, 76–4–13, i, 8:

\[
\text{v. SAI. 8214:}
\]

\[
\text{[LU-UB-ŠAR]} \mid \text{ú-du-tu-kul-ni-si-gu-u} \mid ?
\]

In *KAR*. 203, r. iv–vi, 39, \(\text{šam}_{\text{LU-UB-ŠAR}} = \text{šam}_{\text{zu}}\) (or \(\text{er}=\text{lu-ŠAR}\ = \text{ša} \text{ usna} \text{šú maršá} \text{NU ikkal} \) (“one whose ears are sick shall not eat”).

In *AH*. 196 I suggested that this word represents the Arab. *lubiyá*, lubā, Dolichos lubia Forsk. (*FJ*. ii, 508: *Lane, Dict. 2677*, *faba*, not the *lubiyá* ifranjyah, haricot, which comes from South America, but the *Vigna savi* D., *FJ.* ii, 522). We find that it is a vetch: *Pl*. 25, r. viii–vi, 8, *LU-UB ša kima HŠ-ŠAR = e-zi-iš-šū*, similar to the equation [\(\text{LU-UB-ŠAR kima HŠ-ŠAR} = \text{šam}_{\text{zi-bi-ba-nu}}\), *Pl*. 19, i–ii, 13 (\(\text{šam}_{\text{zi-bi-ba-nu}}\) occurring, *p*. 70, as *Nigella*). *HŠ-ŠAR* is unexplained in the syllabaries. Cf. also *LU-UB-ŠAR ďr-ma-nim MUN-KU-PAD šér kaliti ka—... “beans, apricots, borax (1), kidney meat . . .”), for a man bewitched, which suggests a haricot (*AM*. 85, 3, 7), as is often cooked in the East, with raisins, etc. Elsewhere in *MT*. (*AM*. 80, 1, 8): “When a man is sick of a cough, thou shalt cook green arnoglossum (alone) *kima LU-UB-ŠAR* (like beans),” showing obviously that these beans were a well-known food. *Kū*. i, iii, 57, gives . . . *na-pi-ub-ma ki-ma lu-up-pi . . .*

Bean-flour, *zid lub-ba* (*AM*. 74, 1, i, 35), to be sprinkled with oil, is to be put on an affected place: Pliny (*NH*. xxii, 69) says that bean-meal boiled in vinegar ripens tumours and breaks them, and heals contusions and burns.

*Zīr LU-UB-ŠAR* occurs in a vocabulary of the 3rd Dynasty of Ur (Scheil, *RA*. 1921, 60, vi, 31), as well as a vessel for them (*tb*. 57, 11). Indeed, it is possible that “40 ėt (talents) of *LU-ŠAR*” (an eatable vegetable) is to be assigned here (Thureau-Dangin, *ISA*. 123, 21, Gudea; and cf. *RTC*. No. 58, iii, 11, etc., *šamLU-ŠAR*).

In omens: “If a river *kima LU-UB-ŠAR*, there will be aḫhazu(-demon) in the land” (Gadd, *CT*. xxxix, *pl*. 14, 8). The preceding omen describes the possibility of the river being *šig₇-sig₇* “bright yellow”, so that the comparison with beans probably means that it is of a dark green.
C. The šE, (corn)-group.

(A) Pl. 31, K. 8846, r. 1-9, dup. Pl. 32, K. 4588, iii 1: Smith, CT. xxxvi, No. 108860, 29, 35: VAT. 9000: (cf. Scheil, RA. 1921, 56, "Epoch of Ur"):

| (a) | šamšE - BAR | šamštu-ta-tu |
| (b) | šamšE - GIG | šamšu-ta-tu |
| (c) | šamšE6-BA-RA | šamšutu |
| (d) | šamšE6-šÁ-HAR-RA | šamššEšš-nu |
| (e) | šamšE6 - GÁ | šamškak-ku-u |
| (f) | šamšE6-GÁ - DU 13 | šamš13-
| (g) | šamšE6-kak - ku - u | šamš13-
| (h) | šE-GÁ-šLM-BA-RA | šamš13-
| (i) | šamšE6-šLM-BA-RA | šamš13-
| (j) | šamšE6-šLM-BA-RA | šamš13-
| (k) | šamšE6-šLM-BA-RA | šamš13-

1. Perhaps here, as the beginning, Pl. 38, K. 424, B, i-ii, 14-15:

| šamšE6 | šamšE6 |

Cf. also CT. xix, 39, K. 9964, i-7:

| šamšE6 | šamšE6 |

2. Horizontal line on 108860 and VAT. 9000.

3. Line omitted on VAT. 9000.

4. VAT. 9000 omits.

5. VAT. 9000 inserts l. (h) here, reading:

| šamšE6-GÁ | šamšE6-GÁ |

K. 4588 has:

| šamšE6-GÁ | šamšE6-GÁ |

No. 108860 has:

| šamšE6-ba-?ra | šamšE6-ba-?ra |

8. VAT. 9000 and K. 4588 omit.

7. VAT. 9000 šši (?) |

9. VAT. 9000 adds:


10. VAT. 9000 adds:


K. 4588 presumably reverses this:


VAT. 9000 omits the line.

11. See page 96.
(B) Pinches, JRAS. 1905, 830, ll. 9–16:

| e-zii-nu | i3-tii | 5-3-na-an |
| hi-en-bur | se-rú | 5ab-bu-ru |
| kid-la-an | sE-lugal | kid-la-nu |
| sE-sag | sE-lugal | ia-a-ra-ah-hu |
| sE-es-ru-ub | sE-gud | ar-su-up-pu |
| sE-mu-us | sE-sis | sii-gu-su |
| sE-za-a| sE-bil | luu-tum |
| sE-sá-al | sE-šal | di-il-tum |

(C) Scheil, RA. 1921, 56 (text 59) ("Epoch of Ur"): v, 1–16, has (1) [sE-GU]-GAL, (2) [sE-GU]-DU, (3) [sE]-IN-NU-

Ainsworth (A. 34) begins his list of Mesopotamian food-plants with wheat (houta), barley (shaér), lentils (Erwum lens, addes), chickpeas (Cicer arietanum, hímmes), beans (Vicia faba, tül), chickling vetch (Lathyris sativus, jìllan), vetch (Vicia missoliana, kishné), beans (Phaseolus maximus, naásh), and millet (Holchus sorghum, dúra). Some of these we can identify in the foregoing lists, and others in the section on Vetches (p. 89 f.) (one at least of the Arabic words as he gives them looks like a misprint). FP. 2 i, 416–436, gives various vetches, etc., in Syria and Palestine as Cicer arietanum L. (himmas), Vicia faba L., F. vulgaris Mill. (fäl), V. palavtina Boiss. (karsanah-barrî), V. Eruâa (L.) Willd. (karsanah), Lens esculenta (‘adás), L. sativus L. (julbân), Pisum (bisîlah), Phaseolus vulgaris L. (lûbiyá ifranjîyah), fasûlía), P. arvense Post (mâsh), Vigna (lûbiyá).

(37) Restoration uncertain.
Viciae with corn and barley in their lists, and yet elsewhere there is a separate section for Oicor, chickpeas, and Lens (lentils). It will be best to discuss both groups together.

(a) The Corn-lists (including some of the Vetches).

1. še, either "corn", i.e. the simple grain used as a measure (OTC. 128: Iraq 1938, 26), or as the equivalent of še'u (D. 367, 14), and in general as a determinative for corn of all kinds (see Getr. 207).

Langdon (JRAS. 1936, 87) published a tablet mentioning še, zîz, and qîg, which he made barley, emmer, and wheat respectively. On kunašu as emmer see Getr. refs. on p. 204, and AF. 107. On "Aš(āš)-na-ān = še-tir see Deimel, Panth. 239, and the literature in MA. 116: ši-kaš-na-ān, King, Magic, No. 2, 29.

ZID-šē "flour of corn", corn-flour, Getr. 117: used in a fumigation in MT. alone, AM. 101, 3, 10 (ZID-šēn in a parallel passage, ib. l. 16): for lungs, in a fumigation with pine-turpentine (with a thorn-fire, AM. 54, 1, 8. Cf. also AM. 65, 5, 8, to mix in wine for head, and note the peculiar "½ qa zid-šē domgī" (sweet corn-flour), AM. 77, 5, 6 (uncertain use). There is a special mill for zid-šē, i.e. in the time of the 1st Dyn. of Babylon, ābaḫar zid-šē, CT. viii, 34, 91-5-9, 2504, 10.

Include here:—

(a) ZID- QU, qimu ḫašlu ("zerstossenes Mehl", "feiner zerstossenes Mehl," Getr. 117). It is the pounded wheat which the Arabs use. LB. 34 speaks of an Arab who "is braying wheat with a pestle in a mortar to make kibby, the national dish of the Arabs. . . . Every family has one or more of these large stone mortars . . . our boy is busy braying fish . . . and we shall therefore have kibbet samak, which many people are extremely fond of. It is more commonly made of mutton". Although the Heb. qemah is applied to flour of wheat, barley, and parched corn (Briggs-Driver, Dict. 887), the vulgar Arabic qamh means wheat (ib.). The pounded corn (zid-QU) is, of course, not the same as the properly ground corn (and therefore my translation "fine-ground flour" is probably to be emended to "pounded flour"): the two would appear to be used together (as zid-QU and zid-GIG) in the same prescription (see below).

ZID-QU is common in MT.:

Templeš, †, bind, CT. xxiii, 41, 3 (cf. 4, poultice). Eyes, †, mix as medium [ext.], AM. 9, 1, 9. Ears, †, as medium, insert, AM. 36, 1, 6. Stomach, mix liquorice with zid-QU, uncertain use in rose-water, AM. 39, 1, 1. Breast, †, uncertain use, AM. 51, 12, 7. Cough, †, uncertain use, AM. 80, 1, 20. Prob. anus, with salt, "reduce," bray, and apply, KAR. 191, r. iv, 7. Blains (ṣaggati) with rIM (v. ZID) šE + BĀR + šE, ZID-ZIG, etc., poultice, AM. 32, 5, 10, dup. 93, 2, r. 3. Swelling, †, as medium, poultice or bind on, AM. 73, 1, 19-23, 37: 74, 1, 12. Blow (mišitib), †, AM. 79, 1, 14. Poultice with ḫalluru, kakkū, etc., AM. 84, 4, r. iv, 5.

Quantities: 10 carats, †, bind on, CT. xxiii, 42, 8: ½ qa, AM. 6, 3, 9.

(b) ZID ḫonas "corn-flour", for kurara (itch) in head, bray and rub (takar) alone, AM. 5, 5, 5. Cf. AM. 65, 5, 2 (and possibly 5, 5, 7 and 8, 4, 1).

Presumably this does not refer to ḫE-NA-A (Vitex), with which the patient is to be bathed immediately preceding the fumigation.
(c) ZID A-TER (= ṣasqu), with dates in a ritual, AM. 44, 4, 9 ("Anfeuchtungsmehl", Geitr. 118; see Thureau-Dangin, RA. 1924, 136, n. 8). Common in rituals.

(d) ŠE-SA-A (qalū), Heb. qāli (see Zimmern, ZDMG. 1904 (lviii), 951: Geitr. 98). Confirmed from AM. 36, 1, 7 (cf. 38, 4, ii, 3) kasi šar ki-ma še-sa-a ta-gal-lu "roses like qalū thou shalt parch". Equally cf. CT. xxiii, 10, 16 ff.: "as a dead man hath not passed the gate of life, as an untimely birth hath not sucked the breast of its mother, kima zir še-sa-a la ša-nu-ši še-bū, as the seed of qalā' hath not produced a shoot." It is the well-known "parched corn" of Ruth ii, 14: "and she (Ruth) sat beside the reapers: and he (Boaz) reached her parched corn and she did eat." It is described in Robinson’s Researches ii, 350: "In the season of harvest, the grains of wheat, not yet fully dry and hard, are roasted in a pan, or on an iron plate, and constitute a very palatable article of food; this is eaten along with bread, or instead of it." In Palestine (The Bible in Palestine quoted in Scripture Manners, 138, 7, 8) "they took a bundle [of corn] green from the field, and held it over a blazing wood-fire, till it was quite black. They then rubbed it out with their hands into a dish, and ate it warm, and frequently they had little else for a meal—at least in the early part of the day... The use of parched corn is now so common, that in summer it is regularly sold in the markets."

It is common in MT.:

(1) Simply: Temples, 10 shekels of cress and 10 of še-sa-a steep in rose-water, bind on, AM. 20, 1, 19. Swelling on heel, †, bray, poultice, AM. 73, 1, 19. For śibir mišitti (some kind of blow), †, in beer... [bind], AM. 82, 2, 9. In ritual, mention of pouring water on še-sa-a, KAR. 21, r. 14.

(2) ZID, flour: Ext.: Temples, 10 shekels, †, steep in rose-water and bind on, AM. 20, 1, 20, no quantity given, †, ditto, CT. xxiii, 43, 25, 27. Eyes, †, steep in beer, bind on, AM. 14, 1, 7: 16, 1, 1: as medium for mixing, AM. 13, 1, 5. Scabies on head (or sim.), † [prob. bind on], AM. 1, 2, 19. Blow (mišitti), as medium for mixing, poultice, AM. 79, 1, 25. Int.: Female ailment (šal-la ra-ah, flooding or slipping of the uterus), drink with šam·maš-takal (soapwort) in oil and beer, AM. 67, 1, iv, 5, dup. KAR. 196, r. 1, 12. Enema, †, AM. 94, 2, 1, 8.

In ritual, alone in water and beer beat up (ra-š), and pour on roof, KAR. 184, r. 7. ZID-ŠE-SA occurs in time of Shulgi (Nakahara, Sum. Tablets, p. 5, ll. 2, 8: cf. TÜrk. 23).

(For ŠE-SA in composition with other grain see D. 367, 83).

(e) IN-RI, šlēm, straw, †, AM. 34, 6, 1 (probl. ext. or as fumigation).

2. "šumŠu", according to Geitr. 89, is an Assyrian word for emmer, mentioned frequently alongside sesame and kullani in Assyria (in ADD, see Geitr., l.c.). In regard to še-gig-(ba) and še-bar, he points out (ib. 8) that še-gig-ba is represented by the Aram. ḫintin "wheat" (Delaporte,
Epig. Aram. 86), and that SE-BAR = sṭārin "barley" 1 (Clay, O.T. and Semitic Studies i, 301: Landsberger, Vienna Or. Journ. 1912, 121).

It is, therefore, not entirely certain whether we should read uṭṭatu, the Arab. ḫintah, or uddatu from edēdu "be sharp" (i.e. spiky), the barley. 2

(3) šē-gīg, wheat, occurs thus in MT.:—

(1) Simply: 7 šē (grains) in ritual, AM. 91, 4, 10.
(2) ZID (flour) of GIG (-BA) (common); Ext. always: Head (Hand of Ghost), †, poultice, AM. 93, 1, 15. [Loins (?)], †, poultice, AM. 52, 8, 6. [Mouth (?)], †, uncertain use, AM. 24, 1, 2. Cough, †, bind on 15 days (w ZID GIG, re-exd.), AM. 50, 3, 4. Blains (ṣīggat), alongside RIM šē + BAR + šē and ZID QU, †, in poultice, AM. 32, 5, 10, dup. 93, 2, 3. Bruise (āikkā), bandage (poultice), †, AM. 96, 1, 8, 15. Blow (miṣitta), †, poultice, AM. 79, 1, 7.

Quantity: 1 qa, AM. 45, 4, 3; 56, 2, 2. ½ qa, AM. 55, 1, 11; 63, 6, 7; 10 carats, †, temples, bind, CT. xxiii, 42, 9.

Ki-KAL (KAN-KAL) ZID GIG: AM. 53, 1, iv, 6.

3. šā-har-ra GIG-BA (wheaten bread), ¾ qa, AM. 42, 2, 4.

A curious parallel to GE. xi, 87, uṣaznanu šamutu kibati, occurs in Viroleaud, L’Astrologie Chald. Adad xii, 15, “if Adad thunders in the middle of the Waggon-Star and šē-gīg izzanu (nun), etc.”

4. šē-bār, apart from its meaning “barley” can represent “corn” (Getr., s.v.). The flour (ZID) of šē-bār occurs alongside LA ša-bi-tu, to be fried in a rimute (AM. 11, 2, 39), and ZID šē-bār damqu, †, KAR. 266, 14. šē-bār (barley), as Thureau-Dangin points out (RS. 1909, 88), was the commonest grain cultivated in late Bab. times.

šē-pat is another group for barley (Getr. 4, 87 ff.), but one not occurring in MT. HC. 28, 166 gives šē-pat as the word for grain of a captured people.

5. šē + BAR + šē 3 is the commonest of all cereals in MT., occurring some forty or fifty times, more often than wheat or emmer, and it has a large number of complementary additions descriptive of its products or parts, so that it must be a very common grain. It is, in point of fact, only the ordinary šē-bār “barley” 4 with šē attached, which, I suggest, may have been due to the intention of the scribes to make it quite definite that “barley” and not “grain” in general was intended. Küchler properly suggested “Gerste” (Kü. 154, followed by Hrozny, Anzeig. d. Kaiserl. Ak. d. Wiss., Phil.-Histor., 1910, v, 28): “Malz,” however, was subsequently accepted as a meaning (Getr. 106), which is impossible in such an association as HC. 134 and 226 (where Thureau-Dangin translates it thus): the reference is to the winnowing of simple barley (kišma šē šē + BAR + šē aštā (or aštā), “like the grain of šē-bar-šē I

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1 On the form še-’uratu, barley, see Landsberger, l.c.
2 What is I iner im-ma-te, KAV. 197, 23, 45? For šē-za-RA, azrunu as the equivalent of Talm. ‘oršen, barley groats, see Getr. 105. [In the Journal of Near Eastern Studies, v, 207 f., it is shown that the Akkad. reading of šē as a measure was probably ūṭērum.]
3 I was wrong in AH. 203 in identifying it with millet, which is duammu (see KAV. 1929, 51, where I altered my opinion to barley, in spite of the “Mah” which found favour). Malt is, of course, “barley softened in water, then exposed to moderate heat until incipient germination ensues, and afterwards kiln-dried, to destroy the vitality of the seeds” (EC. 776).
4 šē-bār occurs in MT. in ZID šē-bār, for eyes, †, AM. ii, 2, 39.

Syr. ʾāshā, “yeast.”
tossed,” as a simile of the destruction of warriors). So also Esarhaddon (PE. iv, 70). The threshing of barley was thus a usual simile in Assyrian literature: cf. also Weidner, KBo. i, r. 61, quoted by Sidney Smith, RA. 1925, 67): “May the gods, lords of the oath, destroy you kima še + bar + še, ištu elišu isattaddukunši (drawing you like barley from its husk).”

Bread from še + bar + še was a usual food, e.g. in the viaticum of the Lamaštu-demon, after she has been given clothes, a spindle, etc.: šá-har-ra še še + bar + še šim + gar še-sa-a šá-ud-da (iv, R. 55, 1, r. 29, Myhrman, ZA. 1902, 192), which is almost similarly repeated in iv, R. 56, r. 55 ff., Myhrman, ib. 163, where, after she has been urged to “set her face to the desert”, and her oil for her anointing has been prepared, along with her sandals and her water-bottle, the suppliant prays that her scrip may be filled with šá-har-ra še še + bar + še še šim + gar šá-har-ra. šá-har-ra means, of course, bread cooked in the ashes. The same idea of a viaticum made of še + bar + še occurs in Bab. Mag. No. 53, r. 3, zid še + bar + še e-siy-sú gar harrani liddin-sú. barley-bread is, of course, a common fare in the Near East to-day (Hauran, Mesopotamia, see FJ. i, 715).

še + bar + še occurs thus in MT. —

(1) zid, flour: on (in) tooth (mouth) alone, i-sa-ib, AM. 21, 7, 4. Swelling: †, as medium for [poultice], AM. 18, 5, 8. “Poison,” poultice, †, AM. 92, 4, r. 5. Blains (šiggati), †, poultice, AM. 93, 2, r. 1, and preceding “wheat-flour”, ib. 3.

Quantity: ½ qa, †, with cress, flour of chick-peas, etc., bind on feet (?) and neck-muscle, AM. 15, 3, 18. 10 shekels, †, bind on head, CT. xxiii, 33, 12. Stomachic, ½ qa, †, bind on in rose-water, Kū. ii, i, 11. Lungs, †, prob. ext., AM. 35, 1, 11 (preceding “wheat-flour”).

(2) sahar, dust: for scabies in head, †, following “dust of sesame”, shave head, bind on, AM. 1, 2, 11. zid sahar še + bar + še, for mouth, †, AM. 24, 5, 14: prob. †, AM. 90, 8, 5. In AM. 73, 1, 14, the sahar and zid occur side by side for a swelling.

(3) Water: Feet, heat 1 various drugs in water of še + bar + še, AM. 70, 7, ii, 9. Note AM., 16, 2, r. 2, 3, 4. “Water of še-bar-še šar” as a third medium with milk and beer for a poultice (for feet, probably), AM. 68, 1, 8 (cf. me-e uru-ud še + bar + še šar..., ib., r. 2), presumably the green plant.

(4) RIM. With fir and pine-turpentine, Ricinus, linseed, roses, wheat-flour, pounded flour in ū-sa na-as-pi beer as poultice for blains (šiggati), AM. 32, 5, 10. Stomach or anus, †, AM. 36, 2, 9 (for complete text see RA. 1929, 51). Bruise (dikšu), †, in strong vinegar and rose-water, poultice, KAR. 182, 25: †, in fat, etc., ib. 34 (both rim še še + bar + še).

On aching teeth, with ū-sa beer and oil, CT. xvii, 50, 25, and AM. 25, 1, 8.

Quantity: to remove “fire of the stomach”, 1 qa, †, uncertain use, AM. 40, 1, 61. Cf. AM. 70, 8, 5.

zid (?), flour (?), of rim še + bar + še, AM. 82, 1, 8.

(5) uš “penis”: for scabies on head, †, anoint in cedar-“blood”. apply, bind on, AM. 1, 2, 15: cf. KAR. 156, r. 13.

1 I see that I have omitted BE before iv.
(6) Tappis šē + BAR + šē ša[ḫindu], AM. 96, 1, 2 (cf. KAR. 202, iv, 35).

(7) BA-BA-ZA, CT. xxiii, 43, 25, 27 (temples, †, bind on) (Getr. 106), the latter dup. of KAR. 202, iii, 28. Cf. AM. 37, 4, 8.

(8) I-ra ša šē + BAR + šē, with ha-ḫu-ut šâ(!) utuni, RIM šē + BAR + šē, †, boil in rose-water, bind on, KAR. 192, iii, 13.

6. ziz-a-an, ziz-an-na, as “husked emmer” (Getr. 76) is found on early tablets. In AM. it occurs:

(1) Simply: Lungs, †, AM. 53, 1, 18 + 63, 6, 14.

(2) ZID, flour: Head, †, in rose-water [bind on], CT. xxiii, 31, 61: cf. 39, 11.

(3) Sā-šīt-mal, dough; AM. 24, 4, 12 : 45, 2, 4 : 81, 8, 11.

(4) Bread (Getr. 198): 14 loaves in ritual, KAR. 38, 5 : parallel to kaman tumri “breadcake of the ashes”, KAR. 42, 25. Sā-har-ra ziz-a-an, †, is prescribed for a woman in childbirth, KAR. 195, iv, 35. 7 šē ziz-a-an is included in a ritual, AM. 91, 4, 10 (cf. 2).

Triticum vulgare Vill. is used in India as a demulcent, the flour as a local application, and the wheaten bread as a poultice (WPI. 254).

7. še-giš-ni, “corn of the oil-tree,” šamsammu (for šaman-šammu ?), Arab. simsim, sesame (Sesamum indicum DC. has been cultivated from the earliest times, MPB. ii, 1010). Herodotus describes the different cereals of Babylonia thus (i, 193): “The blades of wheat and barley grow there to full four fingers in breadth; and though I well know to what a height millet and sesame grow, I shall not mention it, for I am well assured, that to those who have never been in the Babylonian country what has been said concerning its productions will appear to many incredible” (Cary’s translation).

It occurs as early as the 3rd dynasty of Ur in Myhrman, BE. “Ā”, iii, 1, no. 125, Genouillac, RA. 1911, 18, 8, ITT. ii, 1, 846, Türk. p. 34. It is also found in an OB. letter, Ebeling, RA. 1913, 106, 111, 129, in a Kassite letter, Radu, BE. “Ā”, xvii, 1, no. 84, and frequently in late Assyrian contracts (see ADD.).

Šamašammu is found thus in MT.:

(1) Simply, rare, e.g. še-giš-ni bār-ga with Ammi, human bone, glue, black and yellow sulphur, bray together in ḫa-giš (oil) to rub on or anoint, AM. 19, 2, ii, 6 : cf. še-giš-ni bār-ga along with ḫa-giš bār-ga (which definite description of oil would at once prevent us seeing the “oil” of Sesame in the simple expression še-giš-ni bār-ga).

(2) Gab še-giš-ni, literally, “wax of sesame,” which must be the mucilage from the leaves: “The leaves of the plant are mucilaginous, and employed for poultices” (PC. xxi, 1849, 292) : Head, †, AM. 6, 9, 9 (UD-DU-tim) (cf. 6, 3, 4). Blow (mišitti ȃm-mišit) (i.e. doubtless, with effect of stunning), †, AM. 79, 1, 18. Ears, ext., †, KAR. 202, i, 22, dup. AM. 5, 3, yf.

Quantity: ½ qa, Kū. ii, i, 11 : ii, ii, 49. For swelling, †, poultice, AM. 73, 1, 9. A figure made of it, KAR. 235, r. 18.
(3) ZID, flour: (UD-DU, dry), 10 shekels, for head, † (?), AM. 6, 3, 3, 4.
To ease muscles of arms and legs, †, AM. 98, 3, 14.

(4) SAHAR, dust: ša isȗd maš-hal-ti, ext., for scabies in head, †, AM. 1, 2, 14.

1 zaqpu šE-gIŠ-nI mentioned, ADD. 1007, r. 5 (Assyrian).

It is generally accepted that the lA or lA-gIš oil in ancient Mesopotamia was that of the sesame. The olive has been difficult to identify, and although it is to-day grown in groves about 14 miles east of Nineveh, it cannot be said to be common in the country. There is, however, no doubt that during the early part of this era olive-oil was made at Nineveh itself, for we found obvious vats for the making of it during our excavations (CEN. 141). Yet sesame is not a plant which meets the traveller’s eye in the north of modern Mesopotamia as it does in the south, and this lack of sesame in the north is shown by Sargon (KB. ii, 44, Lyon, 41: Luckenbill, Anc. Rec., ii, 63) “that the oil of abundance which eases men’s muscles should not be too costly in my land, sesame was sold at the (same) price as grain”. This comparative costliness of sesame-oil is well shown in the relative prices when Ashurbanipal came to the throne, when the shekel purchased 234 qa of grain (ŠE-BAR), but only 66 qa of sesame. In other words sesame was about 3 \( \frac{3}{4} \) times more expensive than ŠE-BAR when even dates (which also had to be transported from the south) were sold at one gur, two hundred and ten qa, for the shekel, even cheaper than the local grain (King, Boundary Stones, No. xxxviii: Meissner, OLZ. 1918, 121 1).

Obviously the sesame had to be obtained for oil, no matter how expensive it was, even in Assyria, which goes to show that the olive, so common in the E. Mediterranean countries, could hardly compete with it if, indeed, it grew in Assyria at all. In any case, it would hardly flourish in the heat of S. Mesopotamia (below Tuz Khurmati).

Pliny (NH. xxii, 64) says that sesame is applied topically to ears and burns, and in wine to eyes.

8. samŠE-SIŠ (ŠEMUŠ), šIGUŠU, and 1ŠE-SIŠ, šaššugu.

That these are two different things is obvious from (a) MT, which shows šamŠE-SIŠ to be a bitter vetch, and (b) ABL. 566, which shows šá-dáš-šu(?)-gi to be of 10 cubits length. We can take the šamŠE-SIŠ first.

It occurs in MT: thus:

(1) Simply: Ears, cedar oil and ŠE-SIŠ (?) ..., AM. 34, 1, 23. Quantity, 1 qa, CT. xxiii, 1, 3.

(2) ZID (flour): Temples, †, bind on, AM. 20, 1, 37: CT. xxiii, 41, 16. Blains (šI(g)gati), †, bind on, KAR. 192, r. ii, 46. Sorcery, alone in cedar and cypress oil anoint, KAR. 90, r. 18. ZID-ŠUR-RA ša ZID ŠE-SIŠ occurs AM. 4, 5, 7 (cf. KAR. 184, 6).

CT. xxiii, 1, 1–4 prescribes (for muscles of the loins (lumbago) after certain treatment) “wiping” (tukappar) the leg with šá-šIT-MAL ŠE-SIŠ, “dough of bitter vetch.” In an incantation against murus ganguard 3

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1 Meissner has omitted “1 gur” in his transliteration of line 6.

2 Note: 1ma + 2šE-gIšš = šIgIš, D., 146, 9, which must be a bitter apple, crab-apple (?), or even Dead Sea Fruit (?), but there is no evidence to show what it is.

3 From the drugs, and from ibid. 1, 205, where two forms of sulphur are used, it is obviously an external disease of the head, and not headache.
Ea gives counsel which shall make the gulu of the patient's head tremble: "arsuppup še-šiš inninnu, which in its growth (ši-ir'-i-ša) has reached its day, let an old woman with clean hands bray, and mix together and knead, and put it on his head ... that the sickness of the head, like the pigeon to the cote, like the raven [to] ... heaven, like the bird to the broad places may fly away" (CT. xvii, pl. xxii, 129 ff.).

A curious ritual against ghosts shows its peculiar use: CT. xxiii, 17, 33 ff., dup. KAR. 21, r. 1 ff.: after washing his hands in alkali and burnt gypsum (gašša) he is to say "O Shamash, the evil ghost which thou knowest and I do not know, let it not approach, let it not draw nigh, let it not be hostile LUU (v. QA.) its way mayst thou bar"; and after speaking thus he is to fill a bull's hoof with water, put therein flour of še-šiš, beat it up before the sun with an elptu-reed, pour (it) out, and the ghosts shall be stopped. Here the paste of the bitter vetch is used on account of its bitterness, and the bull's hoof typifies, I suggest, that by sympathetic magic the evil is to be kicked away. (For the hoof of a wild ox cf. CT. xvi, pl. 37, 38: Devils, i, 169).

The "flour of roast grain of še-šiš" is used in an incantation against ghosts, CT. xxiii, 16, 12, and 17.

That this plant is a corn or a vetch is obvious from its presence in the vocabularies on p. 95f.; its meaning "bitter corn" gives us the final clue, and we must see in it a bitter vetch. We must, however, turn aside for a moment to consider šamkiššenu and šamgulbutu along with it, since both of these must be included in the solution.

At first sight, šamkiššenu, with its Sumerian šamšE-GÜ-ŠA-HAR-RA, (i.e. "vetch of baked bread") should be the Lathyrus sativus L. "A white, light, and pleasant-flavoured bread was made from the flower [sic] of the seed; but it produced such dreadful effects in the last century, that the use, of it was forbidden ... Mixed with one half of wheaten flour, a perfectly harmless and good bread is produced" (YK. 317). Actually, on philological grounds, the Assyrian kiššenu should be the Syr. kušné, Vicia Nissoliae L. or V. Ervilia L., which is the Arab. kursennah,2 equated also with either the Black Vetch, or Orobus sessilifolius Sibth. et Sm. (EF. ii, 486 ff.: FP.3 i, 425), as well as the Lathyrus sativus (FJ.2, ii, 486). (It may be added that the kussémeth of the O.T. is Triticum dicoccum Schrk., FJ. 2, i, 768.) Scheil (ZA. 1893, 199, 13) gives ... -ku in-nu GÜ-ŠA-HAR-RA, which indicates a straw. But Lathyrus sativus is also given as an equivalent to the Arab. jilbān, Syr. gülba (Ainsworth, A. 34: cf. also FJ. ii, 440), and this must surely be our šamšE gülbu, gülbutu. Consequently, we have to accept that there is and was a confusion between the vetches in the Semitic dialects, and all we can do is to suggest the following possible allocation of these:

(a) GÚ of the "baked bread", since it is kiššenu, must be either Lathyrus sativus from which bread is made or, as equivalent to the Syr. kušné, one of the Viciae.3

1 Cf. KAR. 92, 27, of washing hands with IM.PAR (gaššu) and river-water.
2 I should add here that I heard the form at Mosul kešân, a plant "like beans". Cf. Löw, Ar. Pf. 228, and ZA. 1915, 171 ff.
3 GÚ ēqī occurs on a Nineveh text found by us, used for removing gis-mi (darkness) of eyes, by local application.
(b) ʾṣēmah-gulbu must be jūlān, *L. sativus*.

c) ʾṣēmah-šiš, ʾṣīgušu, as particularly “bitter corn,” one of the *Orobus* genus, *O. tuberosus*, the Tuberous Bitter Vetch, *O. niger*, or more probably than either of these, *V. ervilia* (L.), the Bitter Vetch.

Now, leaving ʾṣēmah-šiš, probably the Bitter Vetch, we can discuss ʾṣēma-šiš. This is a tree or shrub, as is clear from *ABL*. 566, 16, where there is a mention of 20 ʾṣēm-ā-šu-qi of 10 cubits length, alongside 6 ʾmiš-mā-kan-na (mulberry) of 6 cubits length and 1 thickness, 1 ḫa-lu-ūb (fir) of 5 cubits length, 1 thickness, 10 ʾmiš-mā-kan-na of 2 qa thickness and 5 or 6 cubits length, 1 fine ʾṭku (willow) of 2 qa thickness and 6 cubits length. The fact that no thickness is given for the 10 cubit lengths of ʾṣēm-ṣugi suggests that they are thin and very long poles. We find “1 qablu ʾṣēm-ṣu-qi” grown in groves or gardens near Harran (*Domesday* 1, ii, 43). The most probable cognate is the Syr. qaisa dh” sisa gh, *Arab. saisafīn*, *O Alyscotome spinosa* L., or *O. villosa* Link., oily and fragrant (*F. J.* ii, 426), one of the Papilionaceae to which family the vetches belong, which is a good reason for the similarity with ʾṣēmah-šiš.


ʾma + ʾgunu-gud is also ʾarsuppū (*Meissner*, *MVAG*. 1913 9, 16, 49) (3rd Dyn. of Ur, *Scheil*, *RA*. 1921, 56, 10). *Arsuppū* is used in the incantation against murus gaqqadi quoted above with ʾṣēma-šiš and inninnu, all three being brayed, mixed, kneaded and applied to the patient’s head (p. 103). It occurs also in a ritual with seven other grains or vetches (*BBR*. No. 41, 25 ff., see below).

ʾziḏ ʾṣēm-gud (“flour of ṣ”) occurs *AM*. 91, 4, 2 (cf. *ib*. 2, 5), *JRA*. 1905, 829: *VR*. 26, 230. (Note ar-su-up ṣ-nari, Tod. 14, iii, 3, and compare the name *Cicer arietinum*, “ram’s head,” so called from the shape of the seed.)

As is noted above there is also a tree ʾma + ʾgunu-gud, ʾarsuppū, just as there is an ʾma + ʾgunu-šiš, ʾṣīgušu-tree.

10. ʾṣē-ın-nu-ḥa, ʾṣīm-in-nin(n)nu (*D. 367, 101*).

This occurs thus in *MT.*, etc.:


2 (ZID) (flour): *Head* (to remove (?). . . .), with flour of gū-gal (*Lathyurus*) flour of gū-du₁₃ (fenugreek), together in yeast steep, shave (head) and bind on, *CT*. xxiii, 33, 18 (cf. *AM*. 6, 9, 6 ff.). Blow (*mišitti*), †, poultice, *AM*. 77, 8, 10 (ʾziḏ ʾṣē-ın-nu (?). . . ḫa, not certain).


The simple corn can be parched, i.e. 1 qa ʾṣē-sa ʾṣē-ın-nu-ḥa (ʾṣē-sa is a basket), *CT*. xxiii, 49, r. 18–23, *RTC*. 52, r. 4, *CT*. 39, 3, 13.

I can suggest, as an equivalent, which I feel rests on an insecure foundation, the *Anamirta Cocculus* Wight et *Arn.*, *Menispermum cocculus* L. (*MPB*. ii, 576) (*Cocculus indicus*), imported from the E. Indies, and found in the forests of Malabar (PC. vii, 306). *IB*. 2057 speaks of it

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1 gū-nunuẓ occurs in the Fara texts (*VAT*. 12625, 16) and Nik. 63, 64, 68 (see D. 106, 168).

2 Note Ezek. iv, 9, which prescribes the taking of wheat, barley, beans, lentils, millet (dōḥan) and spelt or emmer (*khwat*mēm) (cf. *Getr*. 47).
under the name māhī-zārah, well known to the Arabs in his time, and I have seen (probably the same) berries in the Mesopotamian bazaars used for killing fish in the same way as the Cocculus was used. IB. does not mention the berries, but the bark only in this use. “It is a familiar poison for destroying fish. . . . The fruit is a berried drupe, varying in size from that of a pea to that of a laurel (or bay) berry . . . ; the external integument, or husk, is very brittle; within is the seed or kernel, lunulate, oily, with a nauseous and intensely bitter taste . . . Cocculus Indicus is never used internally in the practice of medicine, but an ointment formed of the powdered berries is very efficacious in some cutaneous diseases, such as Porrigo capitis and Syccosis menti. It speedily allays the inflammatory state.” It is a climber having “a stout woody stem as thick as a man’s wrist” (PC. ib.). BMI. 56 gives it as an insecticide. Watt (Dict. Ec. Prod. of India i, 233) speaks of its bitter berries used to poison fish, and an ointment made from it to destroy pediculi, the plant coming from S. and E. India, Burma, and the Oudh forests. “The Arabs were probably also acquainted with it, but there is no satisfactory evidence upon this point to be gathered from their writers upon materia medica” (ib., quoting Dr. Dymock, Mat. Med., W. India, 20). FJ. ii, 252 gives the Arabic as samm al-sumak “fish-poison”. Ainslie (Mat. Ind. ii, 131) says that the tree, according to Avicenna, was the [mbrj] mehurje of the Arabians of his day, who were acquainted with the effect of the berries in intoxicating fish, and he goes on to say that it is the coque de Levant of the French. Rauwolff (Travels i, 127) describes it as used in the Euphrates. BMM. 137 prescribes it in decoction, ointment, and paste for epilepsy, chorea, and paralysis, and locally as a parasiticide, so that he at all events suggests internal use.1

It certainly occurs at a very early date in Babylonia (Reisner TURk. 121, ii, 5; ITT. iv, 7129, 16, a small quantity in proportion to the other grains), but the possibilities of the identification of inninnu with the Cocculus depend only on the ha “fish” at the end of the Sumerian word, and its properties as a remedy for the head.

11. खक्कु (which is also ṣa m SE-GD-DU13 “the little vetch”). ḡū appears to be a general picture for some of the Papilionaceae (ḡū = “neck”), probably from the shape of the pod. We can discuss ṣam khó-GAL “the great ḡū” and ṣam khó-DU13 “the little ḡū” here.

(a) (sam) ṽ-GAL “the great vetch” (= ḡalluru, Hrozny, OLZ. 1913, 52, cf. FJ. ii, 437, the Heb. ḡārūl, Syr. ḡurla, a kind of Lathyrus) occurs thus in MT.:

(1) Simply: Ext.: apparently some skin-trouble or boil, ṫ, poultice, AM. 84, 4, iv, 5. Bruise (dikšu), ṫ, AM. 96, 1, 12. 7 ṣe (grains) AM. 91, 4, 11.

(2) ZIR (flour): Ext.: Head, scab, ṫ, [bind], AM. 1, 2, 19: Eyes, ṫ, 5 carats, bind, AM. 8, 1, 14 (probably): ṫ, AM. 13, 3, 9. [Breast] and loins, ṫ, bind, AM. 51, 8, 3. Bruise (dikšić), ṫ, AM. 96, 1, 8.

Quantity (besides the instance above): head, ṫ, bind, 10 shekels, CT. xxiii, 33, 11.

ḡū-GAL and ṽ-GAL-ḤAR-RA (“ground ṽ-GAL”) are found in the

1 Watt, CPI. 546, gives other intoxicants to kill fish. IB. 2067 speaks of sikrān al-kūt “fish intoxicant”, which Southeimer considers verbascum.

The use of gu-gal as one of the Lathyri in medicine in poultices hardly needs comparison.

(b) šanšē-gu-du, kakkū, the "small vetch", pulili, Trigonella Fumum-Graecum L.

It occurs thus in MT.:

1. Simply: Head, against grey hair, †, [ext.], AM. 3, 6, 8. Feet, with roses and cress in rose-water, bind, AM. 74, 1, 33. Poultice, †, AM. 84, 4, iv, 5. 7 šé (grains), AM. 31, 4, 11.


Quantity: 10 shekels, head, †, bind, CT. xxiii, 33, 11: temples, †, bind, ib. 45, 11. ½ qa, †, bind, AM. 15, 3, 18.

Like gu-gal it is thus used for poultices, and the medical comparison is unnecessary.

Ebeling (E., xiii, 16, n. 6) gives the equivalence pu-li-li from an unpublished vocabulary, which he translates "Linsenmehl (?)". But pulili, being probably one of the Papilionaceae, must surely be the Syr. p'illā, Trigonella Fumum-Graecum L., not necessarily a doublet of the Aram. sēbhiltā, but very definitely identified (see FJ. ii, 478), and this would harmonize well with its use in MT. In SM. Trigonella-flour is frequently used (e.g. ii, 693, for scabies). gu, as kakkū, would appear to be the same, but it is not easy to find a cognate for this latter unless the Syr. g-g-na, ervum, is a possibility (AH. 277), or k-k-me. The restoration kaku or kakkuru (?) (Ungnad, OLZ. 1923, 272), with the suggestion of equivalence with cicer, is in the face of kak-ku-u untenable, as may also be said of Langdon's views about it, JRAS. 1925, 718. Ungnad, however, courteously corrected this in accordance with AH. 277 in ZA. 1926, 223.

12. šanšē-šē-li-a, šanka-rangu, Oryza, rice. I am indebted to Iraq 1939, 180 ff., for the following quotations from my article there. "The Sumerian word šanšē-šē-li-a is made up of šē 'corn' + šē-li-a = dišu 'grass', but it is the translation kwangu which gives the clue. Périnj is one of the words used in Arabic (especially in Mesopotamia) for 'rice', and in my article I quoted in full from FJ. i, 731, which gives ample proof that the history of the word périnj, as equivalent of the Persian gurinj, must be the original of our word šanka-rangu.

With this obvious philological connection there is no difficulty in accepting the certainty that rice was at least known, even if not cultivated, in Mesopotamia, in the seventh century B.C., and perhaps even earlier (according to whatever date may be assigned to VAT. 9000 or BM. No. 108860). That rice was already in Mesopotamia in the Persian period is well known (see FJ. i, 731).

I may quote the following on the early history of rice:

1 Here I might add ou·oid·da, as D. 106, 159 suggests, "Langbohne," in which case it will be Vigna "long bean" (dyn. of Ur, Myhrman, BE. "A", iii, No. 44, 2).
2 See also Steingass' Dictionary, s.v.
"Writers are agreed that the earliest mention of rice cultivation is connected with China, where, according to Stanislas Julien, a ceremony was established in 2800 B.C. by Emperor Chin-nung, in which the sowing of five kinds of grain, one being rice, is the chief observance... modern philologists are agreed that they [various words for 'rice']... come from the Old Persian word *virinzi* or *virinza*, the modern equivalent of which is *birinj* (CPI. 824). Sir C. J. Lyall states (quoted ib.) that *virinzi* is exactly the equivalent we should expect of the Skr. word for rice *vrihi*, and the names point to the time when the two branches of the Aryan race dwelt together. P. Horn, in his Grundr. d. Neupers. Etym., No. 208, says (of "*gurinj* (A.M.) 'Reis')": "Vielfach entlehntes, gewiss ursprünglich arisches Wort: vergl. arm. *brinj*: kurd. *birinj*: oss. *brinj* (Hübschmann, S. 121): bel. *brinj* (35): wäx. *gurinj*, &c."

Again, from Hehn's Kulturpfl. (6th. ed.), 486:


Add also from Theophrastus (iv, iv, 10):

"But above all they [the Indians] sow a cereal called rice, of which they make their mash. This is like rice-wheat [ξενα], and when bruised makes a sort of porridge, which is easily digested; in its appearance as it grows it is like darnel, and for most of its time of growth it is in water; however, it shoots up not into an ear, but as it were into a plume, like the millet and Italian millet."

Our word *kuranguru* is obviously taken over bodily from the Persian *gurinj*; it is one of a group of grain-words, so that we need have no doubt about its connection and, to complete the proof, *iamšē-li-a* "corn + grass", coincides with the description of *oryza sativa* in Rhind, Vegetable Kingdom, 221, "this is a paniced grass."

13. *iamšē-ab(ēš)-šu(šu)-man-na-gu, *iamšē-la-(la)-an-gu, probably indigo. Again I am indebted to Iraq 1939, 63, for quotations from my article.

"Here again we must be dealing with one of the vetch-like plants. The word *iamšālangu* certainly bears a resemblance to the Persian *līnān* (līnān), the Indigo plant. Its exact relation to šē-šīš (which is either the 'bitter vetch', one of the genus *Orobus*, *O. tuberosus* perhaps, or more probably *Vicia ervilia*) is difficult to assign, but if the Assyrian scribe in giving it a synonymity with a 'bitter vetch', be correct, then we might again compare the Syr. *indigoferae tincturiae semen*, the
Arabic (Payne Smith, Thesaurus, 591); on the other hand, at all events Löw, FJ. 1, 496 says: 'Wenn BS. BB. 407 habb en-nil zu
(ARDO 1, 101, اَهْبِ اَن نِل َِّ يُرُضِ اَن نِلُ) setzt, so wird das unrichtig sein.'

"But there is no question that šē-šēš has an original meaning of 'bitter corn-plant'. Again, the equivalence of 'ulalangu with 'au-duša shows that it is a 'small vetch'.

'Elmeru, 'elmesu are troublesome, because the Assyrian botanist does not seem to have been certain about them: in one place he gives 'ulalangu as 'elmeru, in another as 'elmesu. Still more so are [šē]
ab(ēš)-su-man-na-gu, 'ab(ēš)-su-an-g[u].

"Now the connection of the Indigo with vetch-like plants is obvious from the following: 'The Indigo Plant grows about two Foot high, with round Leaves . . .; after which come Flowers, almost like those of Pease, of a reddish Colour, from whence come long, crooked Pods, resembling a Sickle, or Hook, which enclose a little Seed in them' (HD. 89). Lemery (op. cit. 91) says that the Anil, Gali, sive Nil' resembles Rosmary’ is a plant of Brazil, with flowers like those of peas, reddish, and succeeded by long crooked pods: 'all the Plant has a bitter piquant Taste.' (And to this I may add, of the Annil, 'called gali,' which Linschoten describes (Voy. E. Ind. 1598, i, 61–2: ii, 91, quoted by CPI. 664), this author says 'it groweth in India . . . very like rosemary'.)

"Three species of Indigofera are now found in Syria or Palestine (f. arabica Jaub. et Sp., f. paucifolia Del., and f. argentea L., the latter cultivated and sub spontaneous from Arabia) (FP. 3, 1, 368). Pliny (NH. xxxv, 46) says that Indicum comes from India; Dioscorides (v, 107) speaks of it as 'IvšKov. The Periplus of the Erythraean Sea (A.D. 80, McCrindle, transl. 17, 109, quoted by CPI. 664) speaks of Indigo as exported from Barbarikon, a Scythian town on the Indus. In conclusion, it is worth noting that the Persian termination -nj may have been represented by -angu in the seventh century B.C. by the Assyrians."


15. šē al-du-um should be included here (Thureau-Dangin, RA. 1924, 22, 6, quoting Ham. Code, r. xxi, 73 and 83: VS. xvi, No. 50, 22).

16. ZID-MAD (v. MA-AD)-MAL (1) upuntu, chick-peas, (2) mashātī.

From the various texts in which ZID-MAD-MAL (variant ZID-MA-AD-MAL, Thureau-Dangin, RA. 1924, 132, 8) occurs it is obvious that we have two different substances. From Surpu v, 123 and 130 (and presumably GE. v, ii (iii), 48), it is a seed: from other and more ritual texts it is an aromatic to be burned in censers.

(a) Upuntu. The value upuntu for ZID-MAD-MAL is found in Surpu v-vi, r. ii, 1 and 8, where še-zir u-pu-un-ta in the preliminary ritual is replaced by še-zir ZID-MAD-MAL in the ensuing directions. Thus l. 123, "my hands are full of še-zir upunta," which goes on in l. 30:

1 1 "Seed of niš which comes from India."
“As this šē-zir ZID-MAD-MAL is burnt in the fire
The cultivator shall not plant it in the field,”
and so on, showing in the succeeding lines that it will stand in the runnel and have root and shoot.

Thereafter we can see it as the food which Gilgamish carries with him as a viaticum:

“They dug a pit in the sunlight . . .
Then went up Gilgamish on [the mountain]
ZID-MAD-MAL-su he poured out [into the pit]
‘O Mountain, grant (me) a dream’ . . .”

It is a pathetic little offering, all that the traveller can give; upuntu is all that he has, probably carried in a small bag with him, as his only food for his journey. So also are they used by being thrown into the river as an offering (JRAS. 1925, 43, 13).

In the explanatory ritual text BBR. No. 27, 15 it is possible that šē-BIR-BIR-RÎ-DA is explained by ā-put-un-tum šē-zirzi ma-ka-lu-ú (“seeds for a meal”).

The Mishnaic 'appôn, chick peas, was seen to be the philological equivalent of upuntu as far back as Halevy (Doc. Relig. 138, “grain de pois”); cf. FJ. ii, 427).

It was a common food of the simplest kind to take on a journey (cf. Rauwolff, i, 68, quoting many sorts of cicer either boiled or eaten raw at Aleppo).

(b) Maṣḥāṭi. Cf. CT. xvi, 27, 27, „ (= alū limnu) šu niqá la iđá ma-aš-h[a-ti] (= ZID-MAD-MAL) la iđá atta “Evil alû that knoweth not sacrifice nor maṣḥāṭ[a] art thou”; ib. 42, maš-ḥa-ti ul iš-r[uq] (DUB-DUB-U]), parallel to 44 [niqâ]ul i-[naq-qu-u]. There is no doubt that the text BBR. 1-20, 53 (III minkakku “burašu ‘erini ZID-MAD-MAL la-šar-raq, “3 censers of pine-gum, cedar (and) ZID-MAD-MAL thou shalt offer”) shows that ZID-MAD-MAL cannot mean “chick peas” here, but must be incense. Thureau-Dangin was therefore right in Rituels accadiens, 122, 21, ina ‘erini buraši ZID maṣḥāṭi ina pâmi lilissi taqalla “in cedar, pine-gum, powder of maṣḥāṭ before the drum thou shalt fry (burn on a brazier)”. In AM. 84, 4, r. III, 10, 11, we get “7 GAR ZIZ-A-AN 2 qa ZID maṣ-ha-ta ša . . . 1 qa ūṭutu riqqeq kal-šu-nu”, etc. It is not clear exactly what is meant, but ZID maṣ-ha-ta is more probably “powder of incense” than “flour of chick peas”.
V

FLAX
1. Iṣē\textsuperscript{1} naš šip\textsuperscript{2}t\textsuperscript{2}, Gossypium arboreum L., cotton-tree.

2. Iṣē\textsuperscript{1} naš šip\textsuperscript{2}t\textsuperscript{2}, kitū, Linum usitatissimum L., flax. (Kīttinnu, a linen garment.)
VI

ANTHEMIS, HELIOTROPE, LUPINS
ANTHEMIS, HELIOTROPE, LUPINS

A. 1. șamșit-Gân, qurban eqli, Anthemis nobilis L. (and sim.), chamomile.

1. șamșit-Gân, qurban eqli.

Pl. 20, K. 4216 + 4360, x–ix, 26–31:

<table>
<thead>
<tr>
<th>șamșâ-[mi] eqli</th>
<th>șam [qurban eqli]</th>
</tr>
</thead>
<tbody>
<tr>
<td>șam ........ eqli</td>
<td>șamqurban eqli</td>
</tr>
<tr>
<td>șamni-ib-′ eqli 3</td>
<td>șamqir-ba-an eqli</td>
</tr>
<tr>
<td>șamGûrûn (mîb) eqli</td>
<td>șamqir-ba-an eqli</td>
</tr>
<tr>
<td>șamzu-qî-pa-a-nu</td>
<td>șamqir-ba-an eqli</td>
</tr>
</tbody>
</table>

From 108860, iii, 57 (CT. xxxvii, 31), the line preceding șamșâ-mi Gân = șam ........, we have șam ditto (= șamrušrûšu) ut( | -liš șamșit-[Gân] (see p. 206). For the VM. text containing șamqurban eqli see further, p. 119). Note one occurrence in Labat, Comment. Ass.-Bab. 24, No. 1, l, 6, șit-Gân = qur-ban-nu eqli.

It occurs in MT. thus:

(a) șamșit-Gân:

| Head, bray with Lathyrus and fenugreek, bind on with rose-water, AM. 3, 5, 9: (hair, probably), with alum, bray anoint in cedar-oil,4 AM. 5, 1, 4: for a man who has anointed himself with “șammi la ta-ki (if this is how it is to be read), and his head ”, by itself in . . . , AM. 5, 2, 8.

(b) (șam)Sît eqli (A-ŞA).

Ext.: for sickness coming out on a man’s foot (leg) and itching, bray with PA (tops) of šiMi-tak and PA (tops) of šamránu (prob. anise), and apply, AM. 74, iii, 12. For šašalli (shoulders) hurting, dry, bray [† (?)], apply in oil (?)], AM. 48, 4, r, 6, when a woman has been given noxious drugs to eat, and much water flows from her uterus,†, apply to her uterus on a cloth, KAR. 194, r, 4, 31 (ȘIT-Ă-SA-GA). Uncertain disease, bray, †, in beer and milk, apply, AM. 56, 1, r, 8, and the similar in beer and urine, apply, 94, 2, 9.

Enema: “When a man lies down to sleep, and sleep comes soundly upon him, and șašânu ștar . . . , pound with a testicle (root) of mandrake, mix in fat, make an allûnu (suppository) . . . ” AM. 47, 1, 2.

Int.: Strangury, †, drink, AM. 59, 1, 37. Jaundice (? stomach), bray, drink alone in beer, Kû. iii, iv, 12. For stopping šiq (prob. some form of heartburn),1 alone, Pl. 36, K. 4187, 12 (the dup. KAR. 203, iv, 38, gives “seed of [șam]qurban eqli] to be drunk alone in asses’ milk (dup. also

1 Restored from No. 108860, iii, 58 (CT. xxxvii, 31).
2 šâr.
3 h. R. 11, e-ʃ, 73 (also Haupt, ASKT. 45 ff.: Landsberger, Ana Ittišu, 14), MĂŠ-Ă-SA-ĠA = ni-ʃl. [eqli].
4 This is obviously a dye. The upper part of the receipt is broken away, but the one following is for hair which has gone white in youth, and hence our text here shows that the Assyrian (like his more modern successor, especially in India) was prepared to dye his hair yellow, just as he would stain his hands and nails. Anthemis tinctoria L., used by dyers, is doubtless the species of chamomile which would be most efficacious, the alum, of course, providing the usual mordant.

The recipe for the same trouble, which immediately precedes this, prescribes lead, antimony, and saltpetre, obviously for a black dye (DACG. 119).
of D.T. 136, 18, (Pl. 31), the other drugs (to be used separately) being: (a) šamsatkanānu (b) šamqurbanu (p. 351), (c) šammandāšum (lentils). šamsīt-gān (!) is also drunk for a cough alone in oil and kurunnu-beer, šb. 27 (D.T. 136, 7 prescribes simple beer). It is uncertain if we should restore šam-da-ru, 267 (Pl. 36) + 472 (Pl. 45) to šamqurban eqli, a drug for misir libbi, “the shutting of the stomach”. Note šamqurban eqli ki-ri, AM. 104, 1, 15, like šam-dil-bat ki-ri.

A species šamsīt-gān-sig “yellow qurban eqli” exists, described as šammu ku ha-am-ti epis “drug for anus making a blister” (or similar, hæmorrhoids) (KAR. 203, r. iv, 19) to be mixed with fat and applied to the anus. The colour suggests that it is A. tīntorius L. (see p. 117) the “Golden Marguerite”, or perhaps Matricaria aurea L. (also bābīnāy in Arabic) (used in infusion like Chamomile tea, FCH. 91).

I see no reason to change my previous identification with Chamomile (AH. 67). šamsbury eqli “Gift of the Field” is strikingly similar to the Arabic qurbayîn “chamomile” (Anthemis deserti Boiss., FP. 2 ii, 53; FJ. 2 i, 377). šamniš eqli (v. nišī eqli, MA. 634, see p. 117, n. 3), “Shoot of the Field,” and šaminīb eqli, “Fruit of the Field,” are comparable to χαϊμπις, “Apple of the Ground.” Still more simple is šamsa[mu] eqli, “Drug of the Field.”

As for šamsuqquqipānu from szuqquqipu, if it should mean “Drug for a Scorpion”, then we may compare the VM. text (p. 119) where šamsqurban eqli (šamsīt-gān) is prescribed inā qaran aqrabi “on the horn of a scorpion”. It is, however, the Heliotropium which Pliny (NH. xxii, 29) recommends against scorpions.

The true chamomile is Anthemis nobilis L., which with Matricaria Chamomilla L., was seen at the oasis of Al-Ḥadhr (FJ. 2 i, 375). The A. scariosa D.C. (the Arabic bābūnāy), A. pseudocotula Boiss., and Chamamelum prcocx (M.B.) Vis., were seen near Qala‘ah Sherghat (Herzfeld, Beih. 32). I have myself seen the ordinary wild chamomile carried in a basket on a boy’s head at Mosul.

Medicinally, the flower-heads of Mat. Chamomilla L., the wild chamomile, with an aromatic smell similar to apples, are used as a tonic (BMP. No. 155), and among the Persians to-day the odour of the heads produces sleep (IMP. i, 695). The true chamomile (BMP. No. 154) is a stimulant, tonic, and anti-periodic, is used in flatulence, and as an emetic, while ext. it affords fomentations. Chamomile oil is used for rheumatism (IMP. i, 695). LPG. 105 has a long dissertation on their numerous uses (for hypochondria, hysteria, menstruation, intermittent fevers, indigestions, and the whole plant for cataplasms, notably on hæmorrhoids; it adds that the wild chamomile has been confused with the matricaria, and substituted for it). It is obvious that the uses in M.T. and modern medicine are much the same.

1 Cf. KAR. 147, 25: “On the fifth day (of Tisri) he shall not eat fennel (or) Lepidium, (or) šiqu will overcome him” (cf. AM. 6, 6, 11, šiqu isubat-su 85, 1, r. 6, . . . -da ši-qī-lū šī . . . : VR. 41, c-d, 49, . . . šī-i-ga. The apparent connection between wind and bile suggest heartburn (or possibly hiccups) (see ASJL 1930, 12, n. 4). It might possibly be connected with the Heb. šāq Hiph’īl “overflow”, Jo. ii, 24. Chamomile is used for indigestion (LPG. 105).

2 I doubt the translation of šam-qurban eqli in the OB. letter of CT. xxix, 7 (27780), as given by Ebeling, RA. 1913, 24. The text gives šīr šī-šī and šam-mīr respectively in two lines, the translation running: “Of the ten shekels of silver of which I spoke to thee, may this
2. In this connection may be included the plants *samkamti-egli* and *samNUNUZ-egli*. In the *VM.* we get the sequence:

<table>
<thead>
<tr>
<th>Plant</th>
<th>VM. Line</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>samsha-gru</em></td>
<td>ina šarrat la pisiti</td>
</tr>
<tr>
<td><em>samzar</em> GI-ZU-LUM-MA</td>
<td>ina qur-šib-ti eqli</td>
</tr>
<tr>
<td><em>samel</em> 2-lat eqli</td>
<td>ina i-sa-ri eqli</td>
</tr>
<tr>
<td><em>samNUNUZ eqli</em></td>
<td>ina pi-i-ru</td>
</tr>
<tr>
<td><em>samšIT-GÂN</em> 6</td>
<td>ina qaran agrabi</td>
</tr>
<tr>
<td><em>samkam-me GÂN</em> 6</td>
<td>ina tak-zu-ni</td>
</tr>
</tbody>
</table>


A group which is reckoned as following GI-ZU-LUM-MA and preceding *samkam-me eqli* *pišu* is given on Pl. 37, K. 4417, 21-3, and Pl. 38, K. 5424, B, iii, 6-8:

<table>
<thead>
<tr>
<th>Plant</th>
<th>VM. Line</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>samkam-ti eqli</em></td>
<td>ina &quot;</td>
</tr>
<tr>
<td><em>samšAR eqli</em></td>
<td>ina &quot;</td>
</tr>
<tr>
<td><em>samšAR eqli</em></td>
<td>ina &quot;</td>
</tr>
</tbody>
</table>

To which may be added *VAT.* 9000:

<table>
<thead>
<tr>
<th>Plant</th>
<th>VM. Line</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>samšAR eqli</em></td>
<td>ina &quot;</td>
</tr>
<tr>
<td><em>sam</em></td>
<td>ina &quot;</td>
</tr>
<tr>
<td><em>sam</em></td>
<td>ina &quot;</td>
</tr>
</tbody>
</table>

It will be noted that K. 4140, A, omits *samNUNUZ eqli*, while *samšIT-GÂN* (qurban eqli) is common to all. On the other hand, the sequence is not the same, nor is there any actual equivalence for a possible pair. *samkamti eqli* = *samqurban eqli*. In the *samšasaratu*-group (spurge, p. 148), *samkamti*, eqli = *šasaratu*.

The plant *samNUNUZ eqli* would appear to mean "offspring of the field", borne out by *VM.*, *ina pisu*, where, as often happens in the *VM.* texts, the right-hand column almost repeats the plant of the left-hand column.

In *MT.*... *kamti eqli* occurs in a lung-text, †, *AM.* 87, 6, 2.

To sum up this last group: there is little to prove that there are definite equivalences in among them, but there is obviously a close connection. 8

money satisfy thee; and of the five shekels, the rest of thy silver, may šrr-špi satisfy thee, and when the *amššrr* is before thee, thou wilt attain to twice thy money." 9

---

8 According to a rough note in the MS. here, the author would identify the white *kamme* of the field as truffle, a suggestion which he believed to have been anticipated by another scholar. Cf. Holms, *Kl. Beitr.* 74, and also p. 168.]
2. **šamši-man**, *imḫur-āṣrā*.

1 and 2. **šamši-ši** and **šamši-man**:

(4) VAT. 9000:

| (a) šamši-p-šur bi-[m]e | (**šamši-ši**)     |
| (b) šamši-SAG | šam |
| (c) šamši-GAL | šam |
| (d) šamši-GU-LA | šam |
| (e) šamši-DAM | šam |
| (f) šamši-SI-KUR | šam |
| (g) šamši-TI-IS-KUR (or ti-ši-kur) | šam |
| (h) šamši-LUL-AZ | šam |
| (i) šamši-mu im 3-ti | šam |
| (j) šamši-KI-KU-GAR-RA | šam |
| (k) šamši-KU-4 | šam |
| (l) šamši-KUR-HAR-GUN | šam |
| (m) šam ? ? LIŠ (?) | šam |
| (n) šamši-SAM-SAM | šam |
| (o) šamši-KU-KU | šam |
| (p) šamši-KU-KU-KU | šam |
| (q) šamši-NAM-NAM-NAM | šam |
| (r) šamši-AŠ-2-AŠ-ME-ME | šam |
| (s) šamši-su-ul-li-bu | šam |
| (t) šamši-tu-ru 2-ub-la | šam |
| (u) šamši-ma-mit | šam |
| (v) šamši-nap-lu | šamši-Man |
| (w) šamši-si-du | šam |
| (x) šamši-su-li-li-bu | šam |
| (y) šamši-ia-ā | šam |
| (z) šamši-kur-kur(kur-kur)-ti(at) | šam |
| (aa) šam BU | šam |
| (bb) šamši-KU | šam |
| (cc) šamši-SI-KUR | šam |
| (dd) šamši-r(i)ʻnu-ni) HA | šam |
| (ee) šamši-su-nu-QU | šam |
| (ff) šamši-NIGIN-UR 4-UR 4 | šam |
| (gg) šamši-tar 5-šir 5-la-nu | šam |
| (hh) šamši-BAD-SAL-DAN-TUR | šamši-Man |
| (ii) šamši-ku-bi | šam |
| (jj) šamši-dá(?) 5-la-bi-la | šam |
| (kk) šamši-r(i) kalbi | šam |

---

1 Or bi... [3].
2 Not clear.
3 Might be ši, but the other would appear to be more satisfactory.
4 Hardy *šam ši-ku*, since "heartburn" is ši-šu-Qu, MA. 1066.
5 Not clear.
6 Perhaps a.
3. šam-TAR-MUŠ:

(B) CT. xxxvii, 28, i, 12, 108860:

   [šam-TAR]-MUŠ
   šam-ra-ri-a-nu
   šam-TAR-MUŠ ina lābīb nu me-i (?)

15. rišpišuš kima šam-ru-še ša-GAšli kima šam-ri-im

(C) Pl. 33, S. 796, 6 (probably):

[šam-ra-ri-a-nu] šam-TAR-M[UŠ]

(D) Pl. 46, Rm. ii, 203, rev.:

7. šam-ra-ri-a-nu šam-ra-ri-a-nu
   šam-TAR-MUŠ
   šam-TAR-MUŠ
   šam-ra-ri-a-nu

(E) VAT. 9000:

šam-ra-ri-a-nu šam-TAR-HU

Note the following in the VM.:

šam-sah-lu-u šam-TAR-MUŠ

| ina lā šaH-PAR šā DAR bal-lu
| ina " , bir-miš "

and compare the variant Mat. 88, i, 36 and 38:

[šam-ZAG-BI]-LI-ŠAR šam-TAR-MUŠ

| ina lā šaH-UŠ šā DIR šaR-šaR
| ina lā šaH-PAH šā DIR šaR-šaR

paralleled in Mat. 88, ii, 14:

šaH(?)-la-a-nu šam-TAR-MUŠ

| ina lā UR-MAH-UŠ šā DIR šaR-šaR

for which Pl. 42, K. 274, 30 gives (restored from Meek, RA. 1920, 181):

[šam][šaH(?)-la-a-nu] šam-TAR-MUŠ

| ina ZAL-LU UR-KU šā . . .

Obviously there is some discrepancy in the texts; e.g. in the latter case we have lā of "male lion" quoted against ZAL-LU of "dog"; and hence this may explain why šam-TAR-MUŠ in one case is to be mixed with "fat of a white pig mixed with red" (DIR, and DAR, Deimel, No. 113, 12), or "fat of a white pig mixed with two colours" (bir-miš = DAR, Deimel, No. 114, 5).

šam-šaR-šaR occurs in VM. thus: ("in the spittle of a dog"):

šam-ra-ri-a-nu šam-TAR-MUŠ

| ina ru-ul kalbi

(Pl. 10, r. 8 : Pl. 28, K. 4140, A, ii, 10 : Mat. 88, 2, 29)

It is separated from šam-TAR-MUŠ by a gap of about 75 entries.

In MT. these plants occur thus:

1 There would seem to be every probability that gu has the value MUš in this word. MUš has the value MOŠEN and it will be seen that šam-TAR-gu is used in MT. where šam-TAR-MUš is usually found.
(1) šamImḥur-pani, šaminḥur-ašrá, and šamTAR-MUŠ, each separately:

(a) šamImḥur-pani: ext. Head, alone, AM. 5, 2, 7: probably for gurastu (itch), alone, bray, anoint, AM. 17, 1, 4. Eyes, šaminḥur-pani alone in hīmetu-ghee, [anoint], AM. 13, 7, 6. Scorpion-string, bray and apply in oil alone, AM. 91, 1, 7: scorpion-string, on the “burning place” (BIL, cf. l. 22, for a burn), alone in kurunnu-beer, Pl. 23, K. 9283, 15.

Int.: Snake-bite, drink alone in beer, AM. 92, 7, 8. Strangury, bray alone, drink in beer, AM. 59, 1, 30: drink in wine, alone, KAR. 203, i, 25. Stomachic, alone, drink in beer, Kū. i, ii, 9: alone in wine, Kū. ii, i, 17. For ṯunu (bowels), bray, drink alone in kurunnu-beer, KAR. 203, iv, 52. Childbirth, with uterine trouble, after application (?) to uterus of boiled cynoglossum and Solanum, the woman to drink šaminḥur-pani alone in wine, KAR. 195, r. 18. To stay menses (varying with šaminḥur-ašrá, also alone), bray alone in beer, KAR. 194, i, 37. Ḥimit urri (“heat of the day”), bray alone and drink in kurunnu-beer, KAR. 203, i, 58.

Suppository or enema: ½ qa (perhaps without others) for some anus-trouble, AM. 50, 6, 13 + 95, 3, ii, 14 (RA. 1929, 75 (19)), read “by his anus thou shalt introduce” (si-sā = ešēnu).

(b) šamImḥur-ašrá (of this plant it is said that “it allows no poison to approach the body”, Thureau-Dangin, RA. 1921, 169):

Ext. “Lassitude” (“poison and lassitude and shrinking of the flesh”, which are mentioned in a collateral affection, suggest an indolent ulcer), anoint with hīmetu-ghee alone, AM. 52, 5, 12. Uncertain use, for a man bewitched, bray alone (šaminḥur-aš-LA), AM. 85, 1, ii, 3.

Int.: Jaundice, drink alone in beer, Kū. iii, iii, 15: for ṯunu (bowels), bray and drink alone in kurunnu-beer, KAR. 203, iv, 53.

(c) šamTAR-MUŠ: ext. bad breath (bušānu) probably alone, AM. 23, 1, 7.

Int.: for ṯunu (bowels), bray, drink alone in kurunnu-beer, KAR. 203, iv, 53.

(2) šamImḥur-pani, šaminḥur-ašrá, and šamTAR-MUŠ together without others:

Int.: “If a man’s epigastrium is drawn up (?), his middle (pelvis) (and) minatu (limbs) hurting him” [šamTAR-MUŠ (?)] šaminḥur-pañi šaminḥur-ašrá in squeezed grapes drink, [bathe] in water of Vitex, AM. 43, 6, 1: “anus-trouble,” stomach, šamTAR-UŠ . . . , doubtless for šamTAR-MUŠ, with the other two, bray, drink in beer, AM. 57, 5, 10 (dup. 43, 5, 11-12). Uncertain affection, after elaborate poulticing, drink all three in oil, AM. 29, 5, 10.

(3) šamImḥur-pani, šaminḥur-ašrá, and šamTAR-MUŠ with others.


Int.: Stomach, pound and drink in beer, AM. 39, 1, 42: drink in kurunnu-beer, AM. 76, 1, 12, j: drink, AM. 42, 5, 5: 87, 1, 10. Strangury, anus-trouble, AM. 40, 5, iii, 20 (prob. 16): strangury, AM. 59, 1, 33, 35: 60, 1, 9 (perhaps all three drugs), 13 (ditto). For “middles” (pelvis)
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AM. 52, 6, 6 (perhaps all three drugs). Hand of Ghost, in wine drink, AM. 97, 6, 2: with šam-TAR-ḪU instead of šam-TAR-MUŠ, pound, sift, drink in either wine or beer, AM. 76, 1, 8: with šam-TAR-ḪU instead of šam-TAR-MUŠ, ib. 17 (bray, drink in kurunnu-beer): ditto, ib. 20 and 24 (drink in beer), and prob. 27. Hand of Ghost (temples), drink in tamarisk-water, AM. 14, 5, 3 (probably all three drugs). Sorcery, drink in wine or beer, AM. 89, 1, 1 (perhaps all three drugs).

Fumigation: Ghost lying on a man, AM. 99, 3, 10 + 50, 6 (dup. AM. 33, 3, 13: KAR. 182, r. 14, and probably AM. 82, 4, 8).

4 (a) šam-IMḫUR-pānī with other drugs:

Ext.: Head, †, bathe in water and anoint, AM. 6, 5, 5. Tooth (KA-DIB-BI-DA), †, AM. 78, 1, 12: with anemone in BI... (beer), AM. 23, 2, 8 (dup. 73, 1, 20). Stomach, †, in oil, anoint, AM. 52, 4, 4, cf. KAR. 157, 1 ff. Scorpion-sting, †, anoint in cedar-oil, AM. 91, 1, r. 8. Pain, †, in oil, AM. 16, 14, 13, dup. 55, 8, 4, and 64, 1, 22 (R.A. 1929, 70). Ghosts, †, bind (aš-su), AM. 29, 1, 4, 5 (joins Col. iv of K. 2173, CT. xxiii, 22). Hand of Ghost, †, ointment, AM. 94, 2, ii, 14: ghostly seizure, with mustard, hellebore, and šam-IMḫUR-ašrå, bind on, hang on neck, KAR. 56, r. 11.

Int.: Too much saliva, †, AFO. i, 36, 10. Strangury, †, drink, AM. 59, 1, 15: drink in squeezed grapes, ib. 26. Lowns, bad dreams, restlessness (= "choking of the passage", i.e. strangury), AM. 31, 1, 6 (+ 59, 1). Impotence, †, bray, sift, drink in wine for three days, AM. 88, 3, 4 (cf. AM. 66, 1, 11) (cf. Liebesz. 56, 1). Hand of Ghost, †, drink, in beer, AM. 76, 1, 23. To stay menses, with one other, drink in beer, KAR. 194, iv, 36. Enema: 7 grains with šam-NU-LUḪ-HA (Asafetida), bray and introduce by mouth and anus, Kū. 1, 1, 32.

(b) šam-IMḫUR-ašrå with others:

Ext.: Ghosts, bind on (aš-su), AM. 29, 1, 4 (joins Col. iv, K. 2175, CT. xxiii, 22): Seizure by Ghost, with mustard, hellebore, and šam-IMḫUR-pānī, anoint, bind on, and hang on neck, KAR. 56, r. 11: against Lamasstu, †, see Thureau-Dangin, RA. 1921, 164, 10). Weak beard, rub cheeks, CT. xxiii, 36, 51.

Enema: AM. 53, 9, 10.

(c) šam-TAR-MUŠ, with others:

Ext.: Eyes, with šam-DIL-BAT in equal portions in himetu-ghee, nigungu... . . . . , AM. 8, 1, 32. Ghost, bind on (aš-su), AM. 29, 1, 5 (joins Col. iv, K. 2175, CT. xxiii, 22): anoint, AM. 97, 4, 14: Hand of Ghost, anoint in oil (v. cedar-oil) and hang on neck, AM. 95, 2, iii, 10.

Int.: Breast hurting, epigastrium pressing, lungs sick, with 6 others (perhaps including šam-imḫUR-pānī and šam-imḫUR-ašrå) drink, in beer or wine, AM. 48, 4, r. 9. Stone, drink in LÜ-TIN-NA-beer, AM. 89, 4, r. 3.

One šū in oil and cypress-oil with 17 others in small quantities, a "Royal Treasure" (i.e. a Basilikon), as enema, AM. 41, 1, iv, 26, definitely without šam-imḫUR-pānī and šam-imḫUR-ašrå.

Now, although we have many values given for šam-ŠI-ŠI and šam-ŠI-MAN in VAT. 9000, not one of these give us a satisfactory hint of what the (probably) correct reading of these plants is in Assyrian. For an early reading of the first element šī as imḫur see Zimmern, Z.A. 1914, 69: Landsberger, ZDMG. 1920, 445, and for the whole plant in both cases, E. xiii, 136, n.8, and Thureau-Dangin, RA. 1921, 164. They occur
actually spelt out in *MT.* thus: \(\textit{samim-hur-\textit{\texttt{sh}}} \), \(\textit{samim-hur-as-ra} \) (AM. 42, 5, 5–6); \(\textit{samim-hur-\textit{\texttt{sh}}} \) alone (AM. 13, 7, 6: 59, 1, 30); \(\textit{samim-\textit{\texttt{sh}}} \) alone (AM. 13, 7, 6: 59, 1, 30). Incorrectly, \(\textit{samim-hur-as-la} \), AM. 85, 1, ii, d, see p. 122. The three are constantly used together, and \(\textit{samim-hur-pani} \) is used alongside \(\textit{samim-hur-asra} \) nearly half a hundred times out of its (approximately) 113 occurrences.

1. The first, \(\textit{samim-hur-pani} \), "it-presented-the-face," is from its name some kind of Heliotrope which turns its face to the sun. I had thought in *AH.* 89 that it was more probably *Calendula officinalis* L., the marigold, rather than the Heliotrope proper; but I am now inclined to see in it the *Heliotropium Europaeum* Benth. (which I saw at Mosul, kindly identified for me by Dr. Rendle). In modern medicine, Heliotrope (of which there are more than a dozen kinds quoted in *FP.* 2 ii, 220) is prescribed in India \(\textit{int.} \) for snake-bite, and \(\textit{ext.} \) as application thereon (IMP. 863, *H. Eichwaldi* Stend., like *H. undulatum* Vahl). \(\textit{Int.} \) (ib. 864), for scorpion-sting, drunk and smeared on (*H. magna*, Diosc. iv, cxc), as also in India (leaves of *H. Eichwaldi* boiled in castor-oil said to relieve scorpion- or bee-stings, or the bite of a mad dog, *IMP. ii.*, 863). *H. Eichwaldi* is also used in India as emetic, and for cleansing and healing ulcers (ib.). Again, *H. magna* (Diosc. ib.) prevents conception, and is used in fevers, as emmenagogue, and in childbirth: *H. strigosum* Willd. and *H. rivealorum* Wall are used in India as laxative, diuretic, for suppuration, and for sore eyes, gum-boils, and stings of nettles and insects (IMP. ib.; *H. villosum*, in Palestine against a disease called *sammuq* (PJ. i, 297).

The uses are thus very numerous, and those given in *MT.* for \(\textit{samim-\textit{\texttt{sh}}} \) (im\(\textit{\texttt{sh}}\)-p\(\textit{\texttt{sh}}\)) coincide at least in its being drunk alone for snake-bite, childbirth, and strangury (it is used, however, to stay menses, not as emmenagogue), and \(\textit{ext.} \) for scorpion-sting, itch, and eyes. At the same time there is no little similarity in the use of *Calendula*, the marigold, which "opens its face" during certain hours of the day. The flowers of this are the only parts used (P. 295) for sprains and bruises \(\textit{ext.} \) and \(\textit{int.} \) for amenorrhoea: in the older medicine (*HS.* ff.) it was used for stings, bites, ear-trouble, sores, ulcers, bilious disorders, and menses. *IB.* 30 says of this (the *adri\textit{\texttt{yaun}}*), that it is a plant which turns with the sun, and closes its flower during the night. *Calendula officinalis* L. was seen at Masjid-i-Bardi (Shiraz) and *C. Persica* at Qala\'an Sherghat (Hersfeld, *Beih.* 35). Ainsworth (T. ii, 177) mentions the former in the Hadhr district.

The species of Heliotrope in Syria-Palestine are numerous, as are their Arabic names (see *FP.* 2 ii, 229 ff.). The Cuneiform names are equally numerous, but not always intelligible. For instance, \(\textit{samim-\textit{\texttt{sh}}} \) \(\textit{li-[\textit{mJe}} \) may have a reference to \(\textit{\texttt{sh}} \) in its value of "a thousand", as also has the word \(\textit{lemu} \) (BAG. 156), but "it freed a thousand" is hardly a reasonable name. \(\textit{samim}\textit{\texttt{sh}} \) \(\textit{imti} \) may be the right reading (p. 120, i) "drug for poison", i.e. snake or scorpion: \(\textit{samim-busallibu} \) looks much like \(\textit{samim-\textit{\texttt{sh}}} \), an equivalent for \(\textit{sam-im\textit{\texttt{sh}}} \), ib. 2). \(\textit{samim}\textit{\texttt{sh}} \) \(\textit{Mamit} \) perhaps = "tabu-plant".

A curious equivalence is given in *BRP.* iv, 37, 6 (*JRAS.* 1924, 453), \(\textit{samim-hur-pani} \) \(\textit{kinma} \) \(\textit{gir-pad-du} \) \(\textit{nam-lu-gal-lu} \) "like human bone".

\(\textit{samim-hur-pani} \) is used in *Maql\(\textit{\texttt{d}}\)* vii (see Scheil, *RA.* 1925, 155, r. 10), with a more than usually bad pun:

1. *Ku.* i, iv, 52, quoted with a query by Landsberger, gives actually \(\textit{samim-hur-\textit{\texttt{sh}}} \).
&s; Inhur-pāni li-ḥa-ṣa li-ṣa-ṣa
"May ḳeḥur-pāni smite her cheek."

One interesting use of the &s;Imhur-pāni shows that its characteristic of turning its face to the sun led to its adoption in sympathetic magic as a charm to induce a favourable glance towards the wearer: in BBR. No. 11 ff., 2 ff., and 14 ff. (cf. also No. 75–8, 15) a seer who, to scry for the king, is to bathe, anoint himself with &s;iman Bar-qa (refined oil) in which &s;Imhur-pāni has been put, put on clean clothes, etc. Obviously it has a scent, and H. suaveolens, being highly fragrant, would fit, while as IB. 30 says, Calendula has no smell.

Its synonym &s;im-is-kur or &s;im-is-kur is obviously to be read thus from the bad pun in Thureau-Dangin, RA. 1921, 155, 20. &s;im-is-kur mu-sak-ki-ru ša pi-ki-na.

2. &s;Imhur-aṣra, apparently "it-presented-20", the second component being a translation of the sign MAN, and therefore presumably "20", although the form should be eṣrā and not aṣra.

The first indication of its identification is to be found in BRP. iv, 37, 7 (JRAS. 1924, 453): &s;Imhur-aṣra kima šaruru "Ištar šaniš &s;Imhur-aṣra kima šamiš šir-ša kima šiguṣṭi "the imhur-aṣra is like the "brilliance of Ishtar ", or the imhur-aṣra is like the Anacyclus pyrethrum, its seed like šiguṣṭi ". Anacyclus pyrethrum may be described as having a yellow, daisy-like flower; the "brilliance of Ishtar" suggests the rayed star which is her emblem. While šiguṣṭi is uncertain, therefore, we may look for a yellow daisy-like flower, with great healing characteristics.

I am still inclined to think that my suggestion in AH. 91, that it might be the Chrysanthemum segetum L., or similar, is near the mark. Its yellow colour may be indicated by its use for jaundice, on the principle of the doctrine of signatures. The Ch. coronarium L. ("Goldblume"), called in Syriac "en tōrā "ox-eye", and "en 'eghēd " calf's eye " is similarly bōvβaλμον (FJ. 1, 370): the two Assyrian names &s;amirri nāmī "fish-eye ", and &s;amirri kalbī "dog's eye " (p. 120), parallel the Syriac: it is certainly similar to the &s;amSi-SI, since the names &s;amSi-ŠI-KUR and &s;amSi-KU are synonymous for both (p. 120, ll. f, k, bb, cc). Its name "It-presents-twenty " (if this be the translation) suggests its numerous petals. The Ch. segetum grows in Palestine in "enormous masses" (FTP. 10: cf. FP. 2 1, 60. It has been supposed to be the helichry sos ("gold-sun ") of Pliny (NH. xxvi, 55, n. 61: xxi, 96), but Pliny says that it grows in "shrubberies " . He prescribes it as diuretic and emmenagogue, and drunk for the stings of serpents and pains in the loins, and used ext. for burns. The C. coronarium L. is said to be a tolerable substitute for chamomile (IMP. 695).

A curious pun (as it must be) occurs in Thureau-Dangin, RA. 1921, 165, 22, &s;amSi-ŠI-MAN ša la ṣa-gar-ra-bu ru-ḥi-e which at once suggests that &s;amSurban eqli " chamomile " (p. 118) is a synonym of &s;amSi-MAN.

3. &s;am-Tar-Muṣ has long been compared to the Arab. tarmus, the Jud.-Aram. ṭarmūṣā, the Syr. tarm̄sā, the Greek tēp̄mos, Lupinus termis Forsk., FJ. ii, 454 (Fonahn, OLZ. 1907, 640). The equivalence &s;amSurvarianu (although, as will have been seen from p. 121, there is just a slight doubt), which is to be compared to the Syr. 'aṭ̄̄r̄ānā, onobrychis (FJ. ii, 466),
would make the value "lupins" practically certain. According to Löw, *Ar. Pafl.* 394, Chwolson, *Altabab. Lit.* 87, Anm., says that *trmiša*, "a kind of corn," was brought by an old Babylonian king from the land of the Ionians.

The lupin (horse-bean) is one of the Papilionacere, having its seeds in a pod. The seeds have been used in poultices, or in lotions and fomentations (LPG. 284). The white lupin (BMM. 278) is prescribed as stomachic, diuretic, anthelmintic, emmenagogue, and locally for bites and swollen glands; in ancient times the lupin was used in fomentations for ulcers, gangrene, etc., and for scabies in sheep, and internally as emmenagogue and to expel the fetus; the root was diuretic (Diosc. ii, cxxxii). It is eaten in Egypt, after being cooked in salt water (FJ. 461). *IB.* s.v., gives numerous uses of this in medicine.

The description of it in (B.), p. 121, is apt: "šantur-muš in ... its heads like beans (urus) ... like fennel" (I am not clear what ḫ-a-ga means). Similarly the equivalence in (D). a-[u(1)-šu(2)] "beans" may be correct for the synonym šamarraniu.

The Syr. *'ar'ārinā, Onobrychis*, as *Hedysarum Onobrychis* L., is admirable in comparison with lupins, but that it is not the same exactly as šantur-muš is clear from the interval between the two in the VM. (p. 121). So far as I know šamarraniu occurs twice only in MT., Kū. ii, iii, 10, where the editor has recognized a difficulty and has glossed it šammirgirānu: Šumma liḫu ṣāmu-ra-ma ši-[šā]-gāš-la šamšē-qa ši-šā-gāš-la šam-šē-kam ši-šā-gāš-la šam-ma-ra-ri-ta-ru (glossed šammir-ri-ra-a-ru) ... 90 (?) (= I-ES) šamši-kan-ri liḫu mal-ma-liš taza ina HULU-TIN-NA NU pa-tam išatti-ma ina KU-SI tešir-ma iabal.1 That it occurs so rarely, and even then, shows that it had little use in medicine, as we should expect of lupins.

šamšu matqu "sweet plant (drug)", another equivalent, will represent the word "sainfoin". It occurs in a ritual in which the plants mustard (for yellow), hellebore (for black), šammu matqu (for white), Asa mumta (for brown), beetroot (for red), and cress (for green) are to be pounded (KAR. 73, 11).

*BRP.* iv, 37, 6 (JRAS. 1924, 453) gives a curious comparison, šantur-muš: ki-ma isīd si-ila-ga "lupin: like the root of turnip". If it had meant the root of the lupin we should certainly have had this added exactly; but, on the other hand, the similarity between the lupins and turnips is apparently only in the boiling of them (see p. 51).

In (B.). l. 13 (p. 121), the group šamša-muš šig-ša-ša-R-A must surely be an abbreviation for šamša-muš šig-ša-su-ša-R-A "the hairy plant", a good description of *L. termis* "silky-villous" (FP. i, 298), but still better of *L. pilosus* Murr. "hirsute", or *L. hirsutus* L. "covered with spreading rusty hairs" (ib.). Indeed, the sainfoin (Onobrychis vulgaris = Hedys. Onob. L.) has stems which are covered with fine hairs (EB. xith ed., xxiii, 1010), "appressed hairy or glabrescent" (FP. i, 411).

VII

PURGATIVES (ALOES, RICINUS, LICORICE)
Purgatives (Aloes, Ricinus, Licorice)

A. šamšiburu, Aloe vera L., aloes.

CT. xxxvii, 28, 108860, i, 7-11:

| 7. [šam mar-tu] | šamši-bu-ru |
| [šamAD-KUN] | šam ditto |
| [šamUR-N]-BAD | šam ditto |
| šam ditto ina šu-ba-ri |

11. [šamUR-N]-BAD

šam ditto ina māt Kat-mu-ḫi

VAT. 9000:

| šam mar-tu | šamši-bu-ru |
| šamAD-KUN | šam |
| šamUR-N]-BAD | šam |
| šamši-bu-ru | šam |
| [šam ni]-siq (or pik) šadalti |

Add here Pl. 35, 79-7-8, 187, obv. 9 ff.:

| šam | šam | šam | šam | šam | šam | šam | šam | šam | šam | šam |
| šamUR-N]-BAD | šamUR-N]-BAD | šamIM | šamBI |
| šamUR-N]-BAD | šamUR-N]-BAD | šamIM | šamBI |
| šamUR-N]-BAD | šamUR-N]-BAD | šamIM | šamBI |
| šamUR-N]-BAD | šamUR-N]-BAD | šamIM | šamBI |
| šamUR-N]-BAD | šamUR-N]-BAD | šamIM | šamBI |
| šamUR-N]-BAD | šamUR-N]-BAD | šamIM | šamBI |
| šamUR-N]-BAD | šamUR-N]-BAD | šamIM | šamBI |
| šamUR-N]-BAD | šamUR-N]-BAD | šamIM | šamBI |

šamšiburu,3 identified with the Syr. šābrā, Arab. šabr, aloe. FP.2 ii, 659 gives Aloe vera L. (Arab. šabr murr “bitter šabr”) as occurring in Baysan, Irbid to Buṣrah, Jaffa, and ʿArish ut-Tih. P. 116 prescribes A. Barbadensis and A. Socotrina as purgative and emmenagogue, and Olivier, Travels i, 119, says that the aloe is used as a pessary to hasten conception.

In MT, šamšiburu is prescribed:

For strangury, †, [drink], AM. 59, 1, 36. Stomach, alone, drink in

1 Not clear on tablet, but probable from the parallel above.
2 Cf. V M., MA T. 88, ii, 28; Pl. 10, vi-v, 7: Pl. 28, K. 4140, A. (ii), 9; "ši-bu-ru | ina ni-siq (or pik) šadalti.
3 I think that Meissner, ZA. 1894, 277, was right in doubting the equivalence of our word šamšiburu, with the similar šamšibaru. The omen “If the hair of his head stands erect like šibari” (Bezold, Cat. K. 3860, ii, 371) might perhaps suggest a comparison with Lane, Diet. s.v. šabr, “the leaves are like the sheaths of knives,” but Meissner’s quotation from K. 50, i, 29 shows that there is in reality no connection: eglš šarrar zēr-šu inaqar tisurē wakalš ši-ba-ru ʾa-ʾat-šši, er soll das Feld beackern, sich um die Saat kümmern, die Vogel wegfangen und den šibaru aufsammmeln ("und vernichten") (see Landsberger, Ana Ilttišu, 54, 47, “er wird das Feld graben, seine Saat hüten, die Vogel vertreiben, das Unkraut jätten.” Šibarium occurs in a vocab., CT. xii, 15, 15.
sweet milk, *Kū.*, iii, i, 35. Uncertain, but along with šamgiranu, Ricinus, šamallumza, etc., drink, *AM.* 22, 5, 7. In the form šam marši, drink alone in *kurrumnu*-beer, Scheil, *RA.* 1916, 33, 18: cf. *KAR.* 203, i, 30 ("ditto in beer"). This last suggests that in *VAT.* 9000 it may be either "drug of bitterness" or "drug for bile".

The mention of it in *Subari*, Katmuḫ, and the Kassite country indicates a popularity not shown in *MT.*, and the interesting piece of folklore in the description šam nisik ṭadāti "plant for the adornment (†) of a door" shows that the custom of hanging aloes over the door which obtains in Cairo (Lane, *Manners,* 263) goes back to very ancient times.

B. šam AG-PAR, šam AT-KAN, šam šagabegalzu, Ricinus, castor-oil.

(A) PIs. 22 + 32, K. 267 + 4180, B + 6069, vi–v, 43 ff. :

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| šamšá-mu salmu | šam AT-KAN |
| šamšá-mi šiši salmi |
| šamšá-ga-bi-gal-zu ut-liš |
| šamšá-ga-bi-gal-zu ut-liš |
| šamšá-ga-bi-gal-zu |
| šamša(?)-ar ši-šu-ur-gu ti-gal-zu |
| šam šu IM-BUR |
| šam šu IM-BUR |
| šam šu IM-BUR |
| šam šu IM-BUR |
| šam šu IM-BUR |

(B) Smith, *CT.* xxxvii, 32, No. 108860, iv, 15 ff. :

| šamšá-mu salmu | šam AT-KAN |
| šamšá-ga-be-gal-z[u] ditto ša Elamtiši |
| šamšá-ga-be-gal-z[u] šu ditto ša Akkadki |
| šam ša IM-BUR ditto ša Akkadki |
| šam ša IM-BUR ditto ša Akkadki |

(C) Smith, *CT.* xxxvii, 27, 108859, ii, 29–31 :

| šam LUL—AZ | šam AG-PAR |
| šam šu IM-BUR [PI—PI (?)] |

It occurs thus in *MT.*:

(a) šam AG-PAR :

(1) Simply: Ext.: *Head,* itch, †, bray, [apply], *AM.* 5, 5, 4 (are we to supply the words "in oil", or are the drugs enough by themselves ?).

1 *Cf. CT.* xli, 43, No. 59586, r. 2, ... *ni(gig): šam AG-PAR.

2 šam LUL—AZ is given as = šam, (i.e. šam imḫur-paši), in *VAT.* 9000, which may have a parallel in S. 796, 9 (PI. 33), šam LUL—AZ (division mark), šam imḫur-paši.

3 Note the three spellings, šam šagabegalzu, šam šagabegalzu, šam šakabegalzu (see p. 131).
For “dry” head and weak hair, †, in water bind on, CT. xxiii, 34, 23, dup. KAR. 202, 2, 14. Temples, bind on, CT. xxiii, 41, 17. Head-lotion, †, AM. 3, 5, 9. Ears singing, †, in cedar-oil on wool insert, AM. 33, 1, 24. Feet (“soles split”) alone, dry, bray, bind on, AM. 75, 1, iv, 21: some trouble with feet, alone, bray, apply, AM. 74, iii, 4. “Swollen” stomach, †, anoint in oil, AM. 54, 4, 5. “Poison” of flesh (limbs), † (?), in oil of Acorus calamus, [apply], AM. 92, 4, 10 (cf. obv. 4, with niqbitu and others (?) in cedar-oil anoint, see RA. 1930, 130). Hand of Ghost, †, anoint in oil, AM. 94, 2, ii, 12 (see JRAS. 1929, 806): anoint, †, AM. 97, 4, 3: anoint, †, in cedar-blood, KAR. 56, 7: †, bathe, AM. 94, 4, ii, 9. Blains (siggati), †, AM. 32, 5, 10. Swelling, †, [apply], AM. 100, 3, 20: poultice, †, AM. 96, 1, 3. Ebeling, MAOG. v, 3, 5, with iṣamimḫur-pāni, anoint a woman in ritual, in oil. Bruise (dikṣi), †, uncertain use, AM. 96, 1, 3.

Int. : Apparently foetor in mouth, alone, drink, AM. 36, 2, 10 + 26, 9, ii, 2 (PRSM. 1926, 65). Eyes, alone, after poultice, AM. 18, 2, 7 (joined to 16, 3 + 12, 3 + 13, 1 + 19, 6, PRSM. 1926, 40). Stomach, apparently alone, drink in beer, AM. 48, 1, 5: alone in kurūmmu-beer, AM. 48, 3, 5 (RA. 1929, 78): †, AM. 45, 6, 13. Heartburn, †, drink, AM. 39, 1, 31, 36, 40: AM. 40, 1, 47 (RA. 1929, 49 ff.). “Congestion” of lungs, †, [drink], AM. 53, 4, 17 + 63, 6, 13 (cf. PL. 48, Rm. 328, r. v, 3). Urinary trouble, †, drink either in squeezed grapes, or beer and refined (ḥalsû) oil, KAR. 193, 4. Dysentery (“when a man pours blood by his anus”), with styptics, [drink], KAR. 191, 2, 14. Some form of jaundice, with scammony (ḥil li-tar) and iṣampar (sarbatu-gum, nitre) drink in oil and beer, Kū. iii, iv, 3.

Enema : Quantity, 1 šu, †, perhaps enema, AM. 41, 1, iv, 26.

(2) Seed : Suppository with fat, †, KAR. 201, 43. As a šam aṣī (appetizer), PL. 29, K. 4566, 11.

PL. 48, Rm. 328, r. v, 9, gives it as one of nine drugs for ša-gig, which can hardly be a pun on ša-gig (“sick stomach”) (stomach-ache); it looks rather like some definite, well-expressed stomach-trouble. The other eight drugs are iṣamṭar-ḫu, iṣamṭur-pāni, [iṣamṭur-āṣru (?)], root of iṣam ḫalāppānu, root of šam..., iṣamrim, iṣamḥašṭu āṭī, and iṣamkaran šēlībī.

(b) ṣamṣagbeqalzu, ṣamṣagbeqalzu:
Sick tūši (bowels), bray and drink alone in wine, KAR. 203, iv-vi, 49. Strangury, †, in strong wine [or...], AM. 59, 1, 36 (iṣamṣáka-be-gal-zu). Uncertain, †, drink, AM. 22, 5, 6.

(c) iṣamāt-kan :
(1) Simply : Ext. : Eyes, probably, †, prob. AM. 14, 1, ii, 6. Poultice, for pelvis and buttocks with roast corn in beer-yeast and oil, AM. 61, 2, 11.

(2) Seed : Ext. : for obtaining offspring, bray alone, mix with..., and beer-yeast, and put in uterus, KAR. 203, i-iii, 19.

Int. : Lungs, bray, “let his tongue take,” †, drink alone in oil, KAR. 203, iv-vi, 25: lungs (?), †, drink, AM. 51, 7, 5 (+ 84, 2: see RA. 1934, 24).

(3) še-rū : Cough, †, poultice, AM. 50, 3, 3.

Here, with several of these various synonyms (which altogether occur

[1 See RA. XLI. 109 ff.]
about sixty times in *AM.* we have a drug used: (a) simply, (b) seed, and (c) ṣe-ṝṭ̄, the general employment being ext. for eyes, ears, head, sore-foot- 
soles, itch in head, falling hair, swellings and blains, cough, and even by 
local application to the uterus to encourage conception: int., to drink 
for bowels, strangury, stomach, heartburn, urinary trouble, and dysentery, 
and as enema and suppository. Particularly must its use in *AM.* 3, 5, 9 
be noted: presumably after binding a mixture on the head, "ṭamAG-PAR 
and salicornia alkali in warm water wash his head," obviously a soap.

From this latter ṭamAG-PAR is obviously the *Ricinus* (*AH.* 191).
Pliny, *NH.* xxviii, 51, speaks of a soap made of tallow and ashes: in 
Palestine a soap of olive-oil and an alkali is made (Patrick, Hastings, 
*DB.* iv, 553). As the olive is by no means likely in Assyrian texts (*p.* 102) 
we must seek a substitute. *Ricinus* would exactly suit the contexts above, 
the only objection perhaps being that we have to understand that its oil 
is intended, without any definite statement to that effect. Not only are 
the medicinal uses coincident with those of *Ricinus,* but also the use of 
the inferior qualities produced from this plant in making soap (*BMP.* 
No. 237: *FHP.* 571).

The plant is common in Mesopotamia to-day. It is cultivated all over 
Kurdistan (Rich, *Koord.* i, 135); it occurs plentifully in Tripoli (Rauwolff 
i, 46); for its growth in Palestine see *FP.* ii, 509. It has been supposed 
to be a native of India, but *BMP.* (ib.) suggests that it has the appearance 
of a native plant of the Mediterranean region. The names for it in the 
various dialects are curiously different: Maspero (*Dawn of Civilization,* 
54, n. 2), while giving the well-known name in Egypt as kiki (*Hdt.* ii, 94), 
says that it was called (in Egypt) saqnumu, in Greek transcription *psagdas* 
(with the Egyptian article *p*), the simple form *sagdas* being found in 
Hesychius. *FJ.* ii, 608, gives the old Egyptian as *kaka,* Gr. *kiki,* with the 
Egyptian *dkm* as the plant; the Arab. is *bhurwa,* the Heb. *qqdyon,* the 
Syr. *qerḍa,* and the oldest Sanskrit *eranda* (*CPI.* 915). It is curious that we 
have no cognate in Assyrian to any of these.

The medical use of *Ricinus* in classical authors coincides well with 
our Assyrian drug; *Diosc.* i, 38, prescribes it for scabies and inflammations 
of the fundament, obstructions of the uterus, suppurating wounds, pains in 
the ears, and as of use when added to poultices; when drunk it is 
a purge, and ejects worms. Pliny (*NH.* xxiii, 41) recommends the oil for 
diseases of the joints, indurations, affections of the uterus and ears, and for 
burns, and the application of the leaves for erysipelas, *etc.* *IB.* 771 pres-
cribes it for indurations, the leaf raw or boiled for gout, and the seed 
pounded on a hot stone for cataplasms. More modern usage recommends 
the fresh leaves for arthritis and gout, migraine and, when applied to the 
breasts, as a galactagogue, and as cataplasms in ophthalmia to the eyes 
(*LPG.* 390). In India, castor oil is prescribed for sore nipples, as enema, 
and for eyes (*BMI.* § 91). In Mesopotamia a century ago it was much
cultivated about Mosul, but not used as a purgative; indeed, Rich says he had never met any Oriental who knew this quality of the drug, but the oil was burnt and used for bruises (Rich, Koord. ii, 63). In Egypt the fellahin of Upper Egypt and the Nubians still rub their bodies with the oil which they extract from the common castor-oil plant; it protects them from mosquitoes, and prevents their skin being cracked by the sun (Maspero, Dawn 54). Warren R. Dawson, in Aegyptus 1929, 57 ff., discusses the Egyptian uses of Ricinus. It was used, among other purposes, for making hair grow (53), and its oil for anointing sores (ib.), and Pliny (xxiii, 41) speaks of its being used for itch.

The word "samAG-PAR" suggests "the white AG", AG being (D. 97, 1) apparently "an edible fruit", which might well refer to the castor-oil berry. But the berry itself cannot be said to be definitely white, and if we are to translate PAR thus, the "white" might refer to the transparency of the oil, but even this is not convincing. There are, however, it may be said, two kinds of Ricinus, the Red and the White (CPl. 915), which might permit us, so far at least, to identify the "samAG-PAR" with the latter.

The description "black drug (plant)" may perhaps refer to the undoubted dark colour of the leaves of the Ricinus.

"samBu'su", "the stinking drug," certainly suggests the peculiarly unpleasant taste, so well known to all of us: indeed, Herodotus (ii, 94) speaks of its being "evil-smelling".

It is possible that "samERINU" (p. 242) is a synonym.

C. (sam)(ts)(E-RU)-A, šāšu, Glicyrhiza glabra L., licorice. šāšu was correctly identified by Küchler (Kü. 66) with the Arab. sās, Glicyrhiza glabra f. violacea, Boiss. Licorice grows in the Carchemish district (Middle Euphrates) and in S. Babylonia, in both of which districts I have seen it; Ainsworth mentions it (T. ii, 182) in the Jebel Maklub district, east of Mosul, in June. But the Sumerian išE-RU-A, with its numerous other values which have no special connection with licorice (šerū, nīplu, ziqpu, šīlu, supalu, D. 367, 126) does not suggest an early Sumerian origin for the plant, whereas Pliny (NH. xxii, ii, with Cilicia and Pontus) and Theophrastus (EP. ix, xiii, with Scythia) point to a more northern origin. išA-RU- ?', išA-SUH . . . and išu-šu are also the equivalents of šu-šu (Meissner, MVAG. 1913, 2, 28, 22-4), a text which elsewhere has already contained an equivalent for šāšu, i.e. išE-RU-A, ib. p. 16, 55. 2A-SUH (DACG. 91) is the base of the names for Vitriols, possibly here suggesting an association with the colour of licorice. It does not seem certain that išE-RU prescribed for excess of saliva (AM. 31, 4, 17) is licorice, which would have exactly a contrary effect: the juice, after the root has been chewed, acts on the salivary gland so as to remove thirst (VK. 319).

From this theory of a northern origin arises the interesting possibility, as suggested by Hehn, that in šāšu we have the same word as the German "süss", sweet. Šāšu has apparently no connection with any Semitic root; this "sweet Scythian root" of Theophrastes, along with the Greek γλυκυρρέγα "sweet root" (Dioscur.) and radix dulcis (Celsus, FH. 2, 156), an immigrant in a land where "sugar" was and still is represented by manna (indeed, the Sumerian for licorice, išE-RU-A has also the value supalu "manna"), suggests that we should see a foreign origin in this
word. If so, then (with Hehn) what more probable connection could be found than the Aryan “sweet”, suadeo, ηῦδς, from the Skr. svad, svād, to taste, to eat, to please (Skeat, Etym. Diet., 616), and ultimately the German süß? At what time the root came into Assyria is, of course, uncertain; all that can be said is that it was certainly in use before the end of the eighth century B.C. We might say that the Scythians were coming into contact with Assyria in the last quarter of this century, but it is proper to add that licorice almost certainly must have been well known there much earlier.

It occurs thus in MT.:


(2) PA (tops): ext.: Feet, †, [ext.], AM. 69, 7, 9: feet which cannot walk, †, ext., AM. 68, 1, r. 9: probably sim., †, AM. 69, 2, 7. Stomach, †, poultice, AM. 39, 1, 1 + 79, 5, 1. Swelling, †, bind on “green”, AM. 73, 1, 31 + 18, 5, 5: alone, bray, apply, AM. 74, 1, ii. 16. Lassitude (rimatum), †, bind on, AM. 52, 5, 14. Anus-trouble, †, AM. 58, 2, 7. Poultice, †, AM. 57, 6, 10: 83, 1, r. 25. Apply to affected place, †, AM. 74, 1, iii 5. Venereal, uncertain use, †, AM. 58, 6, 6, dup. KAR. 193, 23.

(3) Root: (various uses); skin trouble (umṣati), †, without a meal, in Bār-Ga-oil, uncertain use, AM. 17, 5, 5. Long diagnosis, †, AM. 22, 2, 12. “Poison,” †, dry, pound, sift, fumigate, AM. 91, 1, 8.

Int.: Stomach, alone in water, drink, Kü. i, i, 8. Jaundice, alone, drink, Kü. iii, iii, 15. Cough, alone in kurrunnu-beer, drink, KAR. 203, iv, 45: †, drink in beer, Kü. i, i, 1.

(4) Seed: To stay menses, with Asa foetida and pine-turpentine drink in beer, KAR. 194, iv, 4. Swelling, †, poultice, AM. 73, 1, 9.

(5) Fruit: †, anoint in cow’s oil, AM. 88, 2, 10.

(6) Uncertain part: Urinary trouble, †, drink, AM. 66, 7, 21.

Theophrastus prescribes the root for asthma, dry cough, and pectoral diseases (FHP.² 179). Pliny’s information is closely allied to that of the Assyrians: among its many uses (NH. xxii, 11) he says that the root when pounded is applied as a liniment for wounds; it is sprinkled on ulcerous sores of the mouth and films on the eyes; it heals excrescences of the bladder, pains in the kidneys, condylomata, and ulcerous sores of the genitals (doubtless some of these latter indicate an internal use): chewed and applied to wounds, it arrests hemorrhage. Internally, the juice is good for the chest and liver, and some say that it expels calculi. He declares, however, that only the root is used. Syriac medicine (SM. ii, 56, 61, 679, 683) prescribes local application as in MT. BMM. 254 ff. says of G. glabra that it promotes secretion of the air passages, quenches thirst, is diuretic and emmenagogue.

Another word for licorice appears to be šillibani (see Behrens, LSS. ii, 1, 90); ABL. 19, 6, ina muḫši kararî ıa šillibani, and ABL. 391, r. 9, pariktu lipriku (let them rub vigorously). It is the Syr. subdānā, dry root of the plant. Ebeling (Tod. 32, 16) reads “[abat ši]libani nišk ubaṭēšu,
[Süss]holz [scheibet] das Tropfen seines Nasenschleimes”, but it is doubtful.

To sum up: Ṣumṣuṣu (Arab. sūs), which is conceivably connected with the Aryan words for “sweet”, indicating its sweet root, glycyrrhiza, is certainly licorice. The use of its PA (tops), root, seed, and fruit in MT. indicates a more catholic employment than in other pharmacopoeias, where the root appears to be the common part used. A second word, not used in MT., appears to be ṣilliḏani.
VIII

POISONOUS AND ALLIED PLANTS
POISONOUS AND ALLIED PLANTS
(Anemone, Buttercup, Darnel, Spurge, Black and White Hellebore)

A. *samgi-rim-dir, samar kaspi, samar hurasi, samnu sabu, Anemone pulsatilla*

L. (and other kinds), Anemone.

Pls. 19, 31, K. 4216 + 4360 + 4586, 3 ff. : 108860, ii, 1–9, Smith, C.T. xxxvii, 30 :

| *samgi-rim-dir* | *sam-tu-ut-tu* |
| *samgi-rim-par* | *sam-[ra]-tu-ut-tu* |
| *samgi-rim-dir* 1 | *sam-ar-ti-tu* |
| *sam bit(?)-ra(?)-ti eqi* | *sam-ar-ti-tu* |
| *samgi-[rim-dir(?)]* | *sam-ar-a-dr kaspi (?)* |
| *sam-a-ar kaspi* | *samnu-sa-bu* |
| *sam-a-ar kaspi* | *samnu-sa-bu [ina šu-ba-r] i (?)* |
| *sam-a-ar kaspi* | *samnu-sa-bu [ina Su-ba-r] i (?)* |
| *samnu sabu* | *samnu sabu ... ut pi* |

Cf. 108859, C.T. xxxvii, 26, ii, 19 :

| *enad [sa-a-ri] (?)* | *a-a-dr hurasi*

and Pl. 40, K. 14051, 4 ff. :

| *sam* | *sam* |
| *sam* | *sam* |
| *sam* | *sam* |

1 108860, par-u : any sign following par in the previous line has been broken away, and the right-hand column is lost.

2 108860 omits this line.

3 108860, ia.

4 Here 108860 reads *samgi(?)-shum-zi = sam ditto*.

5 108860 uncertain.

6 108860 for this line reads *sam-zi-im hurasi ut-tiš* | *samnu-sa-bu ... e-ri-eu* ....

7 *samgi* simply = illurum, ii, R. 26, 4, a : D. 176, 8.

8 Pl. 36, K. 14264 contains some of these names, followed by a group *samgi-nu* repeated five times.
It occurs thus in *MT*:


(b) *iam*Ár kaspi (“silver sheen”): Int.: Strangury, *pa* ár kaspi ša *iam*nušabi mu*-ni* “tops of ár kaspi, of which the name is *iam*nušabu”, Bray alone, drink in beer, *AM*. 59, 1, 32. It occurs also *AM*. 34, 3, 11. It is prob. intended in, e.g., some urinary trouble, alone in beer drink, *Lutz*, *AJSL*. 1919, 80, i, 8: †, introduced by a bronze tube up the urinary passage, and also drink, *ib.*, 81, 36 ff.: *Stone*, †, [drink], *ib*. 82, iii, 87. One of fifty-one drugs to free sorcery, *AM*. 87, 5, r. 10 (cf. *K*. 249, *Boissier*, *RS*. 1894, 142).


\[\text{šam} zi-im kaspi \mid \text{ina ši-e-...}\]

And *iam*zi-im *huraši* occurs also in *VM*. *Pl*. 42, *ib*. 16: *Mat*. 88, 1, 64:

\[\text{šam} zi-im *huraši* \mid \text{ina ši-mu-r[a](zi-e)}\]

(d) *iam*Ár *huraši* : one of fifty-one drugs to free sorcery, *AM*. 87, 5, r. 10 (cf. *K*. 249, *Boissier*, *RS*. 1894, 142). *VR*. 17, 2, 3, gives its equivalent as *nu-*ša*(sa)-ri* (*Pinches*, *ZK*. 1884, 345, made the correction from ša to sa, but ri apparently still stands).


(f) *iam*Gur9, *iam*illuru, the simple *illuru*, calyx (without a colour-adjective), which perhaps should be included here. In *MT*. it is used ext.: Swelling, †, *KAR*. 192, ii, 4. Uncertain disease, anoint alone in oil, *KAR*. 204, 20. Int.: to stay menses, drink, *iam*el-lu-ra steeped in “dust from the *biriš* of a wheel...” in *kurunnu*-beer, *KAR*. 194, 28: alone in beer, *ib*. 30. For a woman sick of *ni-ne*, †, Bray, pour into the urinary

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1 *GAR*-LAL-SAG ... This, as I tried to show in *Bab*. 1934, 129, if it is translated “a poultice for the head” does not coincide with the properties of the drugs which compose it. These drugs, in the main, are those drunk usually for retention (*hišiqti*), the word which occurs in similar prescriptions. I suggest that it means “drugs for binding the head (tip)”, i.e. of the penis, that is, meaning that the urethra is “bound” and that these drugs are to loose it.

(g) *šamGI-RIM-PAR* ("white calyx") is used in *VM*. *Pl*. 42, K. 4140, B, i–ii, 14: *Pl*. 44, K. 4152, i, 38; *Mat*. 88, 1, approx. 62:

*šamGI-RIM-PAR | *ina tisīd . . ."

In the identification of this plant one of the important points is the large number of synonyms for it, indicating a very common native of Mesopotamia. These names are *šamGI-RIM-DIR* = "red calyx": *šamGI-RIM-PAR* = "white calyx": *šamār kaspu* "silver sheen", *šamār hūrasā* "golden sheen" (the ār being the same as the ār in the animal ār īlī "sheen of god", the chameleon, which is capable of changing its colour in a magic way (see *PRSM*. 1926, 17; *DACG*. 189): *šamzīm kaspu* "silver brightness": *šamzīm hūrasā* "golden brightness": *šam(l)īluru sāmu* "red calyx" (for īluru see *PRSM*. 1926, 53). *šamNusabu* possibly connected with the Syr. *waṣīthā* "plant", but hardly likely. *šamGURšu-DIR* = īluru sāmu "red calyx", *šamGURšu-PAR* = īluru pīṣū "white calyx": *šamGURšu-GIG* = īluru šalmu "black (dark) calyx". 2 *šam āše*, apparently called so in Subari (but not certain; normally āše in this connection means either "appetizer" or "anodyne", but *šam āše* may actually be a dialect name).

Probably the anemone (*AH*. 56); the clue lies in the descriptions. Its colours are "red", "white", "dark" (i.e. purple), and its names "sheen of silver", "sheen of gold", and "silver brilliance" show its peculiarities. Compare the description of the anemone in *PC*. ii, 11: "White or purple, or scarlet, or even yellow blossoms . . . As the species generally grow on open plains or in high, exposed situations, their feathery grains produce a singular shining appearance when waved by the breeze." Our words for colour fit admirably, and if we can see in *šamratuttu* and *šamarrūtu* the cognates to the Syr. *rīthāh* "trembling" (cf. the "Willow of Magan", *rutitu*, p. 292) the comparison is still further confirmed. The anemone is common throughout the Near East; I have seen the scarlet anemone growing over a tract a hundred miles long in the spring on the route between Mosul and Nisibin. The colours of the anemones at Beirut are blue, violet, bright red, and "fiery" red, and on Carmel, purple (*FJ*. iii, 118): in Syria-Palestine, white, scarlet, yellow, blue to purple (*FP*. i, 5). The Arabic names are *sağir*, *sağāʾiq*, *laʾīb*, *laʾīb*, and more especially, *A. coronaria* L. is *hamnun al-daulah* (*ib*. 114: *FP*. 2 i, 5) (the Ranunculus asiaticus being *sağāʾiq an-naʾmān al-muhmāth*, at Qalaʿāh Sherghat, Herzfeld, *Beih*. 35). Cf. *FP*. 2 i, 5 ff. (*Anemone bianda Schott et Ky., woods and rocky places in mountains*).

The use of the anemone in medicine corresponds with *MT*. Pliny, *NH*. xxi, 94 prescribes it for pains and inflammation in the head, diseases of the uterus, stoppage of milk in women, and to promote menses. The root, when chewed, is good for toothache. The Magi, he says, recommend that it be gathered at the earliest moment in the year that it is seen, and

1 *GI-RIM = īluru[n], *CT*. xi, 47, iii, 21.

2 Compare *šamGURšu-GIG*, ("yellow" or "green gur") (p. 146).
certain words to be repeated to the effect that it is being gathered as a fever-remedy; it must then be wrapped in red cloth and kept in the shade until needed.

More modern usage is not so catholic; P. 972 says that A. Pulsatilla L. and A. pratensis L. have been tried for dysmenorrhcea, orchitis, and epididymitis, and herein we can see it in MT., as a supposed remedy for orchitis in AM. 40, 5, iii, 18, the recipe for trouble in the scrotum. IB. 1329 says that it is used for dyeing the hair, against impetigo, cataract, and leprosy, and to cicatrize ulcers. Fernie (HS.) prescribes A. pulsatilla for swollen testicles, and LPG. 33 for paralysis, amenorrhcea, syphilis, eyes, and whooping cough.

B. samGesteN-lul-a, karan šelibi, Solanum nigrum L., and/or S. dulcamara L.

It occurs in MT. thus:

(1) Simply: ext.: Eyes, †, bind on, AM. 12, 6, 4. Feet, †, bathe continuously, AM. 69, 2, 8. Effects of wind (blowing on face), bray, rub on alone in oil, KAR. 203, iv, 11. Muscle of neck, with Cynoglossum, anoint in oil, AM. 97, 4, 22. Anus, †, apply, AM. 53, 9, 10. Bowels (tu²) anoint alone in warm himetu-ghee, KAR. 203, iv, 51, dup. Pl. 37, Rm. 357, and cf. Pl. 36, K. 4157, 6. Prob. strangury, †, bandage head [of penis (?)], AM. 60, 1, 6. Stomach which holds heat, bind on alone, AM. 39, 1, 2. Strangury, alone, dried and brayed in water, beer, and oil drink, AM. 59, 1, 31:


Enema, †, AM. 94, 2, 6.

[Catheher], reduce, †, apply, AM. 62, 1, ii, 2 and 11.

(2) Seed: Strangury, †, [drink], AM. 59, 1, 43. Pustules, †, bind on, AM. 7, 4, i, 16. Uncertain, †, 3 grains drink, AM. 90, 1, r. 3ii, 20.

(3) Water: Eyes, †, apply, AM. 11, 2, 28: "while yet green tuhasa, its water in . . . " followed by a use of copper-dust, etc., AM. 15, 6, 5.

(4) PA (tops): Stomach, alone (?), drink in beer, AM. 48, 3, 2, and perhaps PA (alone) drink in beer, ib. 3.

(5) Uncertain part: Gonorrhcea, †, drink in beer, AM. 66, 7, 11.

(There is a curious equivalence samHAR-HAR = samGesteN-lul-a, Pl. 22, viii-vii, 52.)

The samkaran šelibi "fox-grape" has long been properly identified with the Syr. enbai ta'la, the Arab. inab al-dhi'6. This latter has at least two equivalents: (a) Solanum nigrum L. (FP. ii. 379: FJ. iii,
357), a specimen of which I brought from Mosul, this being kindly identified for me by Dr. A. B. Rendle, F.R.S.: and (b) *Solanum dulcamara* L., *IMP.* ii, 891 (so in the Indian bazaars, and to my recollection in Mesopotamia: the dried fruit is known in Bombay as *anab es-salib*, coming thither from Persia, *IMP.* ii, 892). We can discuss these two more fully:

(a) *S. nigrum* L. is a small annual plant about 1 foot to 18 inches high, with purple-black globular berries. Children have suffered by eating them, though they are sometimes harmless to adults (*HPP.* 117). VK. 552 says that the berries and leaves are equally poisonous, but that both Theophrastus and Dioscorides prescribe it for swollen glands, ulcers, eruptions on the skin, and eyes. In India the berries are considered tonic, diuretic, and useful in anasarca and heart diseases; and are used in fever, diarrhoea, eye-diseases, and hydrophobia. The juice is used for chronic enlargement of the liver, as hydragogue cathartic and diuretic, for blood-spitting, piles, and dysentery. The syrup acts as expectorant and diaphoretic, and the Chinese use the juice of the leaves to alleviate pain in inflammation of the kidneys and bladder (*IMP.* ii, 890: *BMM.* 455). It shares the name *'inab edh-dhib* in part of Mesopotamia at least with *S. villosum* Lam. (*Von. Opp.* ii, 381).

(b) *S. dulcamara* L., Bitter-sweet, with purple flowers and scarlet berries. The deleterious principle *Solanine*, found in all the species of *Solanum*, occurs in the stem and leaves of this plant, and the berries are very harmful (see *HPP.* 116). At the same time in India the dried fruit which comes from Persia is used as a diuretic, for syphilis, and for rheumatism (*IMP.* ii, 892). *LPG.* 188 says that the *Douce-amère* is recommended for convulsions, dysmenorrhoea, jaundice, chancres, rheumatism, skin-diseases, and dropsy, the leaves being used *ext.* for ulcers: "*le suc des semences était jadis employé à la composition d’un fard, en honneur parmi les femmes de la Toscane, pour dissiper les taches de la peau*", and then adds "*l’odeur de la Douce-amère attire les renards*". *BMP.* No. 190 says that it is reputed as a diuretic, diaphoretic, and an acro-narcotic poison in excessive doses, and is thought serviceable in chronic pulmonary catarrh, chronic rheumatism, some skin diseases, and cachectic cases. *P.* 480 describes an unofficial use of the dried young branches in cutaneous eruptions such as psoriasis and pityriasis.

A glance at the uses in *MT.* will show how difficult it is to say exactly whether *ismkarun selibi* is one or other or both. It coincides with *S. dulcamara* in its use of seeds, *pa* (tops) and water, *ext.* for ulcers, for eyes, and what were probably the "*taches de la peau*" caused by wind on the face: and *int.* for strangury (as a diuretic), lungs (*i.e.* catarrh), and jaundice. But it is obvious that the *S. nigrum* is a very popular drug in the East, and the uses of the Assyrian drug in *MT.* coincide in prescriptions, *ext.* for eyes, pustules, muscles, rough skin, feet, bowels; and *int.* to be drunk for jaundice, sting, heart-burn, strangury particularly, and gonorrhoea, stomach, and lungs, and its employment in enema and catheter.

C. *isgIRIM, ellib(p)u, Ranunculus bulbosus* L. buttercup.  

1 Variants quoted from Smith, *CT.* xxxvii, 108860, iii, 10–17.
Now, although one line, l. 27, "calyx of the wood which has a red fruit" is against it, everything else points to this being the *Ranunculus bulbosus* L., the buttercup. Indeed, the reasons for this identification appear to me to be so striking that we may omit those other possible equivalences which I suggested in *AH*. 58, wherein I was perhaps led astray by attaching too much importance to the "red fruit" as affecting the whole group. I am disposed now to think that this is an insertion describing a plant somewhat different from the buttercup, although having certain similar properties: it is noticeable that in 108860 *samellibu* is ascribed to this particular plant only "in common speech".

The section in this vocabulary previous to this, dealing with the anemone, describes its red, white, or dark calyx (*illu'ru*); here, in this present section, we have a yellow calyx (*illu'ru*) which at first sight can surely be nothing else than yellow flower of the *Ranunculus*. Indeed, the Assyrian botanist comes very near to the modern arrangement of botanists, who include the anemone among the *Ranunculaceae*; in his case the association is due to the globe-like shape of the flower, with its yellow colour in striking contrast to that of the red, white, and dark (blue) anemones.

Several of his synonyms show his recognition of the poisonous properties of *R. bulbosus* or *R. aris* L., which modern botanists describe thus:

"These Common Buttercups have very powerful and acrid properties, ... Taken internally, the juice or extract of *R. aris* causes an intense inflammation of the digestive organs; and if the quantity has been considerable it acts as a true acrid poison, followed by very serious
results, and it may be, even death... Specimens of the Field Buttercup (R. acris) were subsequently [after more than a year in spirits of wine] given to a class of students in the University of Pennsylvania. A day or two afterwards an intense itching was felt by all who handled them, while the skin between the fingers became red and covered with minute pustules... If the fresh-bruised leaves be applied to the skin, a more or less active inflammation will follow, forming a true blister. Recourse was formerly had to this method in Norway and Scotland, where true cantharides was not procurable” (HPP. 35, 36). According to LPG. 386, R. seleratus L. has the same effect, and is used ext. for rheumatism, gout, headache, and intermittent fevers.

Now all this can be traced in our section: (a) the “yellow calyx” in l. 29 is called “enemy of bread (eating, food”, just as išammellibu is in l. 19 (i.e. “the intense inflammation of the digestive organs”). (b) išammellibu is described as išamšamu tarbu: “a drug for (i.e. to make ?) a swelling” (l. 20), which represents the blistering capacity of the Buttercup. (c) šam ensū, with which we may compare the Arab. hamasa “irritated”. Ranunculus seleratus L. is especially used by beggars to produce or maintain blisters or open sores to obtain sympathy (IMP. 1, 6). (d) šam erimu, erimu being a well-known word for a skin-trouble (Holma, Kl.B. 7): Thureau-Dangin, RA. 1913, 77, gives GUN-A = e-ri-mu, where the Sumerian GUN may represent the different colour of the blistered skin, and A the water collected therein. This trouble is prescribed for in AM. 17, 6 + 18, 8 (PRSM. 1926, 51), ii, 4, the drugs being lost. The cognate is probably to be seen in the Syr. ‘aram, se collegit (aqua) or perhaps in ‘armā, locus asper, and hence šam erimu would appear to mean “a drug for a blister”. (e) šam ku-ra-āš-tu (?) must surely represent “a drug for ringworm” (scab, sore, or itch), a feminine form of kuwaru (cf. Urartu, Uraštumu), a form of scab, especially in the head (AM. 2, 3, 4), treated with Ammi, Lepidium, and others in cedar-oil, and AM. 5, 5, 5, and 10, kuwaru, in the head, while simple kuwaru can be removed by nām-āš-uš-gul, or by rubbing chamomile on the place, or by black alum, or by leek-seed, Ricinus, and šalantu-plant together, ib. 5, 5, 2 ff. In one case (5, 5, 10) the head is to be shaved. PL. 36, 81–2–4, 267, obv. 12–18, is a medical text for removing kuvari (1), or kuvariši (6), the drugs being lost (see also for this, PRSM. 1924, 10). (f) Šam parkadī (maškādī, see DACC. 190) represents some external disease, doubtless swelling or similar. (g) išamA-a-ba ša “enemy of the muscle”, doubtless a drug producing some form of muscle restriction; the same phrase is used of išamPA-pa-pa, a form of opium (p. 227). (h) For ma-az-ma-az I can offer no explanation. (i) išamGI-RI-M here is not marked by the adjective argu “yellow, green”, and consequently is kept distinct from the išamGI-RI-M argu “spurge” (p. 149); on the other hand išamGI-ŠI-Q, “yellow calyx”, is not so restricted (l. 29).

The išamGI-RI-M ša ‘qištī [šā(?)]inbu-shū šamu “GI-RI-M of the wood, of which the fruit is red”, should be easily identifiable, but I have nothing to suggest for it.¹

¹ Tamus communis L., bryony, is possible, but surely it would have been included among the vines.
**samElibu** itself is used in *KAR*. 185, iii, 8, where it does not appear to have an outstandingly medical value. It is, however, described as *sam aši*, one of the drugs for pain (*Pl*. 29, K. 4566, 9; a slice of the corm of Buttercup (*R. bulbosus*) is used for toothache (*PP*. 27). The cognate in other Semitic languages is difficult to find.

Ainsworth (*T*. ii, 132) mentions the *R. asiaticus* in flower at Mosul in March, and also in the Hadhr district in April (*ib*. 176).

To sum up: we have in *samellibu* a plant (following the anemone-section) defined as *samGUR-SIG5* "yellow calyx", *samGI-RIM* "flower on a (high) stalk", *samERMU* "plant (to cause) skin-trouble", with various similar parallels. Of rare occurrence in Assyrian medical lists as *sam aši*, *Ranunculus* seems to fit it admirably.


| *samŠA* (*ŠÁ-LAM-BI*) | šad 3-da-ru | el-meš-tum 3
| *samŠA-SAR* 4-*GU-LA* | i-me 5-iq ka-ru-ru | di-šar-ru: di-šā
| *samŠA-SAR-TUR-RA* 6 | a-ra-ru-ū | dūšul-tum


| *samši-riš-ti* | *samul-[sal-lu-ru]*
| *samšA-LAM-BI-TUR-RA* | *samUL*[U]*
| *samšul-tū* | *samUL*[U]*
| *samšu-lu-tū* | *samUL*[U]*

which *Pl*. 41, K. 8829, prolongs in another section.


*CT*. xi, 45, 7:

*samšu-ul-tum*: *samša-ul-tum*: (*samša-*hi-*[t]...*). Cf. also with above the text on p. 223.

In these quotations, which have an echo of *samararu* in *samarrū*, and the *šulu*-group, I think that we must see drugs which are in some measure similar to, but distinct from, opium. *Dišu* and *dišarru*, to begin with (in spite of their more innocuous meaning of "grass" and "Ægiliops") must be related to drugs with a similar effect to that of opium.

The original meaning of *dišu* is that of the Heb. *dēšē*. Cf. *p*. 3, where *dišu* occurs in the lists immediately after *šamma*, written with the Sumerian

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1 *Pl*. 4 omits this gloss. *samŠA-LAM-BI* = *samni*..., *Pl*. 46, Rm. ii, 203, r. 8.
2 *CT*. xi, 45, 17, 8a.
3 Occurs in a list, Scheil, *RA*. 1921, 5 (no equivalent given).
4 *Pl*. 4, "...
5 *CT*. xi, 45, 18, mi.
6 *Pl*. 4, "TUR-DA."
character SULLIM. Meissner (AJSL. 1931, 189) says: "dišu bedeutet 'Gras' sowie jede 'Futterpflanze', wie seine Synonyma disarru... Thureau-Dangin, ML. vi, Nr. 16, Rs. 50, wiederfindet di-iš eburi 'das Sommerfutter wird bis zum Winter, und di-iš kuṣṣi das Winterfutter wird bis zum Sommer überreich sein'." He also quotes Zimmern, BBR. No. 100, 17: ('es kam hervor di-i-šum Gras, es ist reichlich Überfluss, es spriesst das Samen')., CT. xxxix, 12, 13 ('Wenn im unteren Teile der Stadt (ṣam) di-šum Gras zu sehen ist'), and VAT. 10143, vi, 46 ('di-šu = ditto, d.i. ṣam-mu'). He recognized disarru as the equivalent of the Syr. diṣ-rā, ḫgurops.

But dišu and disarru (inasmuch as they are represented by ṣaṃšā-ṣār-gu-la, very different from ṣaṃ-sullim for ṣaṃ-dišu) must mean something more than mere grass; ṣaṃšā-ṣār "heart-plant", suggests at once a narcotic. For this reason we can see a more sinister side of dišu (?) appearing in KAR. 203, r. iv-vi, 41 (which must surely read ṣaṃ-sullim and not ṣaṃ-muh). "(If) dišu (?)-grass is plentiful, there will be harm to cattle," and in HC. 37, 229, ina diše u ḫabburi šurāšat tamīru "with diše and ḫabburi (see p. 96) the land round about was sown", i.e. like the enemy in the New Testament, who used darnel. Here, therefore, we find a clue to a more exact meaning for dišarru: IB. 969 says of the Arabic dišrā that it is like wheat, and that it is mixed with wheat and given the name zawān, which is properly darnel "which intoxicates and is called denka".

mişDišu occurs rarely in MT., but certainly in two instances where Lolium temulentum, darnel, could be used. mишDišu is to be "reduced", brayed, and mixed in human urine (AM. 84, 4, r. iii, 6): ana na ša epir-ili malu šammu damqu eli epir-ili "for a man full of Dust-of-God, a good drug on the 'Dust-of-God'". This tablet deals with leprosy or scab: Col. iii, 9 enuma ina zumur na pi-in-du-ú pišu ša ga-ra-bu i-gab-bu-[u] "When on the body of a man white (dry) pindū, which they call garabu (scab, itch)". mишDiš-šum is used also, ib. l. 2. mишdiš-šu, 53, 1, iii, 8. Culpeper (1814), 110, says that the darnel is not without some vices, but has many virtues: its meal stays gangrene and sores, and with salt and radish roots it cleans the skin of leprosies, etc.; with water and honey it is used to bathe the sciatica. Paulus Ḡgineta ii, 109 (Francis Adams, Simples iii) prescribed cataplasms of flower of tares and liquid alum and other components for ulcers.

But besides this beneficial external use of Lolium temulentum we have to consider its very deleterious effects internally. It is well known as a narcotic, with effects resembling intoxication, and when mixed with flour and made into bread it has been known to produce headache, giddiness, somnolence, delirium, convulsions, paralysis, and even death (PP. 179: PC. xiv, 1839, 99). Abu Hanifa (in IB. 1370) says that its grain has nothing harmful in it, but others in the same editor's work do not agree. Forskål (F.Æg. 199) says ziwān (tares): "Zizania Aleppensisbus notissima inter Triticum viget. Si semina restant farinae mixta, hominem

1 Cf. TR. ii, 59, or Gadd, CT. xxxix, 8, 9, for the word a-tár, varying with a-ṭīr. Nötscher, Die Omen Serie s. alu (Orientalia, 1929, 107) reads addī "weil(?)ist".

2 "Dust-of-God," unknown to me outside these passages, is obviously some form of scaly skin-disease (e.g. ichthyosis) or leprosy.
reddunt ex panis esu temulentum. Messores plantam non separant; sed post triturationem Vanni aut Cribri ope semina rejiciunt." For si'lam (similar meaning, see below and p. 56, *silammu*, Syr. *šalma*) he says (ib.): "Etiam agri vitium; a priore tamen diversa species. Decocto plantae obtunduntur sensus hominis, qui operationem Chirurgicam subire debet; Aviccena sic referente."

Here, then, we reach a group of narcotic plants proper, marked by *šamšāšar* "heart-plant". *šamšāšar-gu-la* (GU-LA apparently meaning "great"), equivalent to *dišu* and *dišarru*, has also the value *šimiq karuru*, in which latter word, *karuru*, we have the root *kararu*, which seems to have the meaning "to go round", the Heb. *kārār*, orig. perhaps move around, then surround, enclose, recur (Briggs-Driver, *Dict.*, s.v.): *ikkār* "a round"; *Arab. karr* "return, repeat". The Assyrian *karuru* must be "ringworm" (*KAR*. 203, i, 49: *AM*. 2, 3, 4: Pl. 36, 81–2–4, 267, obv. 1 z.: rather than "itch", *PRSM*. 1924, 10). Allied words would appear to be *gurgurrī* "cable", and *qaram sāme* "eddies" (*DACG*. xviii). If we may see "vertigo" in *karuru*, and some general word for "strong" in *šimiq*, the connection with dannel is obvious.

Still further, we can see in its neighbour *šamsilammu*, the Arab. *šīlam*, and the Syr. *šalma*, *Lolium temulentum*. *Lipi risti*, *lipi šamštudī* (p. 223), *lipi abikti* (p. 223), various "fats", represent the inspissated milky juice of opium. *Risti* here might at first sight appear to be the same as the Heb. *rōš*, "poison," but the variant form *šamši eristi* (paralleled by *šami sulti* and *lipi šamštudī*) would seem to be the better. *šamši eristi* as *pāallāru* (= *lipi abikti*), "fat of corruption", represents the white maggot. The synonym for *lipi risti*, *kaharti gabišti* "swelling of the harlot" (p. 223), having regard to the white inspissation, suggests *leucorrhrea*.

*šamšussulu*, obviously another form (Pl. 43, S. 60, ix–vii, 8,1 dup. *KAR*. 203, r. iv–vi, 30) is used alone as "*šam śērēt ša ri-qī-ta išūni* (: ina kurunni si-ki-ru ina *šamni* tapašaš, i.e. a drug for flesh which has spots (Aram. *rīqūdā* "spotted"), "in warm (sīkurū) kurunnu-beer anoint in oil." In this receipt we are safe in considering the drug almost certainly dannel.

A form *šuluttu* occurs (*KAR*. 157, 4) in an enema, †, but whether it is to be referred here is uncertain.

E. *šamGI-RIM SIG*,... *šam̲asarratu*, *Euphorbia helioscopia* L., spurge. *Pl*. 18, K. 4354, i–ii:

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<tr>
<th>20. *šam̲am-ti egli</th>
<th>25. *šam̲am-ti eresi</th>
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<tr>
<td><em>šama-nu-nu-tum</em></td>
<td><em>šam̲am-ha-ra</em></td>
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<tr>
<td>2 <em>šam̲atīr</em>: <em>šama-tīr-tū</em></td>
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</tr>
<tr>
<td><em>šamsaši šar(?)</em> am-<em>ha-ra</em></td>
<td><em>šama-tū</em> (pir-)ar-tum 3</td>
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<tr>
<td><em>šama-ha-ra</em></td>
<td><em>šama-ra-an-tū</em></td>
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1 For footnotes 2, 3, and 4 see page 149.
This plant is distinct from ša-ma-tir-ta-rā-tum, Lathyrus (p. 91). ša-ma-tir-ta-rā-tum, “green calyx”, ša-ma-tir-ta-rā-tum, “kamti of the field”), and ša-ma-tir-ta-rā-tum, “kamti of cultivation”), suggest the spurge, Euphorbia helioscopia L., a common weed with green flowers and acrid milky juice, growing in cultivated and waste places in W. Asia (Bentham, HBF. 458 : HPP. 148): at Qala‘ah Sherghat (Hertzfeld, Beih. 32): E. Gaillardotii Boiss. et Bl. Boissier, between Nisibin and Mosul (“bokele safrā”, “yellow b.”, Von Opp. ii, 387). I saw great tracts of milkwort from the train in N. Syria, and certainly one species in March in Tripoli (Syria), called locally hilebi “milkwort”. The juice is poisonous, and this accounts for its rare use in MT.

This is philologically confirmed by the similarity of ša-ma-sa-rā-ta-rā-tum to the Arab. “chrrreisch” of Forskal (Flora, cxii), E. inarticulata minor, and būrīs, E. antiquorum (β) minor, inarticulata (ib. 94), and in the Arabic of India “hirruseaah” (E. helioscopia, IMP. ii, 1132). Cf. the Sir. ẖ̱sar, injuria affecit.

ša-ma-tir-ta-rā-tum, ša-ma-tir-ta-rā-tum, possibly the Heb. (const.) še-rēt “crown”, in reference to the broad leafy head. In the VM. (Pl. 44, i–ii, 9 : Mat. 88, i, 34) we get

2 Mat. 86, 12, 6, gives a-tir . . . ša-rā = a-tir-ta-rā-tum = has-ra-a-[tum].
4 But read a-ti (?).
1 Cf. CT. xxxvii, 10860, 32, iv, 47–8:

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<th>ša-ma-tir-ta-rā-tum</th>
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2 This plant occurs also among the Chamomiles or similar, pp. 117f. Kantum appears to be a synonym of karium and dešdi, all meaning some form of oppression or want, so that “field-bane” would appear to be not far wrong. Anunui would appear to be cognate to anunu “offence”, etc.
Samatirtum | ina epir abulli kamiti (v. kamite)

and Pl. 42, K. 4140, B, i, 5 : Pl. 44, i, 29 : Mat. 88, i, 55 :

(15) samunutu | ina imdullahitu

Pl. 10, 15 : Pl. 42, K. 4140, B, i, 12, 13 : Pl. 44, 36, 37 : Mat. 88, 1, 52 :

(15) GI-RIM-SIG, | ina amitti nari arqi

It is not easy to see what these imply exactly.

Samunutu occurs in M.T., †, uncertain use, KAR. 185, iii, 11, in a universal panacea (75 drugs), ext. KAR. 207, r. 7.

SamLulutu occurs elsewhere with the adjective "red" (p. 225) for "poppy". Here we must have a reference to the globe-like head of both flowers, cognate to the Arabic lalâ "pearl" it being "(green) lulutu" here, as contrasted with the "red lulutu" poppy. It is possibly the same word as the samluumum, applied to toothache (Pl. 23, K. 259, 4) (Pliny, NH. xxvi, 39, says that the seeds of the Tithymalos, milkwort, are inserted in hollow teeth with wax, and SM. ii, 188 prescribes: "Take the root of yathra, which is called tuthmalon" in wine or vinegar to be held in the mouth, for teeth. Lulumti-seed is to be drunk alone in kurunnu-beer, KAR. 200, 3 (evidently for "sick TU" (bowels), from l. 10. In India the seeds of the Helioscopia are used (with roasted pepper) for cholera, and the juice for neuralgia) IMP. 1132).

For samAmhara, samkasi šar amhara, samamhara kasi šar, and kasū, see p. 148. SamAmhara kasi šar is prescribed for temples in squeezed grape juice . . . , KAR. 188, 7. 1 qa of ash of (willow)-nitre with 1 qa of ash of samAmhara is put into uterus, KAR. 194, iv, 9. SamAmhara is also a drug for flies, to be brayed alone in some form of limetu-ghee, and anointed, KAR. 203, iv, 13.

Langdon has a passage in Le Poème Sum. 196, 34, which might contain this plant: [LUGAL-MU samam-ša-ru MU-NA-AB-BI "[Mon roi pour la plante] cannellia a commandé", followed by "il coupera, il mangera . . . "], showing that . . . im-ša-ru is edible.

F. samRIM bušanu, Helleborus orientalis Lam. (or H. niger L., or H. fœtidus L.), (black) hellebore.

VAT. 9000 :

(a) šam RIM | šambu'-ša-nu
(b) šamkalab(UR-KU).ME-ME | šam
(c) šamgar—bu—bu | šam
(d) šamKA—RIM | šam
(e) šamAR—ME—DA | šam
(f) šamra-la-dš | šam
(g) šamar.'—bu | šam
(h) šampr—ri—bu—uš | šam
(i) šambu'.—ša-nu | šam

Mat. 86, vii–ix, 15 :

samRIM | bu'.—ša-nu | kal.—[bu a]ME-ME (?)

1 Not in Mat. or on Pl. 10.
It occurs in MT. as iambu-sa-nu with samac-par (Ricinus), etc., for a swelling, to be prepared in a pan in hitetu-ghee and beer, [to be applied], AM. 100, 3, 20. Otherwise I do not know of it.

The identification rests on three points: iamrim, definitely meaning calyx, a flower something like the Buttercup: above all, its equivalent, iambu-šanu "fœtid": and the value qarbulu. "Fœtid" would at first sight suggest the Fœtid Hellebore or, if not Helleborus fœtidos L., the H. niger, which also emits a strong nauseous smell (VK. 546) and, as the "Christmas Rose", offers an admirable flower to coincide with iamrim; the third point, iamqarbulu, proves "Hellebore" philologically, by comparison with the Arab. ḫarbag, the Syr. ḫarbakhna "Hellebore". Although we are left in doubt whether the Assyrian should be read with a q or k, the metathesis of the consonants is in accordance with the usual habit of words containing a liquid consonant.

With the identification with H. niger L. (or some similar hellebore) we can examine the other synonyms:

"Dog of Gula" (iambkalab-deme-me) (or, of Šamas, see D. 532, 137) may have been suggested by the curious way in which the many fibres are sent off from the root, and may fancifully, perhaps, have been compared to a dog's legs. The name melampodion in Pliny (NH. xxv, 21), i.e. "black-foot", may have some bearing on this. Diosc. cxlix (eli) says that the Melampodion purges, is used for amenorrhœa, toothache, and in ears. iamArālaš, from its termination, looks like a Hittite word, as also perhaps does iampiridulas (hardly a Hittite original of Veratrum, the other hellebore?).

iambRū-sigir "plant-which-makes-fair", might perhaps represent the traditional property of the Black Hellebore of curing insanity, dependent of course on the actual meaning of damiqatu (sigir) here.

The confusion between the two kinds of Hellebore, Helleborus and Veratrum, would appear from the next section hardly, to have been as common in Assyria as elsewhere; we find apparently only one instance of the H. niger (iambbusanu) used actually by name in MT. The probable varieties of Hellebore for iambbusanu are either Helleborus orientalis Lam. (cf. EB. xith ed., xiii, 253), as probably the equivalent of H. niger in Mesopotamia, occurring in Greece and Asia Minor (Index Kewensis, s.v.), or such kinds as, e.g., H. vesicarius Auch. in Boiss. (Arab. ḫarbag), from woods—Aintab, Mar'ash, Mt. Casius, and Amanus (FP.² i, 18), or H. fœtidos L. (Index Kewensis, s.v.), which grows in S. Europe.

G. iambkur-kur, atišu, Veratrum album L., white hellebore.

Pl. 25, K. 4398 + 4418, i–ii, 25–31:

| iambkur–kur | iamat-i-[šu] |
| iamsaš-mi šadi(i) | iamat-i-[šu] |
| iamsusnši | iamsadi |
| iamslib-bi | iamsadib |
| iamsuzun lib-bi | iamsašadib |
| iampipi-pi-nu | iampipi-[wa] |
| iampipi-pi-tak ¹ | iampipi-[i-šu] |

¹ Unless this represents the sound of a sneeze iampipi-pi-fum (wa-wa-tu-fum).
¢amKUR-KUR is used thus in MT.:

Always simply 1: Ext.: Eyes (?), use uncertain, AM. 10, 3, 25: †, AM. 13, 3, 7: †, apply, AM. 19, 6, 5, 7, 10: in a prescription concerning eyes, put on neck on wool, †, AM. 14, 3, 10. Ears, singing, †, insert on wool, AM. 33, 1, 24. Head, †, poultice, AM. 2, 1, 22. Stomach, with cough, †, [bind (?)], AM. 27, 2, 8 + 50, 2, 8, RA. 1929, 82. Chest or lungs, †, poultice; AM. 28, 8, 9, RA. 1934, 1. A blow on the mouth, †, cleanse mouth, AM. 78, 1, 12 + 28, 7, 9, AJSL. 1930, 4. For aši (as appetizer), †, anoint in oil, †, in oil, AM. 16, 4, 13; AM. 64, 1, 22 (dup. 16, 4, 13, and 55, 8, 4, RA. 1929, 70); cf. KAR. 203, 64 = ¢am aši, applied boiled: in Pl. 29, K. 4566 it is given as a ¢am aši, but no directions have survived. 2 For “poison” (of muscles), †, poultice, AM. 98, 3, 11. For sthilti, †, anoint in oil, KAR. 56, r. 11. Hand of Ghost, †, anoint, AM. 94, 2, ii, 13 (use uncertain, †, AM. 76, 1, 2: 97, 6, 5). Sorcery, †, anoint, AM. 87, 1, r. 6.

Int.: Too much saliva, †, in beer drink, AM. 31, 4, 12 (cf. Ebeling-Unger, A.f.K. i, 23, 3, ¢am-pi (= wa)-ta-i-ši: cf. l. 8). Jaundice, †, bray, in beer drink, Scheil, RA. 1916, 38. Stomach, alone in beer drink, and iarrum (he will vomit or be purged), Ku. ii, i, 48; †, in beer drink, AM. 39, 1, 42 (prob. 36, and 49): †, in kurumin-beer drink, AM. 42, 5, 6. Difficult labour, alone in beer drink, AM. 67, 1, iv, 21 (dup. KAR. 196, r. 1, 29). Strangury, †, drink, AM. 59, 1, 35 (in strong wine): 60, 1, 7 (in wine or beer): prob. AM. 66, 7, 8: prob. some form of strangury, †, prob. drink, AM. 60, 1, 25. Hand of Ghost, †, drink (long diagnosis), AM. 76, 1, 8: †, in kurumin-beer, drink, ib. 18, in beer 20 (cf. 27). Sorcery (?), †, in beer [drink], AM. 87, 5, 15. Uncertain, †, in beer drink, AM. 83, 4, 7. Stomachic, alone in beer drink (and iarru), Ku. ii, i, 48.

Suppository: Hand of Ghost, †, AM. 94, 2, ii, 7. Stomachic, †, AM. 43, 1, 7.

Fumigate: Stomachic, †, AM. 57, 3, 9. Temples, †, AM. 20, 1, 13; head or temples, †, in cedar-blood, AM. 2, 1, 18. “Poison,” †, in cedar-blood, AM. 91, 1, 13 (dup. 92, 4, r. 1 + 92, 9, 1). Hand of Ghost, †, AM. 99, 3, 5, 10, r. 3. Uncertain disease, almost certainly fumigate, †, AM. 101, 3, 11, 17. In incense, with bureasu alone, and otherwise, see p. 154.

Quantities: ½ qa, AM. 36, 3, 3: ½ shekel, †, in enema, AM. 41, 1, iv, 15: 10 shekels, †, in enema, KAR. 157, 20; 15 shekels, †, in enema, Ku. iii, ii, 22.

My identification with Hyoscyamus (AH. 103) was wrong, and I amended this, I think correctly (JRAS. 1924, 669), to Hellebore, definitely, now (from the preceding plant, ¢ambušamu, Black Hellebore), Veratrum album L., the White Hellebore.

A comparison of Ebeling-Unger, A.f.K. i, 23, 3 and 8 (a text for saliva) with the similar AM. 31, 4, 11, suggests that ¢amKUR-KUR is the equivalent of ¢am-pi (= wa)-ta-i-ši, and this restores K. 4398 (p. 151) to ¢amat-i-šu. This word occurs again as ¢ama-ta-i-ši in AM. 90, 1, r. 20 (to be

1 Except (apparently) ¢amKUR-KUR zir ¢amKUR-KUR, KAR. 207, 16. It should be noted that it is always the root which is used in medicine.

2 The use of ¢amKUR-KUR as a drug MAŠ-TAB-BA-RU-RU (alone) is uncertain (Pl. 29, K. 4566, 31, similar to ¢am-ma-gam-gam, id. 32): from its association with aši in the preceding lines, MAŠ-TAB-BA may be similar in meaning.
drunk, †, after a long diagnosis) and a-ta-i-šu (2½ qa) in a Kassite apothecary’s list (Clay, PBS. ii, 2, No. 107, 34) and in the phrase “one (or two) kuku-kusu-vessel(s) of šama-ta-i-šu” also Kassite (Clay, BE. “A”, xiv, No. 163, pl. 69, 47). The obvious explanation of šamatišu is the “Sneeze-plant” (Nieswurzel), from the cognate Heb. ʾaqāšāh “sneezeweed”, i.e. Hellebore (Veratrum album L.), with its property of causing sneezing, which although admittedly a characteristic of the Helleborus niger, is very definite in the case of the White Hellebore (Veratrum album) (Stillé and Maisch, Nat. Dispens. 1691 : Diosc. iv, cxlviii : EB. xiii ed., xii, 235, of helleborein : J. Humphrey, Drugs in Commerce, 64). This is confirmed by the Heb. name for the White kind, qa-dāš hám-ma-tišš (Löw, Ar. Pl., 306). By identifying the šambu’sanu as the H. niger, we can now be definite that the šamatišu is the “Sneeze-plant”, the Veratrum, in spite of the possible confusion (as elsewhere in ancient times) between the two in MT. (see below).

The Assyrian prescriptions can be well paralleled in ancient or modern medicine, for the White Hellebore (Veratrum) is essentially a cause of sneezing, and is used for eyes, killing the embryo, or causing vomiting, and in pessaries or enemata (Diosc. iv, cxlviii : cf. NH. xxv, 21 ff.). In SM. ii, “White Hellebore” (ba-bur-ba-khet) is used for eyes (p. 54), head (p. 59), ears (p. 112). Later folklore (LPG. 192) speaks of it as having emetic, drastic, diuretic, anthelmintic, sternutatory, and aperitive qualities (the latter doubtless indicated in our šam aši, which is confirmed by BMM. 128, “a powerful, bitter tonic”). Modern medicine says that in poisonous doses it produces vomiting and vertigo, and is used ext. to destroy vermin, for the relief of pruritus vulvae, itch, and as an errhine for coryza (Stillé and Maisch, ib.) and scabies (FHP. 632).

Of the other synonyms, the “plant for the ears” (i.e. wisdom) suggests that the confused account of Hellebore given by Pliny, NH. xxv, 21 (where it is often impossible to be certain whether he means the White or the Black kind), as a mental stimulant may be comparable to this: “... Numbers of studious men are in the habit of taking it for the purpose of sharpening the intellectual powers.” It was, of course, the Black Hellebore which was used to combat mania, but there is nothing certain to be seen in the synonyms for šambu’sanu (H. niger) in this connection, whereas we certainly have šam libbi, “Heart-plant” and šamuzun libbi, both synonymous with šam šadi (“mountain-plant”) in the šamatišu (Veratrum)-group. Indeed, although the “Heart-plant” here is spelt šam lib-bi, it is possible that this is the same as šamša, the “Heart-plant” described in the long incantation in Kü. i, iii, 29, which relates how the Heart-plant springs up in Makan (part of Arabia), and the Moon-god . . . , and the Sun-god brought it down from the mountains: its roots fill the earth, its horns pierce the sky, and it seizes on the “heart” of Moon, oxen, sheep, asses, dogs, pigs, men, and women.¹ That both the White and Black Hellebores have long had the

¹ At the same time, although the H. niger is said by Pliny (l.c.) to kill horses, oxen, and swine, there is no proof that we are dealing with this particular narcotic, any more than another, such as the Hyoscyamus muticus, which grows in the north of the Sinaic Peninsula, with foxglove-like “horns” and purple “bells”, and is well known as a plant which intoxicates the senses.
reputation of benefiting patients affected by epilepsy and mania is well known, and the Assyrians accepted this too.

In the VM. (Pl. 42, K. 274, iii–iv, 13, and an unpublished K. text, and Mat. 88, 1, 82) the indication occurs:

\[\text{šamkur-kur} | \text{ina mu-tal-lik mu-ši}\]

"White Hellebore in connection with the Roamer of the Night." Mutallīk muši is a by-name of Nergal (iv, R. 24, No. 1, r. 41–3), so that it may be that we are dealing with demoniac possession in some form. Unfortunately, we are not told here whether the Veratrum is to be used internally or as a fumigation (see below) but the following account of Veratrum, when used for mania in an old Botany (Cyclop. of Botany, 570) is interesting:

"The ancients are high in their encomiums of this plant [Veratrum] in cases of mania and epilepsy, and similar observations have been made of veratrum by authors of later times... the fullest trial which seems to have been lately made of the efficacy of veratrum is by Greeding, who employed it in a great number of cases (twenty-eight) of a maniacal and melancholic kind; the majority of these, as might be expected, derived no permanent benefit; several, however, were relieved, and five completely cured by this medicine... Veratrum has likewise been found useful in epilepsy and other convulsive complaints."

We have also, however, to consider the use of šamkur-kur as incense or in fumigation. In one long ritual it is added to riqli (burašu) in seven censers, but its exact purpose (except that it plays a part in the atonement for the king) is uncertain (BBR. No. 26, ii, 17). In another, it is easier to understand (Jensen, KB. vi, ii, 42, 5: Besold, ZA. 1888, 245: CT. iv, 5): a censer of šamkur-kur is to be set on the right of the door for Anu, opposite a second censer of riqkanaktu on the left of the door for Enlil. Here the riqkanaktu (frankincense?) is intended to give a pleasant smell, while its opposite, šamkur-kur (for which no one has ever suggested a pleasant incense) is presumably intended by its smell to drive away a hostile influence (like 'Asa fečđa, used in driving away demons, Sem. Mag. 149). In a long prescription against various diseases, of which šu-gud ("Hand of a Bull") and šu-nam-ne-šub ("Hand of a tabu") are part, a censer of riqli and šamkur-kur is to be presented (KAR. 157, 37). The addition of the riqli is very probably to help combustion. It is, however, the Black Hellebore which is given in Pliny (NH. xxv, 21, and cf. Theophrastus, EP. ix, viii) to fumigate houses; I have found no example to parallel the use of Veratrum thus, and it may be that we have here an instance of confusion between the two Hellebores. We are, therefore, left in doubt about the exact implication of šamkur-kur in these fumigations.

1 Pliny's description of the ceremonies necessary for obtaining the Black Hellebore (and in a less degree the White) are reminiscent of those used by the Assyrians in plucking the Colocynth (see p. 84): a circle was drawn round the Hellebore with a sword (i.e. iron, to exclude evil influence), and then the person about to cut it turns towards the East and utters a prayer.
IX

COLOURING PLANTS
COLOURING PLANTS

4. *Sam* Lid-gab, kamantu or kanistu, Rhus coriaria L., sumach.

1. (1) *Sam* Sapalginu, *sam* kurkanū, turmeric, and (2) *sam* azupiranu, crocus. These two plants (which will both be seen to give a yellow colour) must be distinguished, the one from the other. The vocabularies give long lists of synonyms of (1), but few for (2).

(A) VAT. 9000 gives:

<table>
<thead>
<tr>
<th><em>sam</em> sa-ap-la-gi-nu</th>
<th><em>sam</em> kur-ka-nu-u</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>sam</em> na-mul ʾissuri (?)</td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>sam</em> TA-RI-ZA-ʾAH 2</td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>sam</em> PI-IR-HA (?)</td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>sam</em> Lid-gab</td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>sam</em> BI (?) . . . MA (?)</td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>sam</em> si-mat māti 2</td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>sam</em> KA-RŪ-ŠIR-ZUB 2</td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>sam</em> kur-ka-nam</td>
<td><em>sam</em> ina Kaš-šē-e</td>
</tr>
<tr>
<td><em>sam</em> Pi-RI-MA-ʾAH 2</td>
<td><em>sam</em> ina Qu-te-e</td>
</tr>
<tr>
<td><em>sam</em> ku-ru-UŠ</td>
<td><em>sam</em> ina Kas-šē-e</td>
</tr>
<tr>
<td><em>sam</em> Li-nu</td>
<td><em>sam</em> epir a-sur-ri-ʾe 3</td>
</tr>
<tr>
<td><em>sam</em> kur-ka-nu-u</td>
<td><em>sam</em></td>
</tr>
</tbody>
</table>

(B) Pl. 27, K. 4621 + Pl. 32, K. 10024 + Pl. 34, K. 4565:

<table>
<thead>
<tr>
<th><em>sam</em> sa-ap-al-gi-nu</th>
<th><em>sam</em> kur-ka-nu-u</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>sam</em> na-mul ʾissuri (?)</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> TA-HU (!)-ZA-ʾAH</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> ṬAH—TAR—RA</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> Lid-gab</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> Ka-bad</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> [K]AK (?)</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> MAN (?)-LÚ (?)</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> em-ti si-mat māti</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> ʾellat si-mat [māti]i (?)</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> Lid-gab . . .</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
<tr>
<td><em>sam</em> KA-RŪ-Z[UB (?)]</td>
<td><em>sam</em> kur-[ka-nu-u]</td>
</tr>
</tbody>
</table>

1. Gadd, CT. xli, 45, 14, gives this form.
2. The character D. No. 103, 5.

157
PIŠ-ZUB-BA-[ŠAR] 1  
šamU 5-KA-N[Â (?)]  
šamKUR-GI-RÍN-[NA]  

20. šamGIR-[GAB]  
šamkur-ka-nam ša šadê[t(ê)]  
šamKUR-GI-RÍN-[NA]  

UŠ-E-EL-ŠAR  
šamPI-RI-ZA-[AH]  
šamKUR-GI-RÍN-[NA]  
šamKR-RI-UŠ  
šam-e-mu-Š

25. šamPI-IR-[HA],  
šamKUR-GI-RÍN-[NA]  
šamKR-RI-UŠ  
šam-e-mu-Š

108860 (CT. xxxvii, 29, 12 ff.) has only the left column:

(12) šam-sa-al-ba-gi-nu. (13) šam-na-mul ı̂şṣurî (?). (14) šamTA-RI-ZA-AH.  
(15) šamna-mul ha-am. (16) šamPI-RI-ZA-AH. (17) šamP]IR-]HA.  
(18) šamK]UR-GI-RÍN-NA. (19) šamUD(?)-AŠ-NI(?). (20) šam-e-li-n[ע].

Cf. Mat. 86, xii-х, 7 :  
KUR-GI-RÍN-NA-ŠAR | kur-ka-nu-u | UD (!)-RI-ZA-[AH].

So much for šamkurkanû.  
On the other hand there are few occurrences in the vocabularies of šamazupiranû (CT. xi, 45, i-iv, 2) :  
A-ZU-UK-NA | šamHAR-SAG-ŠAR | šam[ХAR]-SAG , = [nî]-si-gu-u) | [a-zu-pi-ra-n][ע].  

In the Agade period we find KUR-GI-RÍN ÛR (i.e. the root, for the garden of the High Priest, followed by two entries for ÛR alone with amounts) (Thureau-Dangin,ITT. 1282), and in Kassite times šamkur(!)-ka-nam prescribed for some stomachic trouble (Waschow,MAOG. x, 1, 35, 35). šamHAR-SAG-GÁ (saffron) is found on a text of the epoch of Ur (Scheil,RA. 1921, 58).

Now the respective uses of the two plants (1) and (3) in MT. are as follow:  

1. šamKurkanû:  
(1) Simply : ext. : Eyes, †, bind on, AM. 12, 6, 5 (šamKIR-GI-RÍN-NA).  
Muscles, hands and feet, †, (prob. ext.), AM. 98, 3, 16 (šamkur-ka-na-a).  
For insects, alone, bray, anoint in oil, KAR. 203, iv, 16 (šamKUR-GI-RÍN-NA).  
Int. : Strangury, †, drink, AM. 59, 1, 36 (šamKUR-GI-RÍN-NA), jaundice, alone, drink in beer, Kû, iii, iii, 10.  
Fumigate : Ears, †, AM. 35, 1, 3. Nose, †, AM. 64, 1, 21. Head, †, AM. 2, 1, 18. Mouth and nose, †, KAR. 202, 37. Hand of Ghost, †, AM. 80,  

1 On the analogy of šamur (K. 8249).  
2 Is this KUR, not ÛR ? [ÛR is correct.]  
3 Pl. 40, 82-5-22, 576, has the left column extant, with ... šam occasionally on the right (ll. 2-8): (1) šamKUR-KA-NA. (2) šamKUR-GI-RÍN-NA. (3) šamPI-RI-ZA-ÀH. (4) šamPI-RI-]HA. (5) šamKUR-GI-RÍN-NA. (6) šamKUR-GI-RÍN-NA. (7) šamKUR-ka-nam ša šadê[t(ê)]. (8) šamKUR-GI-RÍN-NA. (9) UŠ-E-EL-ŠAR.  
4 Or [a-zu-pi-r]ım (Deimel 401, 112 incorrectly [a-zu-pi-ra-n-]ım) which is not saffron at all (p. 64).  
Cf. CT. xix, 50, 5. šam[ХAR]-SAG-ŠAR = a-zu-pi-[a-nu], probably, from the spacing.
6, 5 (+ 99, 3), dup. 98, 1, 4. Poison (with sulphur, bitumen, and ka-aba), AM. 91, 1, r. 2 (dup. 92, 4, r. 2).

Quantities: \( \frac{1}{3} \) shekel, AM. 50, 3, r. 4: 3 carats, AM. 10, 2, 4 (obviously kur must be read here, but I have not re-examined the text). 2 shekels in an apothecary's list, ADD. 1074, 8.

(2) Root: For parkadi (some ext. disease) alone, bray, wrap in [hair (?) (u. goat's hair), put on neck (an unpublished text from Nineveh), 13: KAR. 203, i, 36.

The species \( ^{\text{aam}} \text{kur-gi-rin-na} \) (kurkanam) ša šaddi ("of the mountains") occurs in MT. (as well as in the vocabularies): Stomachic, bind on (āš-su), †, KAR. 186, 17. For tu (?) (stomachic), bray, [drink] alone in kurunnu-beer, KAR. 200, 5. Fumigate, †, AM. 101, 3, 17.

3. \( ^{\text{aam}} \text{azupiru}, ^{\text{aam}} \text{azupirānu} \), is used in MT. thus:

(a) "yellow \( ^{\text{aam}} \text{azupiru} \)": Strangury, drink alone in kurunnu-beer (KAR. 203, i, 26): for sickness of ..-bati, anoint in oil, ib. 47.

(b) \( ^{\text{aam}} \text{Azupirānu} \) (or \( ^{\text{aam}} \text{har-sag-sar} \)).

(1) Simply: ext. : Childbirth, alone in oil and beer put into [uterus (?)], KAR. 195, 16. Hand of Ghost, †, anoint, AM. 95, 2, ii, 9: 100-2, 8 (probably anoint): KAR. 184, 20. Ghost, †, anoint, AM. 33, 3, 7, dup. 96, 4, 10. Poultice, †, \( ^{\text{aam}} \text{har-sag} \) (glossed \( ^{\text{aam}} \text{har-har} \), AM. 70, 7, 5 (cf. KAR. 191, i, 16 ff.).

Int.: Woman's disease (menstruation), drink with Cannabis-seed and Ammi brayed in beer, KAR. 194, iv, 1. Drink and anoint (uncertain disease), †, AM. 88, 2, r. 8.

Enema (presumably), †, AM. 94, 2, 10, ii, 4 (cf. 56, 1, r. 8, and †, KAR. 157, 3).

Fumigate: Ghost, †, AM. 78, 10, 2, dup. 99, 3, 14 (cf. r. 4): "While yet green," †, anoint, AM. 88, 2, 7.

Quantity: 10 shekels, AM. 57, 3, r. 7 (cf. 42, 2, 7).

(2) Seed: \( ^{\text{aam}} \text{azukiranu}, \) stomachic (?), alone, use uncertain, Kū. ii, ii, 9. Temples, shave head, poultice, †, CT. xxiii, 39, 2.

(3) Root: "1 šū of root of \( ^{\text{aam}} \text{har-sag-šar}, \) †, stomachic, AM. 41, 1, 27.

Curiously the form \( ^{\text{aam}} \text{azukiranu} \) occurs more than once. AM. 33, 3, 7, where the duplicate 96, 4, 10, spells it correctly: Kū. ii, ii, 9 and KAR. 195, 16 have \( ^{\text{aam}} \text{azukiranu} \).

The more modern uses of turmeric and saffron are as follows:

(1) Turmeric, the drug from the root of Curcuma longa L.: "at one time much employed in medicine, chiefly for obstructions of the bowels and liver" (VK. 519), as in one prescription in MT. In India it is used ext. for pains and bruises, and eyes in conjunctivitis, and int. for jaundice, while its fumes cause copious mucous discharge, and are used in hysterical fits (IMP. ii, 1251). Int. it is used in India for liver, for jaundice, and for urinary disease (BMM. 521). With us its chief use is for dyeing.

(2) Saffron, the dried stigmas and tops of the styles of Crocus sativus L., used to-day for giving a colour (P. 457). The root was prescribed as diuretic by Diosc. (i, 25), who also recommends saffron for eyes and ears. It was at one time used as an antispasmodic and emmenagogue
In India it is used in fevers, melancholia and enlargement of the liver; it has stimulant and stomachic properties (IMP. 1274); it is used in pessaries in the uterus, and as emmenagogue, carminative, and against asthma, and ext. as a paste it is useful for relieving bruises, and it is an excellent palliative for hemorrhoids (BMM. 530). IB. 1110 gives za'frán as an ext. remedy for the liver, and the leaf for wounds: a woman who had miscarried was successful in childbirth after drinking it. In early times the chief seat of the saffron crocus was Corycus (mod. Korghoz) in Cilicia (EB. xith ed., s.v. "Saffron"). I saw Crocus speciosus Bieb. near Mosul (kindly identified for me by Dr. A. B. Rendle, F.R.S.). Rauwolff (I. 75) says that at Aleppo sesame, coriander, and wild garden saffron were used on bread.

We can now discuss the two plants. First, an important passage, Pl. 48, Rm. 328, r. 2-4, gives four substances for "staining the hands" (\. $^\text{sam}_m^\text{du}_m^\text{ru}$), a very usual custom in the East. The Assyrians appear not to have had henna; I have been unable to identify anything like it in the texts. Certain it is that, if they had had it, it would have been included among these four yellow stains, which consist of $^\text{sam}_n^\text{nu}$, $^\text{sam}_k^\text{urkanu}$, $^\text{sam}_h^\text{aldappu}$ (mustard), and $^\text{sam}_m^\text{azupiru}$. Of these we have now only to distinguish the exact meanings of $^\text{sam}_k^\text{urkanu}$ and $^\text{sam}_m^\text{azupiru}$, and the now well-known similarity of the two words (respectively) to the Heb. karkōm and the Arab. za'jnin is so obvious that it is only a question which is which. Both appear to be used in the Near East for external purposes not obviously of real medical use; in Basrah I was told that the use of staining the hands with Curcuma was that it was "good for the body"; and on the other hand the Arabs of the Pirate Coast (on the Persian Gulf) in certain cases of sickness rub the body with ghee mixed with saffron powder (Whitelock, Trans. Bombay Geogr. Soc. i, 38).

In MT. the use of these two drugs is not obviously comparable to that of modern prescriptions, except in so far that $^\text{sam}_m^\text{azupiru}$, on the one hand, coincides possibly with the use of saffron as an emmenagogue (the Assyrian is not certain), while $^\text{sam}_k^\text{urkanu}$, on the other, tallies with Curcuma in its more frequent use in fumigations. But in other respects the evidence for $^\text{sam}_k^\text{urkanu}$ as "turmeric", and $^\text{sam}_m^\text{azupiru}$ as "saffron" is surer. One definite piece of evidence is the derivation of $^\text{sam}_m^\text{azupiru}$ from $^\text{supru}$, "claw," as the Assyrians, at all events, accepted: in a charm against an enemy, KAR. 178, v, 49, it is written that on the 18th of Siwan one must eat hellebore, mustard, and $^\text{supru}$ a-zu-pi-ru in a lump of salt without a meal. Here is obviously the "claw of saffron", in which it is not too fanciful to see the Assyrian word for the essential part of the saffron-crocus from which saffron is obtained, i.e. the stigmas of the flower, actually thus described in IMP. 1274: "style thread-like, branching into 3 style-arms, i.e. stigmas exserted, orange-red, sub-clavate." The same philology is apparent in the pun in Maqlû. v, 31: $^\text{kima}$ $^\text{sam}_m^\text{ha}-^\text{ra}-^\text{sa}^\text{g}-^\text{sa}$ $^\text{lu}-^\text{appi}-^\text{ru}$ $^\text{ki}-^\text{pu}$, "like saffron may her sorcery scratch her".

This derivation from $^\text{supru}$ is in definite contrast to that of those words given as synonymous with $^\text{sam}_k^\text{urkanu}$ "turmeric", i.e. $^\text{sam}_m^\text{US}-^\text{E}$, $^\text{sam}_m^\text{US}-^\text{E}-^\text{U}$, $^\text{sam}_m^\text{US}-^\text{E}-^\text{EL}-^\text{SA}$, and $^\text{sam}_m^\text{US}-^\text{E}-^\text{EL}-^\text{SA}$, where there would appear to be an
obvious association intended between the "phallus," and the curious phallus-like roots of the Curcuma. The root of kurkanû, karâkû, is the same as the Syr. k'rack, involvit (with all the meanings suggestive of "roundness" connected therewith, e.g. PRSM. 1926, 70, takarrak, of winding a strip of linen round the finger). Kurkanû evidently refers philologically to the cylindrical roots of the Curcuma.

Lastly we may cite the use of the root of ísmamkurkanû (although it has to be explained that the root of ísamazupiranû is also found mentioned): ivR. 26, 7, 43, ësid (ûr) kurkanû usuḫ-ma "pull up the root of the kurkanû," just as ûr is used on p. 158 in much earlier times.

Philologically there is some little difficulty in finding definite cognates for the two, for the Heb. karkôn and the Arab. kerkûm may mean both "turmeric" and "saffron." Indeed, the Skr. for Crocus sativus is kumakuma (BMM. 550), or kunkuma (IMP. 1273). On the other hand, I definitely heard kurkum for turmeric in the Ashar bazaar (near Basra); Forskal gives the equivalence as Curcuma rotunda (F.Æ. cii), and the Syr. eqqârâ dhê khrârmâ (translated Curcuma longa) is certainly suggestive in its use of the word eqqârâ, "root."

The evidence for ísmamkurkanû as "turmeric" and ísamazupiranû as "saffron" may, therefore, I think be regarded as certain.

From ísamazupiranû we can work backwards to ísamazupirû. Ísamazupirû is evidently the actual "saffron" (to go further, we can quote azupirâniitu, the saffron-coloured rust in corn, p. 64): ísamazupirû, evidently the base of these, originally meant the actual plant: in MB. 32 it occurs as a-zu-pi-ri šar in the same group as asmidû šar, kusibirî šar (coriander), and azengištî šar (rocket), and we have also seen the šurpu of it quoted (p. 160); on the other hand there is ísam-a-zu-pi-ru(m) arqu "yellow azupirû," quoted on Pl. 27, K. 4430, i, 4, dup. Pl. 35, 27: cf. also KAR. 203, i, 26, dup. Pl. 27, K. 4430, 5, and (?), Pl. 35, K. 4180, A, 27. ísam-a-zu (v. su)-pi-ru(m) arqu | ísamditto (= hi-niq elamkuṣ) (v. written out) | bray, drink in kurumnu-beer. Also cf. i. 47, ísam-a-su(sic)-pi-ru arqu |. (Deimel gives a form ísamhar-šag arqu (No. 401, 114) from KAR. 184, 20, but it is obviously ísamhar-šag-šar).

The form azupiranû is as near the Arab. a'amran, as arzallû is to za'urr.

We can now continue with the synonyms for ísmamkurkanû:

(1) ísam-sapalginu, ísam-saplaginu, and ísam-salbaginu, compared by Meissner (MV, AG. 1904, 3, 29) with the Syr. sphišqindí given now as corrupt in FJ. iii, 339. BMM. 521 gives a curious form of an Arabic word used in India for Curcuma longa, urukusasabâghina (the uruku being probably the Arab. word for "root") which certainly suggests our word.

(2) ísam-namul ỉṣṣuri (?). Ísamnamul is a wooden object, but Ísamnamul ỉṣṣuri (?) is obscure: ísamnamul ha-am is another form, and it would seem not improbable, from this second form, that the correct word is Ísamnamul. On account of the form Ísamnamul ha-am we cannot refer it to the Celandine, Chekîdonîum, "herbe aux hirondelles," Swallowwort, called, according to IB. 1525, crocus and curcuma, with a yellow root used for dyeing (Arab. haṭâṣiyâh).

4. *samLID-GAB* is a synonym for *kamantu* (kaništu).

5. *samSimat mātī* (character D. 103, 5) varies with *simat mātī* (character D. 366, 14) in *samEnti* *simat mātī* and *samEllat* *simat [mātī]*: *ZUB* has also the value of *sikru*. *Entī* (i.e. *imtu*, saliva) and *ellat* (illatu, saliva) suggest comparison with *samUHR-TAR-RA* (or -sî, i.e. *parasi*) "drug for stopping saliva".

(1) (b) *samkurkanū* ša šadī must have some special significance, and can hardly mean merely "turmeric of the mountains". This is stressed in *BRP*. iv, 37, 16 (JRAS. 1924, 455) where the two kinds *samk. sa sadī* and *samk. ša mātu* are spelt out distinctly:

\[ [\text{samkurka-nu-ú kí-ma su-ha-tum gul-ša-wǔ samkurka-nu-ú šá šá-dí-i (17)} \]

\[ \text{[sampi(?)-ri(?)-za(?)-ah]: samkurka-nu-ú šá ma-a-tú sampl-pal-gi-na:} \]

"tumeric shaved (scraped) like suḥatum\(^1\) (is) kurkanū ša šadī (turmeric of the mountains) (17) [sampp(?)-ri(?)-za(?)-ah : k. of the country (land) (is) sapalgina."

None of the other turnerics besides *C. longa* (i.e. *C. Zedoaria* Roscoe, *C. aromaticā* Salisb., *C. leucorrhiza* Roxb., *C. angustifolia* Roxb., which appear to make the list complete, can be held likely to fill the place of "k. of the mountains", inasmuch as they are natives of E. India or other far distant lands. If, therefore, we note the *BRP*. commentary here quoted, and compare the process employed of "shaving" or "scraping", we can go a little further afield from turmeric to a substance closely allied to it, ginger. The roots of the white ginger of commerce are peeled and dried in the sun (PC. 1843, xxvii, 784): "they are scraped clean and dried carefully" (VK. 490). "The fresh rhizome is scraped, washed, and then dried in the sun" (FHP. 1st ed., 1874, 576).

I obtained ginger in the Mosul bazaar and was told that its name was *'orq harr* ("hot root") or *zingīfīl*, and that it grew "in the hills".

Skeat (*Etym. Dict.*, s.v. "ginger") refers the word *zingiber* to the Skr. *grīṅga* "a horn"; "the resemblance to a deer's antler is striking." No word similar to *zingiber* appears in the Assyrian synonyms. It is interesting to see that the Assyrians recognized that the *Curcuma* and the *Zingiber* belonged to the same family (*Zingiberaceae*).

We can go on to *samLID-GAB*:

3. *samLID-GAB*, *kamantu* or *kaništu*, *sapru*, *sapratu*, *Rhus coriaria* L., sumach.

*VAT*. 9000 gives:

\[ \begin{array}{c|c}
\text{samšap-ra-tú} & \text{samka-man (or nis)-tú} \\
\text{samLID-GAB} & \text{sam} \\
\text{sam ki-ur(!)-ni} & \text{sam} \\
\text{sam bar-te} & \text{samša-mu a-še-e} \\
\text{samša-mu a-še-e} & \text{samšešu ka-man-tú} \\
\end{array} \]

*Pl*. 28, K. 4345, r. vi-v, 8 ff.

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\(^1\) "The upper lip." In the period of the First Dynasty of Babylon the upper lip was shaved (cf. the pictures of Ḫammurabi).
\[\text{\textit{Sam}LID-GAB} \quad \text{\textit{Sam}ka-man (or niš)-tu}\\ \text{\textit{Sam}sa-ap-ru} \quad \text{\textit{Sam}k[a-man-tu]}\\ \text{\textit{Sam}sa-ap-ra-tu} \quad \text{\textit{Sam}k[a-man-tu]}\\ \text{\textit{Sam}sa-la it-tu} \quad \text{\textit{Sam}k[a-man-tu]}\\ \text{\textit{Sam}k[ a-man-tu]} \quad \text{\textit{Sam}zir LID-GAB}\\ \text{\textit{Sam}bar-tu} \quad \text{\textit{Sam}zir sa-mi [a-si-i]}\\ \text{\textit{Sam}zir sa-mi a-si-i zir same ka-man-tu}]\]

\textit{SamLID-GAB} occurs thus in \textit{MT.}:


\textit{Int.}: For having seed, bray, drink alone in \textit{kurunnu-beer}, \textit{KAR.} 203, i, 18.

\textit{Suppository} (simply, or seed ?), †, put to anus, \textit{AM.} 101, 3, 5.

That \textit{\textit{Sam}kamantu} (\textit{kanistu}) is the proper restoration above is clear from the duplicates \textit{AM.} 4, 6, 8-12, and 96, 4, 1-6, where it varies with \textit{SamLID-GAB}.

That \textit{\textit{Sam}kamantu} is the more probable reading than \textit{\textit{Sam}kanistu} is suggested by the form \textit{ka-man-du}, given above: and this would suggest a root \textit{kamāmu} (the final \textit{m} becoming \textit{n}, and the feminine \textit{t} becoming \textit{d}).

Now the derivation of the word \textit{sapru}, \textit{supratu} (seeing that \textit{SamLID-GAB} is also a synonym for "turmeric") can only be from the same root as the Arab. \textit{ṣafara}, "be yellow." Secondly, the description of this drug, \textit{Sam šala ittu} (like \textit{Sam} ID₃₄ši + DUB₃ "drug for staining the hands" p. 160²) must mean "a drug for marking (staining) \textit{šala}”, i.e. the \textit{Syr. šālā} “a hide”. Here then, we have a yellow drug like turmeric, used for staining hides, and this must obviously be the sumach, one of the best-known products of N. Mesopotamia, where the dyeing and

² Or should this be appetite? It is, however, unlikely that this would be used externally (\textit{Curcuma} is a cordial and stomachic, \textit{BM.M.} 521).

³ Are we to include here the \textit{subur} of Bertram Thomas's \textit{Arabia Felix}, 74; "An old Mahra lady, unveiled like all her kin, her face smeared indiscriminately with the greenish yellow \textit{subur} dye (of a local tree). . . . The same pigment coated her arms from the elbows downwards, the legs from the knees downwards, and the upper part of the breasts to the neck."
tanning of leather is a staple trade. *Rhus Cotinus* L., for instance, “is made use of, like many other of the species, for tanning, in Italy. . . . The wood is used by the modern Greeks for dyeing wool, which is said to be of a beautiful rich yellow.” *Rhus coriaria* L. “is extensively used for the purpose of tanning, and it is said that all the leather made in Turkey is tanned with the bark of this species of *Rhus*” (PC. xix, 1841, 484, 485). The former, according to Booth’s *EC*. 658, “contains, besides an astringent [constituent] . . . the colouring matters, yellow, red, and brown.” In making chrome Box and Willow Calf “for all pale shades sumach is exclusively used,” *EB*. xith ed. s.v. “Leather”. *FP*. i, 200 says: “Die jungen Blätter auch Frucht und Rinde . . . wurden schon im Altertum zum Färben und Gerben . . . verwendet . . . die Wurzel die übrigen auch gelb färbt,” and *FP*.*ii*, 285, speaks of the *Rhus Coriaria* L. (fruit, bark, and young leaves used in tanning and dyeing) at Mar’ash and Aintab, *etc.*, and the *R. Cotinus* L. near Alexandretta, Mar’ash, *etc*.

An amusing confirmation of this is to be found in the synonym “a drug for ḫipnā”, i.e. the Syr. *kephnā* “hunger”, paralleled by šam bantu, the latter word meaning, I suggest, “hunger” from bāt “be hungry.” (like bantu from bānā, pirtu, from parū (?), šātu from šāḥā). *PC*. (l.c.) says of this that “the fruit [of sumach] is acid and astringent, and the seeds are often used as tonics for exciting the appetite”. *VK*. 320 says that “the seeds [of sumach] are used in Aleppo to provoke an appetite before meals. Both leaves and seeds are astringent and tonic”. This is apparent in šamšāmu ašē “a drug for appetite” (p. 162). “Its medicinal qualities are wholly to be ascribed to its stypticity or astringence” (*Cycl. of Botany* 1, 115). Rauwolff (i, 56), speaking of Tripoli in Syria, says: “then I found also in their Shops abundance of . . . the Seeds of Sumach, whereof they make a red powder, to excite the Appetites of the Stomach.” *Pliny* (NH. xxiv, 54) prescribes Sumach for bruises, and ulcers of the rectum, and also internally. This compares well with *MT*.

Gottheil’s “Fragments of a Short Medical Vocabulary from the Cairo Genizah”, *Jewish Quarterly Rev*. 1935, No 1, 22, also shows its ext. use: “Sumach. Its natural property is cold and dry to the second degree; astringent, it strengthens the intestines, allays thirst and pain coming from spleen. It is useful in case of dysentery and an abrading disease in the belly, taking a clyster with it boiled. It is [also] useful in the case of ulcers that persist a long time, and its gum is good against the corroding of the teeth; but it is inclined to produce melancholy.”

B. 1. šam Kamkadu, *Colchicum autumnale* L., Meadow Saffron.
2. šam E-nirḥi
3. šam Šurnū
4. Habašīllatu

1.-3. VAT. 9000 :

<table>
<thead>
<tr>
<th>šamār-ti-zu-ḥi</th>
<th>šam-e-nir-ḥi</th>
</tr>
</thead>
<tbody>
<tr>
<td>šam-tu-ba-qa</td>
<td>šam ša-ap-ru</td>
</tr>
<tr>
<td>šamšam-ka-du</td>
<td>šam...</td>
</tr>
</tbody>
</table>
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Pl. 41, K. 4564 + 8771, r. 1-6 + Pl. 37, K. 9948:

<table>
<thead>
<tr>
<th>šamšar-ti su-ḫi</th>
<th>šamšur-nu-u</th>
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</thead>
<tbody>
<tr>
<td>[šam]šar-ga-da-ra-nu</td>
<td>šamšur-nu-u</td>
</tr>
<tr>
<td>[šam]šar-na-ga (?)</td>
<td>šamšur-nu-u</td>
</tr>
<tr>
<td>[šam]...-ga-da-ra-nu</td>
<td>šamšur-nu-u</td>
</tr>
<tr>
<td>5. [šamšar]-zu-ḫu</td>
<td>šamšur-nu-u</td>
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<tr>
<td>[šamšur-nu-u]</td>
<td>šamb(p)ap-pi-ri (!) Adadi</td>
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<table>
<thead>
<tr>
<th>šamšesiḫu (MUŠEN)</th>
<th>šamša-pir-[ḫi]</th>
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<tbody>
<tr>
<td>[šamšesiḫu]HÚ (MUŠEN)</td>
<td>šamtu-ba-ḫu</td>
</tr>
<tr>
<td>5. [šamtu-ba]-ḫu</td>
<td>šamša-pir-ri šantu-ba-ḫu</td>
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<td>šamša-pir-ri</td>
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<td></td>
<td>šamtu-ba-ḫu</td>
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<td>šamša-pir-ri</td>
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<td>10.</td>
<td>šamša-pir-ri</td>
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</tbody>
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<table>
<thead>
<tr>
<th>šamMAŠ—KI—GÙ (?)</th>
<th>šamša-pir-ri</th>
</tr>
</thead>
<tbody>
<tr>
<td>šam kim-ši GÙ (?)</td>
<td>šamša-pir-ri</td>
</tr>
<tr>
<td>šam nun-ši</td>
<td>šamša-pir-ri</td>
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<td>šamša-pir-ri</td>
<td>šamša-pir-ri</td>
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<tr>
<td>15. šamša-pir-ri</td>
<td>šamša-pir-ri</td>
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<td>šamša-pir-ri</td>
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This is followed by Pl. 28, K. 4345, vi-v, 1-5 (not a "join", but obviously part of K. 9948 above, the length of the gap being uncertain):

<table>
<thead>
<tr>
<th>šamša- (?)</th>
<th>[šamša-pir-ri]</th>
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</thead>
<tbody>
<tr>
<td>šamša-ka-ka</td>
<td>[šamša-pir-ri]</td>
</tr>
<tr>
<td>šamša-ka-ka</td>
<td>[šamša-pir-ri]</td>
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<td>šamša-ka-ka</td>
<td>[šamša-pir-ri]</td>
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<td>šamša-ka-ka</td>
<td>[šamša-pir-ri]</td>
</tr>
<tr>
<td>šamša-ka-ka</td>
<td>[šamša-pir-ri]</td>
</tr>
<tr>
<td>1</td>
<td>šamša-ka-ka</td>
</tr>
</tbody>
</table>

Of this large collection of synonyms and part synonyms we shall do
best to take the \textit{samkamkadu} group first.

The obvious evidence for its meaning is in the synonym \textit{sam\textsc{\textasciitilde}sarnagu}, so similar to the Syr. \textit{s\textsc{\textasciitilde}uring\textsc{\textasciitilde}an}, Pers. \textit{s\textsc{\textasciitilde}urnaj\textsc{\textasciitilde}n}, \textit{Colchicum}, that we can have little doubt that this is the line to follow. This is confirmed by the addition of \textit{sam\textsc{\textasciitilde}sapr\textsc{\textasciitilde}u} (through its connection with sumach, the yellow dye, and turmeric or crocus, and the Arabic \textit{\textsc{\textasciitilde}afara} "be yellow", p. 163) as a synonym; \textit{Colchicum autumnale} L., the meadow-saffron, has a great similarity to the saffron, "a perennial succulent bulb, from which rises a long tube containing the flower" (\textsc{VK.} 546), "so very like an autumn crocus that an inexperienced observer might readily mistake the one for the other" (\textsc{PC.} vii, 338).

Next, take the synonym \textit{sam\textsc{\textasciitilde}e-nir\textsc{\textasciitilde}hi} which must have the meaning "come—let—us—copulate"). A glance at the picture of the \textit{Colchicum} with its long tubular sheath and bulb at the end will show why this name was given it. The corm attains its full size in June or early July, and a smaller corm is then formed from the old one close to its root (\textsc{EB.} 11th ed., xi, 661).

The curious synonyms containing the words \textit{sam\textsc{\textasciitilde}tubo\textsc{\textasciitilde}qu} and \textit{sam\textsc{\textasciitilde}tubatu}, connected obviously in the mind of the Assyrian botanist with the bird \textit{\textsc{\textasciitilde}ssur tubaqi} (an examination of the lists on pp. 165, 166 hardly warrants a more definite statement), are difficult. If we accept \textit{sam\textsc{\textasciitilde}ssur tubaqi} as a true equivalent, then, in reference to the original Sumerian values of the latter (see p. 165) "bitter bird" would appear to be the easiest base from which to start, since the \textit{Colchicum} is notoriously bitter

\footnote{Sic, [division-line] re-examined.}
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(cf. FH. 2nd ed., 701). But such an elaborate synonym to produce the comparison “bitter” seems unlikely, and the real value may lie in the simple tubaqu and tubatu without more than a fleeting connection in the Assyrian mind between these rare words (of which the meaning is unknown) and the bird connected therewith. At the same time, in consideration of the great accuracy of Assyrian method, this is not a satisfactory way of “shelving” the problem.

šamArti-uzuḫi is obviously the same as šamšarti-suḫi, and it is therefore difficult to offer a meaning. In the latter šarti may be “hair” with the suggestion that the Colchicum with its irritant properties, was a hair stimulant, paralleled, perhaps, by the use of šamšamkadu on the cheek or beard (below). šamšarzuḫu and some of the other words appear to be equally corrupt forms of the same word. šamšBappiri,šAdad, as at present understood, would mean something like “malt of Adad (the rain- or wind-god)”. The Arabic names of the Colchicum mbaššeret es-šita “harbinger of winter” and bešēret el-šatar “harbinger of rain” (according to FJ.2 ii, 157) might be applicable since (as IB. 1249 says) once the earth has received the spring rain the suringan flower appears (not more than a week later).

The other Arabic name siraj al-ghulah “lamp of the ghoul” is still more remote, but contains a possible remote connection with some of the Assyrian forms šarnagu, šarzuḫu, etc.

šamšIšqipu “worm-plant” (= išgippu, quqani qaqqari, Fauna 129), i.e. the earthworm, doubtless in comparison with its tubular sheath coming from the ground. VM. (Pl. 27, K. 4431, 8 : Pl. 42, K. 8807, 7 : K. 4163, 8 : Mat. 88, 1, 5) has its peculiar way of stating this relationship:

šamšamkadu | [ina iš]qippu

šamššelištu kal-li (?) ... “plant of the cleansing of ...”, uncertain reference. For the two main words šamšamkadu and šamššurnū I can suggest nothing.

šamšKamkadu is written both šamššam-kadu and šamššam-kadu, and it occurs thus in MT.:

(1) Simply: Ext.: Cheek, or Beard, †, AM. 26, 8, 13. Against the disease ši-Dar Hu (bi-Dar IŞuri (?), doubtless cutaneous, alone, apply to the sick place, KAR. 203, iv–vi, 56 (dup. Pl. 37, Rm. 357, 7) (note the form šamšša-mi GIG (murus) ši-Dar Hu, Pl. 36, Rm. ii, 412, 6). Swelling, †, “in beer in a small copper pan steep in milk,” bind on on a cloth [AM. 73, 1, 13], dup. KAR. 192, 5 : †, dry, bray, bind on as a rabiki, AM. 73, 1, 29, dup. KAR. 192, ii, 16 : with sumach and others, dry, pound, mix with ground flour, steep in ḫimetu-ghee and beer, bind on [on a cloth, AM. 100, 3, 13. Poison of limbs, a NAM-NES SUB tabu, with sumach (probably no more) pound together, steep in kurunnu-beer, bind on on a cloth, cold, AM. 15, 3, 16. [Poison] on feet, †, AM. 70, 7, ii, 4. Against an evil alu-demon, with sumach, bind on (aš-su), KAR. 186, 47. For mtiḫš zuqaqipi (fa-îs mir, parallel to GAZ GIR-TAB in the same group), i.e. scorpion sting (?) (normally ziqit aqrabi or zuqaqipi), alone, drink in kurunnu-beer and anoint in oil, Pl. 23, 12 (dup. ? Scheil, RA. 1918, 75) (the treatment suggests gout rather than a simple sting of a scorpion).
Int.: Breast hurting and top of stomach pressing ("lung trouble"), t, in beer or wine drink, AM. 48, 4, r. 10.

(2) Seed: To stop pain (ašš) bray with sumach, anoint in oil, AM. 16, 4, 2. "Sickness on foot (leg) of man" (gout?) bray, with seed of mastakal, put on the place, AM. 74, 1, iii, 2. Head, t, anoint in oil, KAR. 202, ii, 15.

(3) Uncertain whether simply, or seed: Eyes, bray alone (?), AM. 11, 2, 36. A blow on the side, with sumach, etc., dry, pound, sift, mix with ground flour, steep in . . ., spread on a skin, [bind on] warm, AM. 79, 1, 21. To remove poison, t, drink in kurunnu-beer and anoint in oil, AM. 29, 2, 5.

Colchicum in Mesopotamia (Ainsworth, Assyria, 34): numerous species, Syria and Palestine (FP. ii, 611 ff., FJ. ii, 157). In India C. autumnale does not occur, but there are two forms in the bazaars, the bitter and the sweet (CPL. 398). The deleterious qualities of Colchicum were well known to the ancients, and there are numerous later warnings against its careless use. The warning in P. 426 that "it may produce gastric or intestinal irritation, even in ordinary doses" will explain its rare internal use in MT., which prescribes it more usually externally.

In other pharmacopoeia this ext. use is recognized, "when applied to the skin it acts as a powerful irritant causing local pain (EB. 11th ed., xi, 662): IB. 1249 says that it dries up old ulcers: the New Cyc. of Botany, i, 139, says "as an external application, a few fresh bulbs, sliced, bruised, and mixed with a bread poultice, may be applied to gouty parts". Its more common use (both the corm and the seeds) is internal; "much prescribed for gout, rheumatism, dropsy, and cutaneous maladies" (F.H., 2nd ed., 701).

šamKamkadu is equated with šamkuudkuddu in an omen-text (Langdon, R.A. 1916, 31) "if in a field šamkamkadu appears" (preceded by šamranu and followed by arantu in similar circumstances. šamkuudkuddu may perhaps be the Syr. khatkh'dúthá of SM. 1, 562, 9. "For teeth which throb: root out the kadkdútthá which is a drug for the eyes, and take the great artery (the sheath?) wherein is moisture, and put it on the tooth."

The Syr. ḫamsalaitu, Colchicum is supposed to be the Heb. ḫbasselith which represents the Assyrian ḫabasillatu (giš-šē-rū, VR. 32, d-f, 62).

C. šamKamme eqlī, Xanthium strumarium L. (?).
šamkamme agurrī, see p. 169.
šamkamme askapi, vitriol of the leather-worker.
šamkamme gurgurri, vitriol of the metal-worker.

Pl. 37, K. 4417, 24-7, and Pl. 38, K. 5424, B, iii, 9-11, give:—

<table>
<thead>
<tr>
<th>šamkám-me eqlí pišū(u)</th>
<th>šam</th>
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<tbody>
<tr>
<td>šamkám-[ám]-me eqlí arqu</td>
<td></td>
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<tr>
<td>šam[kám]-me šadš(i) pišū(u)</td>
<td></td>
</tr>
<tr>
<td>šam[kám]-me gur-gur-r[i]</td>
<td></td>
</tr>
</tbody>
</table>

1 Or šamšim-ši...
This latter division in VAT. represents the mineral group for antimony (see DACG. 52), and clearly indicates the temporary cleavage from botany which the Assyrian scribe has felt it necessary to make in his gradual invasion of the mineral kingdom which has been brought about by the successive steps from (a) šamkamti eqli and its philological connection with (b) the plant šamkamme and its synonymous mineral “vitriol of the shoemakers”, bringing him to (c), our present text. The same entry into the mineral kingdom occurs again with the salts later on.

VM. (Pl. 10, K. 4218, A, r. vi-v, 4–6: Pl. 28, K. 4140, A, ii, 6–8: Pl. 42, K. 14062, 4–7: Mat. 88, ii, 25–7) gives:—

I think that there is little doubt that the evidence all points to šamkamme gurgurri and šamkamme aškapı being respectively “vitriol of the metal-worker” and “vitriol of the leather-worker”, Pliny’s chalcanthum, atramentum sutorium (NH. xxxiv, 32: AH. 274). Philologically the Neo-Syriac provides kam (= Syr. ekam), nigravit as a cognate (PS. 1751).

šam Kamme agurri is a difficulty, but I think that it must be a mistake. On K. 4140, A, we have certainly the sign gür in place of the sign a, which suggests a mistake by the scribe.

At the same time VAT. 9000, Mat. 88, and K. 4218, A (Pl. 10), are definite about the a-sign. Yet “vitriol of the burnt brick” is not, to say the least of it, plausible, especially when there is the obvious šamkamme gurgurri in existence.

---

1 Or šamkamme.
2 Or kit (?) in VAT.
3 K. 4140, A, has the important reading šamkám-me gür-[gür-ri], which is possible also on K. 14062 where gür is visible, but this may be the second sign in [a]-gür-[ru]. K. 4218, A, has a-gur-ru: Mat. a-[gür]-ru.
*samKamme* *imeri* "donkey’s vitriol", as appears to be certain (although not all the texts are definite), is a curious expression. But in a prescription for gonorrhoea (muṣū, which has also the value *misy*, yellow copperas): "if a man’s urine is like that of an ass, that man is sick of muṣā" (DACG. 114), the comparison obviously being between the yellowish-green discharge of gonorrhoea (with which word muṣū shares its other value, copperas), and the peculiar urine of the donkey. In our *samkamme* *imeri* "donkey’s kamme" we have surely a similar idea.

Our “donkey’s chalcanthum”, representing copperas, is used on *abanPAR-AS*, white stone, properly alabaster or feldspar (DACG. 145) in the *VM.* above, and this can be at once explained by the modern method of staining agate with green copperas to produce “Brazilian cornelian” of a red colour: “in fact the chemical resources of the German agate-worker now enable him to colour a porous stone to almost any desired tint” (Streeter, Precious Stones, 5th ed., 39). Chalcedony is one of the cheap materials for staining (Weinstein, Precious and Semi-precious Stones, 24), although it must at once be pointed out that, more accurately, chalcedony is properly *abanPAR-AS*A, and not *abanPAR-AS*.

With this suggestion from staining we can see a similar meaning in *samkamme* *agurri* (whether it be a mistake or not, in its use ina šipitu) “on grey hair” in the *VM.* above, since copperas is used in the East as a means of staining lips, as Ranwolff (Travels, 81) says that in Aleppo “they have still another strange Custom, which Young and Old, Men and Women use in these Countries, viz. They make a thin Paste of Galls and calcined Copperas (to beautifie themselves and to keep their Eyes from Rheums) with it they blacken their Lips, and make a ring round about their Eyes”. The same substance is used in VAT. 9000 above, as a “drug for the surface of *taase*”, i.e. for the kelek-skins, which buoy up the rafts, obviously similar to the “kamme of the leather-workers” (Layard, Nineveh and its Remains, ii, 98, quotes pomegranate-skins for this; see p. 316). *samKamme* “of the leather-worker” is mentioned in the next line as equivalent to *samšuṭu*, verdigris, which is, of course, also used by leather-dressers (DACG. 71). For this word *šuṭu*, VAT. 9000, gives as another equivalence, in the same register, *samšim-ZI*, which, in the relation in which verdigris stands to collyrium for the eyes, may be connected with the *šim-ZI-DA* and *sad i du* (stibium) obtained from Hindana by Tukulti-Ninurta (Ann. 19).

But *kamme*, so rigorously defined, must also have a value of gall-black, as will be obvious from *AM*. 12, 4, 6: “in fat of the kidney of an ox, black *kima kam-ma* ina ēli ēri, *kamma* on copper,” paralleled from Pliny, *NH.* xxiv, 26, in his test for pure verdigris: “The fraud may also be detected by using a leaf of papyrus, which has been steeped in an infusion of nut-galls; for it becomes black immediately upon the genuine verdigris being applied.” *Kam-mu* is used for eyes in *MT.*, along with *Ammi*, alum, etc. *AM*. 10, 4, 6, and as an ointment for eyes with black saltpetre, powder (ZID-ZID) of *abanAS-HAR*, sulphate of iron, Salicornia-alkali, fir-turpentine, nitre, *Lepidium*, sulphur, ox-fat, *A-gūg*, “needle of antimony,” and *šu-lū, AM*. 19, 6, 13. Indeed, the distinction between *kam-mu* (as on *AM*. 19, 6, 8, and 13) and *kam-mu* ša aškaps on l. 10 appears to be kept in such a marked way that simple *kamma* may well
be the vegetable black of the galls, as has already been suggested, con­
trasted with the mineral "kammu of the leather-worker" (which is
definitely once, at all events, the mineral suhtu, verdigris, in VAT. 9000
above). Moreover, VAT. 9000 gives an equivalence at the head of this
section as "drug like gall".

We now come to the actual plant-names compounded with kamme
which appear in the same category as the "kamme of the leather-worker",
and "of the metal-worker". samkamme eqi, written simply without the
adjectives "white", "green", or "white of the mountain", as on
p. 168, occurs in the VM. to be used on (in) abanzu-ni (or tâk-zu-ni, or
abaneri-ni), which is unintelligible to me. The green kind might possibly
be Xanthium strumarium L., which I saw growing (ripe in mid-October)
near Basrah (kindly identified for me by the Department of Botanical
Survey to the Government of India), which is used to give a black dye
to cloth (AH. 275); the flowers are greenish (FP. 2 ii, 42). My informant
in this Department kindly adds that Forskal and Delile give the Arab.
name as faraq al-bahr, and Ascherson "shubhey". I heard sâbbâgh
rohâh as the local name.

D. samza-gîn-na, uqâtu, Isatis tinctoria L., woad.

In Pl. 33, Km. 356, 6 ff. (restored from the dup. CT. xxxvii, pl. 31,
108860, iii, 33 ff.) we find after samnanalu 1 = samnallahtum the group

\[
\begin{align*}
\text{samshâ-mi} & \text{ra-pa-di}^2 \quad \text{samshâ-mi} \text{ uq-na-a-ti} \\
\text{samshâ-mi} & \text{ sir-pi} \quad \text{sam} \\
\text{samshâ-mi} & \text{ sîl-qi}^3 \quad \text{sam} \quad \text{sam}
\end{align*}
\]

CT. xviii, 17, K. 4211, 5-7, gives:

\[
\begin{align*}
\ldots \ldots \ldots \ldots & \quad \text{uq-na-a-tum} \quad \text{in-zu-ri-[tum]} \\
& \quad \text{ar-ga-ma-nu} \quad \text{"red-purple"} \\
& \quad \text{ar-qu} \quad \text{"orange (?)"}
\end{align*}
\]

Doubtless here inzur[tum] is a mistake for inzahur[tum] (p. 172).

Obviously in samshâmi uqâtu we must have a blue colour (connected
with uqâ, lapis lazuli, and blue). CT. xxviii, 17, K. 9892, ll. 9-12, gives:

\[
\begin{align*}
uq & \quad \text{uq-na-a-[tum]} \\
uq-na-a-tum & \quad \text{uq-na-a-[tum]} \\
sh-pat \text{ sir-pi} & \quad \text{uq-na-a-[tum]} \\
za-gîn-na & \quad \text{uq-na-a-[tum]}
\end{align*}
\]

Jensen was right, of course, in seeing the Syr. qânâdâ, the equivalent
stone in this (Brock., 326). The Syr. qânâ is Isatis tinctoria L., a plant
for dyeing blue, found in Palestine (FJ. i, 493). samza-gîn-na is used for
an uncertain disease, alone "while it is yet green", brayed and anointed
in oil (KAR. 204, 19). samshâmi uqâtum is described above as a drug for

1 108860, samsu-pa-ru, the line immediately preceding the group giving samsh[a]...

2 108860, samshâ-mi ra(?)-a-di.

3 108860, qi, and repeats this line, the right-hand column being lost, except for

sam...
DICTIONARY OF ASSYRIAN BOTANY

rapadi (uncertain), for širpi (dyeing), and for silqi (uncertain). All things considered, the word would appear to mean both the blue dye and the cloth dyed with it.

Isatis aleppica Scop. was noted at Qala'ah Sherghat (Beih. 31).

Inzahuritu, the Syr. ẓḥorīthā, cocum (Brook. 93, quoting Jensen) occurs in Scheil, RA. 1921, 97 (Keiser, Letters, 12, 162), 2 1/2 mana inzahuritu ana 10 šiqlu kaspī 1/4 bilat tīqasi u tīqšīmēššalī ana 5 šiqlu kaspī (i.e. 2 1/2 mana of blue(-dye) for 10 shekels of silver, 1/4 talent of myrtle and šīmēššalī for 5 shekels of silver) in Nebuchadnezzar's time, paralleled by Ebeling, NBB. No. 204, where 1 talent of inzahuritu is worth 1 1/2 mana of silver, a considerable difference in the value. Camb. 11, 1, gives the value of 2 mana of inzahureti as 2 shekels of silver, which is not far from the latter price. 10 shekels of TUG-ZA-GIN-KUR-RA are mentioned, for a mantle of Bēlit of Sippar, in Camb. 4, 1 (cf. 3 and 66, 1).

E. [Here may be included Pl. 27, K. 4162, which contains, among other things, tanning materials].

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<td>šamša-maš-gil-la-nu</td>
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<td>*šamaš-gil-lum</td>
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<td>šamhi-šu-sur ša₄atani</td>
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<td>šamši-šu-me-nu</td>
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<td>šamšu-pa₄a-ti ša₄ ti-nu-ri</td>
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<td>[ša]mid-da-na-₄u</td>
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<td>šamši₄a₈₄mat₄A₄dadi</td>
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<td>šammu ša pān tāḥ-ši-e</td>
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<td>ka₄n-₄u-₄u</td>
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<td>pi₄t₄u</td>
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<td>[k]a(?)-</td>
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<td>[š]e₄₄e₄₄ri₄₄nu</td>
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<td>[š]e₄₄erinu</td>
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1 Cf. p. 301 for myrtle used in dyeing.
X

THORNY PLANTS
CAPER, THISTLE, STAR-THISTLE, LYCIUM, CAROB, DodDER, CASSIA TORA, ROSE

A. قسام liberties, (قسام)نيم, البتي, Capparis spinosa L., caper.

Pl. 22, K. 267 + 4180, B + 6069, vi-v, 30 ff.: Pl. 18, K. 4354, r. xiv-xiii, omitting l. 35, and varying in order:

<table>
<thead>
<tr>
<th>30.قسام liberties</th>
<th>قسام البتي</th>
</tr>
</thead>
<tbody>
<tr>
<td>قسام aš-ka-di</td>
<td>قسام البتي</td>
</tr>
<tr>
<td>قسام a-mu-miş-tu</td>
<td>قسام البتي</td>
</tr>
<tr>
<td>قسام a-tu-tu</td>
<td>قسام البتي</td>
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<tr>
<td>قسام UD-DA</td>
<td>قسام البتي</td>
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<tr>
<th>35.قسام NUMUN-GIN</th>
<th>قسام البتي</th>
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<tbody>
<tr>
<td>قسم num-un-gin</td>
<td>قسام البتي</td>
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<tr>
<td>قسم انسام-ري-هع</td>
<td>قسام البتي</td>
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<tr>
<td>قسم انسامنيت-ني-تَع</td>
<td>قسام البتي</td>
</tr>
<tr>
<td>AL-UD-DI انسامنيتم</td>
<td>قسام البتي</td>
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</tbody>
</table>

Note Scheil, RA. 1921, No. 7, ii, 4:

قسام البتي 

and Von Soden, ZA. 1936, 239, 137-8:

asonic a-mu-aś-tu = b[al]-tum
ba-āś-mu = "

Insert here, as there is some connection at the end, Mat. 88, 4, 27-31:

قسام SE-RU غي-مِع(؟) |قسام(SE-RU) غي-مِع(؟) |
|قسام SE-RU گر-عَلالي |قسام(SE-RU) گر-عَلالي |
|قسام SE-RU گر-تاسريتی |قسام(SE-RU) گر-تاسريتی |
| قسم SE-RU گر-ني-ما-ني | قسم SE-RU گر-ني-ما-ني |

Cf. the group Pl. 43, K. 4419, ii, 1-3:

قسام SE-RU گر-عَلالي |قسام SE-RU گر-عَلالي |
|قسام SE-RU گر-تاسريتی |قسام SE-RU گر-تاسريتی |
| قسم SE-RU گر-ني-ما-ني | قسم SE-RU گر-ني-ما-ني |

Cf. the group Pl. 43, K. 4419, ii, 1-3:

قسام SE-RU گر-عَلالي | قسم SE-RU گر-عَلالي |
|قسام SE-RU گر-تاسريتی | قسم SE-RU گر-تاسريتی |
| قسم SE-RU گر-ني-ما-ني | قسم SE-RU گر-ني-ما-ني |

Cf. the group Pl. 43, K. 4419, ii, 1-3:

قسام SE-RU گر-عَلالي | قسم SE-RU گر-عَلالي |
|قسام SE-RU گر-تاسريتی | قسم SE-RU گر-تاسريتی |
| قسم SE-RU گر-ني-ما-ني | قسم SE-RU گر-ني-ما-ني |

Cf. the group Pl. 43, K. 4419, ii, 1-3:

قسام SE-RU گر-عَلالي | قسم SE-RU گر-عَلالي |
|قسام SE-RU گر-تاسريتی | قسم SE-RU گر-تاسريتی |
| قسم SE-RU گر-ني-ما-ني | قسم SE-RU گر-ني-ما-ني |


قسام البتي may be connected with the word البتي "male or female sexual parts", and, recognizing the peculiarity of the Assyrians in making such comparisons, we may see their comparison in the curious red fleshy appearance of the trefoil with its three carpels, the red pulp of which is eaten by the Arab children (Sir Richard Burton, Land of Midian, ii, App. iv, speaks of the red berries of the Capparis Sodada Br., eaten in S. Midian).

1 Cf. Thureau-Dangin, RA. 1919, 167, 21, اشي = a-حُلَت-إ-كَي.
2 Cf. Pl. 41, K. 4564, 11-12, وَقَمُ-عَلَه = قسم ...، قسم عَلم-لَه = قسم ... (?).
3 E.g. Tales "stone of the sexual part of an ass" (belemnite?): قسم ِکَنَف-سِال-لَه "stone of the mouth of the uterus" (?). (whetstone, DACG. 104, 184).
PC. iii, 268 (s.v. "Baghdad") says that the Arabs of the neighbourhood express a sweet juice from the berries and eat the leaves. Forms of the same word appear to be bal-la and ba-la, equivalent to a-mu-mi-iš-tu, CT. xviii, 3; viii–vii, 31–2, preceding e-qu = a-šá-gu (thorn), and I see no reason to alter my suggestion in 1903 (Devis, i, 137) that this is the Syr. b-l of PS. 527, a, "medicamentum quoddam, sc. radix capparis spinosa." Ashurbanipal (VR. 3, 40) compares the number of corpses of Elamites, whom he had slain, to the išNM and iš-gir. Rich (Koord. ii, 394) speaks of the great quantities of caper bushes in flower in the Beni Lam country (in S. Babylonia, between Basrah and Kut). Indeed it is most marked in this southern part of the country, in distinction to that of the north of Mesopotamia. I certainly noted it growing plentifully in the south, but not round Mosul, although I see that FJ. i, 324, is against this: "Sprossen und Blätter werden in Palästina gegessen (Bourinov.), auch sonst, z.B. in Mosul, wo man sie sammelt (Ritter 11, 219)." At all events it grows as far north as Qala‘ab' Sherghat (Herzfeld, Beih. 31), Ainsworth saw C. spinosa and C. ovata at Urumieh (T. ii, 301) and Rauwolff saw at Aleppo "such plenty of capers that they are not at all esteemed" growing on old walls, the natives pickling their flowers before they open (Travels, 1, 102). Its noticeable appearance in the south would at all events confirm the appropriate comparison made by Ashurbanipal in his southern campaign.

The capers given in FP.¹ i, 134–5, are: C. decidua Forsk. (C. sodada R.Br. : C. aqhylla Roth. : Arab. saudid, tunud), C. sicula Duham. (C. spinosa var. b, L. Arab. al aşaf): C. aegyptia Lam. (Arab. lasasf (i.e. al-aşaf), kabar); C. parviflora Boiss. : C. cartilaginea Decne.

L. 31 ff. ˇSam aškādi seems to be a descriptive title, perhaps "drug or plant for aškādi" (presumably not a mistake for maškādi, parkādi ?); the outstanding use of the caper is for pickling, but I can find no Semitic root to help us.

ˇsamAmumistu does not look as if it were formed from a single Semitic root; rather is it one of the many curious double words, suggesting amu-mistu.

For ˇsamatutu I can also suggest nothing, and ˇsam UD-DA is also used descriptively of ˇsampa iš-gir "tops of the Lycium thorn" (to be brayed and anointed in oil alone for this affection (KAR. 203, i, 42).

ˇsamNUMUN GIN "setting of seed?", possibly comparable to the O.T. belief that the caper is stimulating to desire (see Briggs-Heb. Lex. 2). ˇsamUššamrihu, another compound word. išNM pikinnitus (pignitu) is the equivalent for the "white baltu", the reference being to the white flowers of Capparis spinosa (hardly "dry caper" here).

For pir'i (v. pirī) išNM (balti) see p. 177. In AL-UD-DU išNM (v. balti) as ˇsamŠE-RU išNM, AL-UD-DU = nabaṭu, said of stars, an unusual word for the shoots of a plant.

išNM is used thus in MT.:

(1) Simply: ext.: Temples, probably, †, in oil (cedar-oil), AM. 4, 6, 9: dup. KAR. 182, r. 31.

Int.: Strangury, alone, bray, drink in beer, AM. 59, 1, 25.

(There is a tabu on rooting up išNM, Lycium-thorn, tamarisk, and palm, all of them well-marked denizens of Southern Babylonia, Šurpu,
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viii, 57.) "NIM is "the hair on the breast" of the mythical being described in Tod., 32, 13).

(2) PA. (tops): Feet unable to support weight of body, †, (ext. ?), AM. 69, 7, 9, hands and feet, †, [poultice], AM. 98, 3, 18.

(3) Root: ext.: "which (is) on a grave," †, bind temples, AM. 99, 2, 2 + 1, 4, 3, dup. 102, 1, 38. "The root of "NIM-PAR (white caper) which, when thou uprootest it, does not see the sun, a drug for a decayed (ru-ti) tooth, dry, bray, mix with oil, apply thereon," Pl. 23, K. 259, 10. It is used with the root of Lycium from a grave († (?)) to bind on "middle" (pelvis), etc., CT. xxiii, 3, 16.

(4) ŠE-Rū (shoots): ext.: for "poison" (red or black bubo), †, bind on, AM. 92, 9, 5 + 4, r. 4 (P.A. 1930, 130): a cataplasma for "poison", †, AM. 98, 3, 10 (sim. to Scheil, RT. 1901, 134, 5 ff., and Langdon, BE. xxxi, 72, 28, see RA. 1930, 134). A blow (mišitti) on the "front" (gab-ri), †, AM. 76, 2, 10. To remove AN-SAR .. , bray, anoint in oil alone, BM. 122654.

Int.: Strangury, alone, drink, KAR. 203, 1, 24.

Fumigate, †, for "poison of all his flesh (limbs)" (dry, pound, sift), AM. 91, 1, 5.

(5) Seed: Too much saliva in mouth, †, AM. 29, 5, 12. Menstruation (probably excessive fluid), drink with seed of Lycium and root of "NIM-ri g Ŭr, (probably mandrake) in beer, KAR. 194, r. 5.

(6) SAHAR (dust) of diki (?) of "NIM, †, bind on head for scab or sim., AM. 1, 2, 11.

(7) Fruit: When the priest cannot remove the Hand of a Ghost from the man, †, anoint in oil, and wear on neck in a skin purse, KAR. 184, 20.

The omens show that "if "NIM-PAR "white caper" appear in a field in the middle of a town, the field will be destroyed, and the (owner) die, TR. ii, 56, 18: cf. Gadd, CT. xxxix, 6, K. 3840, 1.

The chief uses of the "baltu or "baltu pištu ("white caper"), apart from the pickling of the nibi' (shoots or buds) in MT. are paralleled for the most part by later pharmacopoeias, the parts in MT. used being the simple plant, the PA (tops), the root, the ŠE-Rū, the seed, the "dust of diki (?)", and the fruit, and its use in prescriptions for strangury, menstruation, cataplasma, and saliva. CPI. 264 points out that Cappar is spinosa was employed by the Greek and Roman authors, and through them the medical properties of the root were made known to the Arabs, it being very generally employed for liver, spleen, and amenorrhœa. Diosc. ii, cciv, prescribes the caper for teeth (cf. the top shoots and leaves, IMP. No. 95, of C. aphyl a Roth) In India the root and bark of C. spinosa L. are regarded as astringent, and the powder is used ext. for malignant ulcers (BMM. 159: cf. IB. 1877): the Algerian 'Abd-er-rizaq of the eleventh cent. (ed. Gabriel Colin, 53) says that the bark of the root with vinegar is used for splenetic and liver tumours. In Syria the dried leaves in vinegar are applied to ulcers and scabs in the head (FJ. i, 329: cf. SM. ii, 658). The dried bark is diuretic (IMP., No. 92).

To sum up: ēm-baltu is a thorny plant, cognate to the b-l of PS. 527, a, perhaps caper: esp. ēm-NIM-PAR "white caper": pir's "NIM (baltu) the shoots or buds (the buds being particularly used for pickling), and
also *nībi* "balī" actually prescribed with saltpetre (for pickling): the medical uses being also satisfactory.


*Pl. 25, K. 4398 + 4418, i–ii, 15–24:*

\[
\begin{aligned}
\text{šam} & \text{si-} \text{kur-} \text{rat nībi} \\
\text{šam} & \text{si} \text{ kur nībi} 1 \\
\text{šam} & \text{um-mat nībi} \\
\text{šam} & \text{ša-ḫa-ir} \\
\text{šam-ši-ša-gra-ah} & \text{ puqutti} \\
\text{šam-ša-ma-ai} & \text{ puqutti} \\
\text{šam-pu-ug-da-tū} & \text{ puqutti} \\
\text{šam-ši-ma-nī} & \text{ puqutti} \\
\end{aligned}
\]

*CT. xviii, pl. 4, ix–vii, 1–2 (cf. *Pl. 18, Rm. 346, 20–1, and Von Soden, ZA. 1936, 240:*

\[
\begin{aligned}
\text{pu-qa-da-tam} & \text{ pu-qu-ut-tum} \\
\text{ga-ab-ga-bu} & \text{ pu-qu-ut-tum} \\
\end{aligned}
\]

It occurs thus in *MT. :*

(a) *šam Puqutti :*

(1) *Simply: ext.*: probably *Strangury,* as *gar-lāl-šag* . . . "(bandage for the head [of the penis (?)])", unusual, instead of drinking, *AM.* 60, 1, 4.

*Int.*: probably *Strangury,* †, [drink], *AM.* 60, 1, 13: †, [drink], ib. 15: †, either in wine or beer [drink], ib. 7: (doubtless to be drunk), *AM.* 89, 1, 11. *Jaundice,* in beer alone [drink], Scheil, *RA.* 1916, 37, 27.


(2) *Seed: ext.*: *Swelling,* †, poultice, *AM.* 15, 3, 5 (*JRAS.* 1937, 231).

*Int.*: *Urinary,* †, in squeezed grapes or beer and refined (žašī) oil drink, *KAR.* 193, 5: †, in wine, milk, or *kurūnu-beer,* drink, ib. 13. *Strangury,* †, in wine or beer drink, *AM.* 59, 1, 33: †, in strong wine or . . . drink, ib. 39. After the prescriptions given above for inability to retain urine, when *šitu*–*šu* (his ejection (?) ) pricks him, †, in beer drink, *KAR.* 155, i, 31. For (staying) menses, with seed of laurel and seed of *šam-sual-a* (hyoscyamus) in beer drink, *KAR.* 194, iv, 8: similar, dry, bray, drink alone in beer, ib. 14.

(3) *PA* (tops) "puqutti,* in a long prescription, uncertain, *KAR.* 208, 10.

(b) *šam-ši-ša-gra-ah* : *šam-ši-ša-gra-ah* occurs in Lutz, *AJSL.* 1919, 81, iii, 64, as well as *šam-ši-ša-gra-ah,* the seed of which is to be drunk with *šam-ša-u-u* in wine for stone, ib. 81.

1 Or is it *šam-si-mat eqi,* a name for rue, p. 76.
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60, 1, 24.

The identification of this plant depends strikingly on iii R. 43, iv, 5, a boundary stone: "May Adad, Director of Heaven and Earth, fill the rivers with mud, and tamerati-su limilā puqutta may he fill his (i.e. the enemy's) tamerati 1 with puqutta." Adad, as god of the wind, is invited to carry this plant over an enemy's field, i.e. thistledown. Cf. iii R., 41, ii, 33: kīna "Nisaba puquttu lihmubī "like corn may corncockle spring up". I have seen the fields of Baghbah (east of Baghdad) and the hawajga-scrub opposite Mosul full of tall thistles.

The plant is used as a simile for the upper lip in the description of the mystical being (Tod 47, 15) "puquttu šarat su[hatišu] "thistles are the hair of his upper lip". It is also used in forms of jewellery: 2 Kir-suhur pu-gut-ti hurasī (5th year of Naziyamat, Legrain, PBS. xiii, No. 80, 9, cf. p. 10). Beck (Arch., 1927, 29, B, 1, b) gives an example of a corncockle pendant in faience from Egypt.

Carduus Marianus L. grows in Syria (FP. 2 ii, 93) and at Mosul (the specimen which I took home was kindly identified for me by Dr. A. B. Rendle, F.R.S.). Its seeds were formerly thought to cure hydrophobia, and in Germany jaundice; the root is also used (FHS., 2nd ed. 557). Note also John Hill, Useful Family-Herbal, 367, on Carduus Mariae: "the root and seeds are used. An infusion of the fresh root removes obstructions, and works by urine; it is good against the jaundice." C. Benedictus (FHS. ib.) stimulates the liver; Carlina vulgaris (ib. 538) is diaphoretic and purgative. Pliny (NH. xxii, 43) says that the Scolymos (supposed to be either the Scolymus maculatus L. or S. Hispanicus L., Bostock, ib.) is diuretic, and the Sonchus (Sonchus oleraceus L.) (ib. 44) carries off calculi. Rich (Koord. i, 143) mentions thistles (to nourish horses) in Kurdistan. FJ. 2 i, 407, mentions the Cynara (Arab. taskir) and the Dipsacus (Arab. 'atšana), ib. 587; D. sylvestris Huds. and D. laciniatus occur in Syria (FP. 2 i, 611).

In the VM, it occurs twice:

(1) Pl. 42, K. 274, 16: K. 8764 unpub.: Mat. 88, i, 85: iš=puquttu | i na tak(aban-su)(rik)-bi

(2) Pl. 10, K. 4218, A, i, 5: Pl. 44, K. 4152, i–ii, 17: Meek, RA. 1920, 181, S. 1701, i–ii, 8: Mat. 88, i, 43:-- iš=puquttu(m) | i na aban ašakki (v. ašakku)

Both of these quotations are difficult to translate. In DACG. 171 I suggested that since the thistle is diuretic, the "stone of ašakki" might perhaps mean calculus, especially since the Sonchus is said to have the property of carrying off calculi. In the other case aban su bī (perhaps paralleled by iš=išami šu-(bi) (p. 178) might mean "stone of flux" (for zūba), or possibly it might refer to dyeing (šabū) a stone. But both are hazardous.

The form puquttu allows us to settle the root as puqadu or baqadu,

1 Tamerati: Belser, BA. 1904, ii, 143, in translating this passage, makes it "Flur, Umgebung einer Stadt". Bezold, BAG. 290, gives the meaning of one tamerti as "Umgebung, Flur", and another (ib. 43) "(voller) Teich, Fisch-Weiler".
and therefore, although its connection with other Semitic roots is not clear, obviously it cannot be connected with the Heb. bārēqānām (with the r lost as in kussu, Arab. kūrsī, etc.).

ṣamGabbābu is uncertain. ṣamSiḳurraṭ eqli "lock (bolt) of the field"; ṣamummat eqli (used also in the shortened form ṣamummat) "army of the field", both descriptions admirably fitting the thistle. ṣamgīr-ha-ḥā, ṣamUL-ha-ah with ṣamha-hi-n suggest a similarity of sound with the Heb. ḫōḥ "thistle", gīr being "a point". ṣamgīrīm is made up of gīs "wood, tree", and rim, a spherical or globular flower-head (see p. 272), which well represents the thistle-top (parallel to ṣam iṣū-gir, rim "thorn and flower", Centaurea). To sum up: The evidence that the wind carries the seeds is very strong to prove that ṣampuquttu is the thistle, and this is corroborated by the use of the gold thistle-head as a form of jewellery. In MT. ṣampuquttu is used for strangury, jaundice, and urinary trouble, which is well paralleled by the use of thistle in later medicine.


These occur in syllabaries thus:

(A) Pl. 21, K. 267 + 4180, B + 6069, Cols. v–vi:

| 11. ṣamē — i ḫi | ṣamā-ṣā-gu |
|—— ṣamī-dā-a | ṣamā-ṣē-gu |
| ṣamša-mī šādī(i) | iṣū-gīr |
| ṣamnuḥ šādī(i) | iṣū-gīr |
| 15. ṣamgīrīm | iṣū-gīr |
| ṣam-a-ma-r[i-du] | ṣamā-ṣā-gu |
| ṣam iṣū-gīr [rim] | ṣam iṣū-gīr |
| ṣamgu-ḥa-si | ṣamda-da-nu |
| ṣam5 ṣam5, ṣam5 ina Su-ba-ri |
| ṣam5, ṣam5 ina Qi-na-ḥi |
| ṣam5 ṣam5, ṣam5 ṣam4 ṣam4 ina Qī-na-ḥi |
| ṣam4 ṣam4 ina Me-ḥu-ḥi |

1 CT. xviii, 3, vii–viii, 33 (cf. ib. pl. 16, Rm. 346, 7): e·gu = a-ṣā-gu.
2 Less probably e.
3 CT. xviii, 3, vii–viii, 34, a·ma·ri·du = (i.e. a·as·gu).
4 From Pl. 46, Rm. ii, 203, i, 6 (= ṣam iṣū-gīr, iṣū-gīr). 6 108860, ditto.

[Footnotes continued on next page.]
(B) VAT. 9000:

| (a) šamal-lu-zi | šamši-[ma]-bu 1 |
| (b) šamd-u-su-su | šam |
| (c) šamų-bu-li-li | šam |
| (d) šamsá-mu mi-sir šub-bi | šam |
| (e) šamsá-mi mi-qit šub-bi | šam |
| (f) šame-gi-lu-u | šam |
| (g) šamdu-az(!)-du-mu 2 | šam |
| (h) šamši-ú-ME-DA | šam |
| (i) šamši-ma-šu | šam |
| (j) šam(m-šu-ú)NAM | šam |
| (k) šamšik-šat eqli | šam |
| (l) šam-GIR | šam |
| (m) šam-šinib ú-GIR | šam |
| (n) šam-GU-GAL | šam |
| (o) šamdu-li-li | šam |

(C) Cf. Pl. 37, 81-2-4, 254, 6 ff.

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5. | lamši(ma)-šu |

(D) Meissner, MVAG. 1913, 70, 80 ff.:

| 80. | šiš-GIR |
| --- |
| šišṭe-tu |

| 81. | šGURUN ú-GIR |
| --- |
| a-bu-li-šu |

| 82. | šGUL-? 4 |
| --- |
| Ditto |

| 83. | šGUL-?-GA |
| --- |
| Ditto |

| 84. | šGUL-DIR |
| --- |
| pi-en-du-ú |

| 85. | šSUR-GUL |
| --- |
| Ditto |

| 86. | šBIR-GUL |
| --- |
| Ditto |

| 87. | šČ-GIR |
| --- |
| aša-gu |

---

6 A form a-bi-tu occurs, Pl. 46, Rm. ii, 203, i, 7, and a-bi-tum, 108860, iv, 9. Perhaps add here CT. xviii, 3, vii–viii, 35 (cf. ib. pl. 16, Rm. 346, 9), a-bá (v. mu) -ú = ,, (i.e. a-ta-gu) (Von Soden, ZA. 1936, 239, 141).

7 [f]ak-ku clear on K. 257, but see further, p. 185.

8 aš on 108860, iv, 11 (i.e. for GAL).

9 Restored from Pl. 46, Rm. ii, 203, i, 8, and 108860, which latter has šamša-am-šu after aša-bi-tum.

10 This plant occurs Pl. 46, Rm. ii, 203, i, 4.

11 Perhaps add here 108860, iv, 7, ... ša-mu(?) ... -u = šamšu (i.e. šamšu(-)ru-bu).

12 Pl. 46, Rm. ii, 203, i, 5, šamša-mu šiš-GIR.

13 Additional from VAT. 9000. šamšušu ša-mašu šamša-pu ša-mašu-šu (see p. 13).

14 Cf. 108859, ii, 3 (CT. xxxvii, 26).


16 Cf. above, (C) I, 4, and Pl. 31, K. 8846, 7.

17 CT. xviii, 36, ii-iv, 25, ... šanu šiš-GIR = , (i.e. abu) ša-[ru-bi]: Meissner, MVAG. 1918, 2, 27, 82, šanu šiš-GIR = a-bu-li-šu.

18 SA. 565.
1. **šú-gir, ašagu, thorn, especially *Lycium*.

**šú-gir** is made up of šú “plant” and gir “pricking point”, gir being also used in such a word as [šú]eštin-gir (“prickly vine”) = murdīnu “bramble”, Mat. 1, i–ii, 12. Ašagu = the Arab. ‘ausaj (‘eusa}, (eusa}), *Lycium Europceum* L. (Pick, Assyr. u. Bab. Talm. 32 : FP.2 ii, 260) (Rhamnus, IB. 1602). Dr. A. B. Rendle very kindly identified the specimen of ‘eusa} of Mosul which I sent him as one of the Acacias. *Lycium Europceum* is common in Syria and Palestine (FP.2 ii, 260). Sir Richard Burton (Land of Midian, ii, App. iv) speaks of the *Lycium europceum* L. (“‘aushaz”) as being eaten by animals in Middle and South Midian.

“The ‘ausaj is a species of thorn having a round red fruit, like the carnelian bead, which is sweet, and is eaten’, or ‘a species of thorn trees, having a bitter red fruit, in which is acidity ...’. It is clear that the term ‘ausaj, and therefore ‘atād, must have been applied to a number of plants” (Post, Hastings’ DB. iv, 751). The “round red fruit” is confirmed by VAT. 9000 (o), and MVAG. (see p. 181) (a)-bu-li-li = tamūbú šú-gir sāmu “red fruit of ašagu”.

Like ‘ausaj (and ‘atād) šú-gir, apart from any particular equivalence, appears to have a general meaning “thorn”, as its Sumerian would suggest. It is given the equivalent ittit[ti] (the Heb. ḏāḏh “bramble, buckthorn”) in Reisner, Ḥymnen, No. 60, 15, and Meissner, MVAG. 1913, 2, 27, 81. Ḥittitu is given as a simile of the magic plant in GE. xi, 268: “there is a plant with a ... like īttī[ti], its prickle like amurdīnu (bramble).” šú-gir is given as providing sarat kappalati-šu (“hair of his kappalāti”) in the description of the mythical being in Ebeling, Tod 32, 13 (KAR. 370).

**šú-gir** occurs thus in MT.:

1. **Simply**: as a fuel to use in fumigating with drugs (pi-en-ti šú-gir “charcoal of thorns”), AM. 98, 1, 11. A “fire of ašagu”, mentioned in fumigation, CT. xxiii, 26, 11 : 28, 31 : 43, 7: AM. 54, 1, 8, etc.).

2. šē-rū (shoots): ext.: For “poison of the flesh”, poultice, AM. 92, 4, 7. 4: perhaps the simple šú-gir (following šē-rū šīnm, as in the previous quotation) may be intended for šē-rū in AM. 98, 3, 10, as a poultice, †, for “poison”. For Qi misitti (“the result of a blow”) on the “front”, † [poultice, or bathe], AM. 76, 2, 10: for a blow (misitti), the hands and feet being without strength, † [bathe], AM. 82, 2, 5. For a bruise (dikšu), †, in cedar-blood [anoint], KAR. 182, 20.

**Fumigation**: dry and fumigate for “poison of all his flesh”, †, in fire, AM. 91, 1, 5.

3. **Root**: ext.: Toothache, apply alone (“which, when thou pullest it up, the sun does not see”), KAR. 203, i, 7, dup. Pl. 23, K. 259, 7. Temples (“root of šú-gir, which is on a grave”), †, bind, AM. 102, 38. Uncertain, anoint alone in oil, KAR. 203, i, 38 (Prob. Hand of Ghost), †, anoint, AM. 97, 4, 4.

**Int.**: Strangury, šē-sun of the root of šú-gir, bray alone, drink in beer, AM. 59, 1, 24: simple root, drink in beer, †b. 25. Perhaps [root], for (overmuch) saliva, †, AM. 31, 4, 22 (uncertain use).

4. **Sikti**: 15 grains, †, apply by anus, AM. 31, 4, 22.

6. ZID-ZID (fine powder) ("of iterable which sprouts on his building") for [scab] on head, †, prob. ext., AM. 1, 2, 18.

7. ḫīlu(gum) (cf. quotations from the syllabary at the head of this section, p. 180, i.e. ḫīl šimṭa[te]).

8. Seed: with seed of caper and root of male mandrake ( iterable-RI-GIRA) for some difficulty about menstruation (prob. overmuch, or painful) drink in beer, KAR. 194, iv, 5.

9. PA. (tops), i.e.  iterable-PA iterable UD-DA, i.e. a drug for sunburn (?), to be brayed and anointed alone in oil, KAR. 203, i, 42 ( iterable is also a drug for  iterable UD-DA, p. 175).

10. CT. xii, 48, v-vi, 3, GĪŠ-SÁ-KI-LUH-HA-GIŠ-GIR = ab-nu ša a-ša-

11. Inib iterable, bray, †, for swelling, KAR. 192, ii, 5: "while yet green" bray alone, bind on swelling, KAR. 192, 37.

12. ZID inib iterable (probably) "powder of the fruit of Lycium", ext., KAR. 192, iii, 17.

Iterable must, from the uses in MT., represent, in one of its phases at least, a definite thorn-plant used as a drug, and not (in MT. at all events) a general word for thorn. The Arab. 'ausaj, Lycium, fits admirably.

Diosc. i, 132, prescribes Lycium for eyes, ears, ulcered gums, pruritus, menses, dysentery, and blood-spitting. IB. 1602 prescribes the leaves of 'ausaj for children’s eyes, the juice ext. and int., and the branches in fumigation against venomous beasts. P. 242 prescribes the bark of the root of Berberis vulgaris L. (which contains an alkaloid named Oxyacanthine, FHP., 1st ed., 1884, 35), as a bitter tonic. Asaf Judeaus (i, 173) says that Rhammus, aqanthá, and ḥtud are good for toothache. (For Lycium mentioned in the Periplus, see Schoff, Periplus, 169, and a good description, FHP. ib. 34). In India Berberis Lycium Royle (stem, fruit, root-bark) is used in medicine, CPI. 130.

On the other hand the definition, not infrequent, of iterable growing on a wall (pitiqti, AM. 1, 2, 18: 67, 1, 24), grave (ki-mah, AM. 99, 3, r. 15: 102, 1, 38), tarammu (AM. 88, 2, 8), and even a house (Gwynn, PSBA. 1914, 242, 26) must indicate a peculiarity in a thorn-species which is not necessarily characteristic of the Lycium: indeed, so plentiful were the iterable and iterable near Susa that Ashurbanipal compared them to the numerous corpses which filled the ground round about (VR. 3, 40). A field of iterable is mentioned, TURk. 13 (Bur-Sin), which suggests some other thorn rather than Lycium.

While, therefore, we accept iterable as (a) "thorn" in general, and (b) as Lycium in particular. (especially since iterable = ‘ausaj), certain characteristics, particularly of its growth on walls, etc., suggest that the iterable may also represent that very common thorn of Mesopotamia, especially in the south, the ‘aqūl, the Alhagi Maurorum or camel-thorn. So common is this plant, indeed, that it can hardly have been left out in the Assyrian botany; and the need for identification becomes the stronger when it is remembered that the ‘aqūl produces a manna (and
that Aleppo people use it as a purge, Rauwolff i, 85). Consider the following:

(a) \textit{sam}Igi, \textit{egu}, probably the Aram. 'dãgã (hâgâ), the \textit{Alhagi Maurorum} (perhaps in the Carchemish tablet in my translation in Woolley's \textit{Carchemish}, ii, 139).

(b) \textit{sam}Dadã (occurring in the next group in \textit{[samša]}-am dadd\(=\) \textit{sam}ba-[ru]-bu, the latter being the carob, perhaps cognate with \textit{sam}dadânû, l. 18 \(=\) \textit{sam}\textit{i}g\textit{u}-\textit{gir}, which is probably \textit{sam}\textit{i}g\textit{u}-\textit{gir}-\textit{rim}.

(c) The equivalence of \textit{i}g\textit{u}-\textit{gir} as \textit{sam}\textit{sam}\textit{mi} š\textit{adi} “drug of the mountains” and \textit{sam}\textit{min}\textit{ši} š\textit{adi} “fruit of the mountains” is of little help.

(d) \textit{sam}\textit{gir}-\textit{rim} “blossom on a stalk” (see \textit{sam}\textit{i}g\textit{u}-\textit{gir}-\textit{rim}, below).

(e) \textit{sam}\textit{Amaridu}, \textit{i.e.} \textit{awaridu}, has every probability of being the Arab. \textit{ward} “rose”, \textit{i.e.} the rose with its thorns (paralleled by \textit{amurdinnu}, \textit{awurdinnu}, bramble, p. 327). \textit{Cf.} \textit{CT.} xviii, 3, viii–vii, 34, \textit{amaridu} \(=\) “

(i.e. \textit{asagû}).

(f) \textit{sam}Sam\textit{tu}, the name for the thorn in Meluh\(h\)î, is, as was pointed out by Meissner (\textit{OLZ.} 1903, 266) the Arabic \textit{sanf}, \textit{Acacia Nilotica}. \textit{sam}\textit{Hûl} š\textit{imtâtê} \(=\) \textit{sam}\textit{hûl} \textit{û-gir} may be a cognate; at all events it is a gum or gum-resin (see p. 186), and may be gum arabic. It is used with myrrh for hollow teeth, \textit{Pl.} 23, K. 259, 14, \textit{dup. KAR.} 203, i, 13.

So much, therefore, for \textit{û-gir}, \textit{asagu}, which appear to mean “thorn” in general, but more particularly \textit{Lycium}, and perhaps \textit{Alhagi Maurorum}.

2. \textit{sam} \textit{i}g\textit{u}-\textit{gir}-\textit{rim}, dadânû, \textit{Centaurea} (\textit{pallescens} Del, or \textit{Calci\textit{tr}apa} \textit{L.}), \textit{Centaury}, Star-thistle.

The Sumerian means lit. “thorn + flower”, which should be easy to trace. The description fits certain of the “thistles” of the O.T. (as distinct from \textit{sam}pu\textit{quttu}, p. 178), and the evidence will show that this is worth following up.

The Heb. for “thistles”, \textit{dardar}, is accepted as being one of the Centaury-plants. Post considers it to be the \textit{C. pallescens} Del. (in Arabic \textit{dardâr}) with yellow flowers and very bitter (\textit{cf.} \textit{FP.} 2 ii, 116 : \textit{FCH.} 41) : Löw (\textit{Ar. Pfl.} 427) cites Petermann as thinking it \textit{C. Calcitrapa} \textit{L.}, the ordinary Star-thistle. (\textit{Cf. also Smith, DB.} iii, 1491, on \textit{C. Calcitrapa}.) There is no doubt about the thorniness of this plant (“the involucral bracts end in stiff spreading spines”), and it has flower-heads (\textit{i.e. rim}), \textit{HBF.} (1858), 319.

The description given by Post in Hastings’ \textit{DB.} iv, 751, bears this out:

“One of the spectacles most striking to a stranger \[in the Holy Land\] . . . is that of a flock of goats, browsing in a patch of \textit{Eryngiums}, or \textit{Cirsiums}, or prickly \textit{Centaureas}, and crunching down the heads, a couple of inches in diameter, composed of stiff thorns.” \textit{šaukat al-dardâr} is the generic Arabic term for the thorny \textit{Centaureas} (\textit{ib.} 752). At least two, perhaps three, plants were known to the Greeks by the name \textit{r}p\textit{iβolos} but he says (\textit{ib.}) that some have identified the thorny \textit{Centaureas} with one form of it.

\textit{sam} \textit{i}g\textit{u}-\textit{gir}-\textit{rim} occurs thus in \textit{MT.} :

THORNY PLANTS

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Int. : "Retention" (hiniqti) with Asa fetida and one other [drink], AM. 60, 1, 2: with pine-turpentine, myrrh, and Asa fetida (prob. no other drugs), ib. 21.

Quantity: 10 carats of \textit{\textsuperscript{4}GIR-R[M]} mentioned, AM. 83, 2, 11.

(2) Seed: Int. : "Retention" (hiniqti) with six others [drink], AM. 57, 1, 13, 43. Blood from anus (dysentery) with brain of a sulphur-fish in boiled wine drink, KAR. 191, 2, 9.

(3) PA. (tops): Ulcers or similar, \textdagger, probably apply, AM. 31, 7, 12.

(4) ZID (powder): Urinary trouble (strangury) with ZID of male mandrake drink in beer, AM. 59, 1, 30.

\textit{sam \textsuperscript{3}GIR-R[M]} is described as \textit{sam as\texttimes}, a drug for appetite (KAR. 203, iv, 4, cf. i, 38: Pl. 29, K. 4566, 26).

There is a species \textit{\textsuperscript{4}GIR-R[M]-KUR-R.A} (i.e. "of the mountains") of which the seed is drunk in a virility charm, Weidner, KUB. iv, 48, 1, 5, and 31.

The medical uses of the Centaury coincide excellently. As \textit{sam as\texttimes} (appetizer) "of all the bitter appetizing herbs ... which serve as excellent simple tonics, the Centaury ... is the most efficacious" (FHS. 96).

Pliny (NH. xxv, 30) says that the leaves of Centaurion (the greater Centaury) are large and oblong, and the root is large, full of a bitter juice, and this may perhaps afford the "rind" of the Assyrian texts. IB. 2106, quoting El-Ghafeky, says that the Berbers eat the stalk after the skin or bark has been removed.

In its use for ulcers (or similar), and for its frequency in strangury or similar retention note IPG. 125: "la racine, les feuilles, les fleurs (of the Centauree etoilee, star-thistle) possedent des qualites diuretiques et febrifuges."

The synonyms in other lands for this Assyrian word are:

\textit{\textsuperscript{3}Qurbasi}, the synonym in Subari, may well be the Syr. \textit{qurtbhe}, by metathesis, which is the Greek \textit{\textit{pi}BoLOs}. This some take to be the Centaury (v. L\textsuperscript{o}w., Ar. Pf. 429.; Smith, DB. iii, 1491). It is the equivalent of the Arab. \textit{hasak}, which might perhaps be the original of "the great dadamu in Canaan" (p. 180), i.e. \textit{\textsuperscript{3}am} ...-\textit{\textsuperscript{\texttimes}ku}. \textit{samabitu} or \textit{samebitu} as synonym in Canaan for the Centaury, was taken by MA. to be the equivalent of the Aram. \textit{h\textsuperscript{b}bhai}. Cf. a-bu-\texttimes = , (a-\textsuperscript{\texttimes}a-su), CT. xviii, 3, viii-vii, 35.

3. \textit{samAllu(m)zi}, \textit{sam\textsuperscript{3}ima\texttimes}, some forms of thorn.

The third group of thorns. In MT. \textit{sam\textsuperscript{3}ima\texttimes} occurs thus : (1) Simply : ext.: Nostrils, \textdagger, in cedar oil [apply], AM. 26, 1, 3. For dry head with weak hair, with Ricinus and \textit{sam\textsuperscript{3}PAR} (nitre), mix in water and bind on, CT. xxiii, 34, 23 (dup. KAR. 202, ii, 14).

Int. (?) : alone in wine (?) drink (?), KAR. 200, r. (?) 6. In VAT. 9000, p. 181, it is a drug for misir libbi and miqit libbi (doubtful if int. or ext.).

(2) Seed: Lungs, AM. 55, 1, 4. (Note the spelling \textit{sam\textsuperscript{3}se-ma-\texttimes}, KAR. 207, r. 13.)

In MT. \textit{sam\textsuperscript{3}allu\texttimes} (\textit{sam\textsuperscript{3}allumzi}, \textit{sam\textsuperscript{3}allumza}) occurs thus : (1) Simply : Int.: with lupins, \textit{sam\textsuperscript{3}girana}, Ricinus, aloes, etc. (drink), AM. 22, 5, 7.

(2) Root : Decayed teeth, with mustard-root, apply, Pl. 23, K. 259, 13, dup. KAR. 203, i, 12.
(3) Seed: described as “a drug for a bad place”, local application, KAR. 203, i, 61, following a similar receipt for seed of Cannabis.

The meaning is doubtful, but *samallumzi* may be an anodyne, and is non-poisonous. It is difficult to find cognates for the other synonyms, but, as was pointed out on p. 182, “red fruit of asagü” coincides with the red fruit of the Lycium. *sam* Buluku might be the Arab. bula’lah, Centaurea dimorpha Viv. (FJ. 1, 406).


Long identified with the Arab. ḫarūb, Ceratonia siliqua L. (Meissner, Mvang. 1904, 3, 28), which occurs plentifully in Iraq, where, if I remember rightly, I heard it and the Acacia called indiscriminately ḫarnūb (a well-known variant for ḫarūb (cf. perhaps FJ. ii, 388, 402, 406).

I discussed this tree and the sign Kisal (carat) fully in Iraq, 1933, i, 23 ff., and will summarize the details here and on p. 193.

*Sam* Etri-Til-ла (= *sam* harubu), means “Plant of the City of Life”, with which cf. the Book of Enoch (FJ. ii, 401) which says that the carob was the Tree of Wisdom. The modern Arabs consider the carob as the home of demons (ib. 398). [*Sam*]Etri-Til-la is used once in MT., AM. 81, 5, 4.

*Sam* ḫadā = both *sam* asagu “thorn”, and the thorny carob. It is possible that we have here, owing to its connection with *sam* ḫil asaqi “thorn gum” and *sam* ḫil simfate “gum of simfate” a word for gun arabic. Pliny (NH. xxiv, 67) says that “gum acacia is produced from the white and black thorns of Egypt.... The juice is left to thicken in the pods, which are steeped in rain-water for the purpose and then pounded in a mortar; after which, the juice is extracted by means of presses. It is then dried in the mortars in the sun, and when dry is divided into tablets.”

In MT. the zid ʾtiḫarubi (“powder of carob”) is applied, ext. to the womb of a pregnant woman, KAR. 195, 13. ZID ḫa-ru-be-ē di-iṭ-lā (“pounded flour of carob”), †, drink in beer for stomach-trouble, Kū. i, i, 33. Aban ḫa-ru-pi, †, is prescribed in a poultice (AM. 15, 3, 5).

The “seed of ʾtiḫ-GIR” (i.e. carob-seed) = ZID TU-ḤUṣi “doves’ dung”, i.e. the Heb. ḫarē ṣimnīm, the carob (FJ. i, 601), thus explaining 2Kī. vi, 25 (the famine in Samaria).1 It occurs as a drug in MT. in AM. 1, 2, 11, ZID TU-ḤUṣi ša ʾtišimmar-kur-ra 2 UD-ḌU-ṭi. Simple ZID TU-ḤU occurs ʿib. 15, both being used, †, for itch in the head; ZID TU-ḤUʾ(ʾ) is [applied], †, to the womb of a pregnant woman, KAR. 195, 4, 13. The substance is to be brayed in a mortar used for lepīdimum (ʾabana ZAG-HI-li, KAR. 195, 4). Curiously ZID TU-ḤU is prescribed alongside ZID ʾiḫa-ru-bi (ib. 13) in the same recipe.

Mention is made of a “carob of the north” (ḥa-ru-bi-ē ša īlāni, to be reduced in fire, mixed in cypress-oil (and) cedar-blood, and anointed, OT. xxiii, 35, 41: and ḫa-ru-bi-ē ša īlāni, to be reduced in a fire of

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1 This explanation in FJ. is in accord with the Assyrian evidence, and is much the most satisfactory of such as have been put forward. Bochart (quoted Smith, Smaller Bible Dict., 136) says that the Arabs sometimes call a chick-pea wrongly “dove’s or sparrow’s dung” which is, more correctly, ḫurʾ al-ʾaṣāftr, a name of the herb qily (Smith, DB. i, 440). A pulp from the carob-pod is said to resemble manna (PC. vi, 433).

reeds, mixed in oil, anointed three times, and three times scraped off, 
ib. 34, 34.
(In continuation of this section on the Carob see p. 193, under kasia, 
which would appear to be a late word for the pods of the carob, which is 
a food and fodder of great value.)
5. samKiššatu, Cuscuta sp., Dodder.
K. 267, Pl. 22, vi-v, 41-2, includes this in a special register after 
the long groups of sam̃ašagu, sam̃ašarbu, sam̃abaldu, and the short one of hil 
baltī šadi:

<table>
<thead>
<tr>
<th>sam̃kiš-ša-tū</th>
<th>sam̃ubar[šab-ku]</th>
</tr>
</thead>
<tbody>
<tr>
<td>pir-ki šā n[u(?)</td>
<td>sam̃ubar[šab-ku]</td>
</tr>
</tbody>
</table>

Mat. 6, i-ii, 12-17, perhaps add something:

<table>
<thead>
<tr>
<th></th>
<th>su-ma</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>šu-ba[i(i)]</td>
</tr>
<tr>
<td>15.</td>
<td>Me-luḫ-ḫi-e</td>
</tr>
<tr>
<td></td>
<td>lu-pa-a-ru</td>
</tr>
<tr>
<td></td>
<td>šad[i(i)]</td>
</tr>
</tbody>
</table>

108860, iv, 12 (CT. xxxvii, 31):

sam̃kiš(?)-šu-tum  sam̃ubatšab šu(!)

Cf. Pl. 35, K. 4180, A, 34, sam̃kiš-šu-...

The first clue is provided by the Syr. kəšāḥād “dodder”, as equivalent 
to sam̃kiššatum (sam̃kiš(?)-šu-tum).

It is a parasitic plant which grows particularly on thorns (and hence 
its position in the lists): as Löw (Ar. Pfl. 171: FJ. i, 456) points out, 
Pliny (NH. xiii, 46) says: “we must take care, also, not to omit a peculiar 
shrub that is planted at Babylon, and only upon a thorny plant there, 
as it will not live anywhere else, just in the same manner as the mistletoe 
will live nowhere but upon trees. This shrub, however, will grow only 
upon a kind of thorn, which is known as the royal thorn. . .1 They use 
it in the preparation of wine, and it is for this purpose that it is planted.”
Löw quotes Boissier (Diag. plantarum orient. nov., second series, 
No. 3 (Leipzig, 1856), 129) as saying of the Cuscuta flavescens that it 
grows as a parasite on the Alhagi (camel-thorn) near Mosul.2 Löw also 
mentions its use in palm wine and beer. FCH. 52 says that the Dodder 
“with its tangle of reddish thread-like stems looks to the fellahin like 
the hair of an old lady dyed with henna”.

Pirki ša nu (= markas) must represent the clinging nature of the 
parsite, pirku being a bolt or similar and markas something which 
binds, although I am not sure that we can get a satisfactory composite

1 Bostock, ib. (vol. iii, 207, n. 28) says that some writers consider this thorn to be 
the Centaurea solstitialis L.
2 But this is denied, FJ. i, 456, the plant to which the Cuscuta attaches itself being 
different.
translation. Possibly the Targumic *p* rar in Pael “to tie dry ears, to untie sheaves or bundles” may suggest the unravelling of the markas, or cord, representing the tangled skein of the dodder.

*Lupáru*, obviously for *lu*báru “dress”, represents the appearance of the dodder round the plant to which it clings.

*sam subš* akku clinches the matter: šakku must be the Heb. sebhákhim, lattice-work, the Arabic šubbak, net, etc., which is exactly the appearance of the tresses of the Dodder as it twines round the plant. This synonym will, therefore, mean lit. “net-dress”.

*samkušakku*, as an apparent synonym of *sam subš* akku, should be a word of similar meaning, and here the Syr. kušá, cingulum, will provide a cognate. It occurs as *sam* bar kušakku šá pašni rapšami “rind of kušakku-with-broad-tops”, for stomach-trouble, †, Kū. i, ii, 36.


2. *Kasia*, the husks of Ceratonia siliqua L.

3. *Sila-šar, kasti, rosa, rose.*

I am indebted to *Iraq*, 1938, i, 23, for much of the following.

1. *samQulqullánu* occurs thus in the vocabularies:

(A) Pl. 18, K. 4354, xvi-xv, 15–21:

<table>
<thead>
<tr>
<th><em>iamgul-gul-la-nu</em></th>
<th><em>iamminab ka-si širi</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>iamgul-gul-la-nu</em></td>
<td><em>iamki-sa-at širi</em></td>
</tr>
<tr>
<td><em>iamšá-mi ra-pa-di</em></td>
<td><em>iamka-si širi</em></td>
</tr>
<tr>
<td><em>iamgulqa-la-a-nu</em></td>
<td><em>iamki-sa-at širi</em></td>
</tr>
<tr>
<td><em>iamša-ar st-kir</em></td>
<td><em>iamma-ar kaši širi</em></td>
</tr>
<tr>
<td><em>iamšir-gul-gul-la-a-nu</em></td>
<td><em>iambra-sa-at širi</em></td>
</tr>
<tr>
<td><em>sam</em></td>
<td><em>iamnamha-ru-u šamu</em></td>
</tr>
</tbody>
</table>

(B) Pl. 30, 79–7–8, 19, 1–7, and 11–24:

<table>
<thead>
<tr>
<th><em>sam</em></th>
<th><em>sam</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>sam a-BA</em></td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>samNUSH-ŠE-GUB-BA</em></td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>saman-zu-zu</em></td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>samša-ra-nu</em></td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>samšiš-in egli</em></td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>samgul-gul-a-nu</em></td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>sam</em></td>
<td><em>sam</em></td>
</tr>
<tr>
<td><em>sam</em></td>
<td><em>sam</em></td>
</tr>
</tbody>
</table>

(With regard to *samunzu*, *samhadilu*, *samšaranu*, and *samkurusissu*, see Landsberger, as quoted in footnote 3, below. They are probably not plant-drugs at all.)

1 The *samš* aša in-a-me group is divided from a following section (*sam* a-za*š*-aš) on K. 4398 by a horizontal line.
2 Re-exd.: it may be *ka-šir*, pl. širi, badly written.
4 *ib. 43, 3, and C, 3.*
Note particularly Pl. 36, 81-2-4, 267 + Pl. 45, 81-2-4, 472:

| 11. [samqiš-ši-in (?)] 1 eqli | 15. [samqu]gul-la-šu
| 12. [samqu]l-gul-la-a-šu | [samqu]gul-la-šu
| 13. [sam]šarbatu | sarbatu
| [šaq]balbatu | barebatu

which may be translated

11. ... of the field ... | A drug for the "blocking of the stomach"
[lamqu]lqulanu | A drug for the "blocking of the stomach"
Sarbatu-willow | A [drug] for the "griping of the stomach"

{lqulanu} may be compared to the Arab qugil, Cassia tora (Holma, Kl.B., 82), but there are two other possibilities (v. AH. 82): one, the Arab. qilqil, a plant with an aromatic seed, black, and very hard, from which the medicament qilqilan is made (Razi mentions a plant of this name known in Iraq, where the cooked seeds are eaten, and clothes made of the branches 2 (Dozy, Supp. ii, 398): the other, qilqilan, Dolichos cuneifolius (Holma, op. cit. 81).

Probably the first is correct. Cassia tora is given by Forskal (86) as coming from Arabia, and he includes it with other forms of Cassia, following it with C. fistula. Its Arab. name qulqul he applies also to C. lanceolata (ib.). IB. 1822 says that qulqul is known in Iraq where it is sown along the irrigation canals; it has seeds like haricots enclosed in pods, and ropes for wells are made from it. In point of fact, it would appear that this is the same as the qilqil mentioned above. The Arab. dijr al-akbar is given as a synonym (F.J. ii, 515).3 F.J. iii, 90, says that qulqul, according to Engler-Prantl., is also C. Sophera L., Crotalaria retusa L. In BMM. 277 it is obvious from the native names that C. obtusifolia L. (= Senna tora Roxb.) is a synonym for C. tora, an annual weed of which the leaves and seeds are used for skin-diseases, the leaves being applied to inflammations, and the seeds used on ringworm and internally as an aperient.

Now Post (Hastings' DB. i, 358; cf. also CPI. 310) considers the Cassia of the O.T. to be properly Cinnamomum Cassia Blume. Although this actually comes from China (MPB. ii, 565), there are other kinds which afford Cassia and Cinnamon, the medical properties of which two drugs are similar (BMP. No. 223). What is final is the statement in MPB. ii, 566, corrected according to p. xi): "Cassia-Rinde wird auch noch von anderen Cinnamomum-Arten gewonnen; so von C. obtusifoli-
D. Cassia in the Near East can be used for the sake of its bark like Cinnamon; indeed, Galen says that the finest Cassia may be substituted for the lowest quality Cinnamon. The evidence for Cassia buds may be seen to be equally important; Cassia-buds are "the unexpanded flowers, when they have attained about a fourth of their complete size, of a species of Cinnamomum" and they "have the appearance of nails with heads", and "the uses... are the same as those of cinnamon and cloves" (PC. vi, 346), the latter word being the French clou, a nail. MPB. ii, 566, says, "Die die unreifen Früchte einschliessenden abgeblühten Perigone des C. Cassia oder verwandter Arten kommen als Flores Cassiae (Zimtblüthen) in den Handel und werden zur Darstellung des Zimmtwassers, sowie zur Gewinnung von ätherischem Oel benutzt."

Cinnamon bark is a carminative, astringent, and aromatic stimulant, and its oil has aromatic and antiseptic properties, and is a powerful local stimulant internally. Cloves, the dried flower buds of Eugenia caryophyllata, are aromatic, stomachic, carminative, and antispasmodic, and the oil is an anodyne for toothache. Oil of Cassia from Cinnamomum Cassia Bl. is aromatic and carminative, and the oil is a powerful local stimulant (P., under the various headings).

The uses of šam-gulgullànu in MT., although rare, coincide well. AM. 4, 1, 24, prescribes a mixture of ...-la, leek, and seed of šam-gul-qu-a-ni for rubbing the head, lest grey hairs should appear, a prescription corresponding to IB. 1236 where he says that senna dyes black. Cassia-bark (Cinnamomum Cassia) contains tannic acid, which, with a persalt of iron, gives a decoction of blackish-green (BMP. No. 223). "Green" šam-gulgullànu is to be put on decayed teeth (Pl. 23, K. 259, 3, dup. KAR. 203, i, 3), which corresponds to the immature Cassia-buds being used like cloves above, clove-oil being a well-known remedy for toothache. The root of šam-gulquia-ni 1 is one of the six drugs 2 to be applied locally on a cloth to the uterus of a woman who has been given noxious drugs, and her uterus has become full of fluid (KAR. 194, r. 4, 31). The bark of Cinnamomum zeylanicum is used for uterine hemorrhage (BMP. No. 224); Diosc. (i, xii) speaks of the drug from Cassia being astringent (locally to the eyes). On the other hand, if I am right in translating šamšami misir lûbbi as "a drug for the blocking of the stomach", the use of Cassia-leaves as a mild aperient fits well. In the letter ABL. 450, 8, kulkulanu occurs with šam-abrùša, to wash hands and feet, and in the same letter (l. 11) it appears as šam-kulkulanu with šùli (pine-turpentine) to be bound with others on part of the man's dress. I ditto (= narugu) of zir qu-ul-qu-la-ni occurs in the Apothecary's List (Clay, PBS. ii, 2, No. 107, iii, 48).

Note, however, that the Cassia of the ancients must not be confused with the Senna of modern times. Senna, according to Carl Martius

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1 šam-Gulgulla (unknown) occurs Pl. 39, K. 8287, ii, 10, and AM. 31, 7, 6, to be applied in the latter example locally for some sort of pustule.

2 It is difficult to be certain of these drugs, since šul-Lû "vinegar", which heads the list, might make the total seven, and not six. The others are willow, bone (all three "reduced"), a mineral (?), fruit of šadani and chamomile.
cannot be traced earlier than the ninth to tenth century A.D. Western Europe owes the introduction of this drug to the Arabic physicians, and Isaac Judreus, a native of Egypt, who wrote about A.D. 850–900, mentions senna, saying that the best came from Mecca. But at all events we can take it that *samqulqullanu* is a form of Cassia with a medicinal bark, and with this we can examine the synonyms:

(a) *sam* *Kisat širi, samkasī širi, sampi (?) širi.*

Sayce (ZK. ii, 215) was right in comparing *kisat* with *kisiti* "bark, rind" (*kisiti terini, Anp. AKA. 284, 87), from *kasū* "to cover" (Syr. *k protecting "covering"), and we can therefore hardly be wrong in seeing in the above synonyms meaning "sloughed skin of a snake" the alchemists' term for the Cassia-bark thus stripped. Here we have the history of our word Cassia, as Küchler saw *(Kit. 73)* (i.e. the Aram. *besel*), which was ultimately to find its philological descendant in the late Babylonian *kasia* (not with the meaning Cassia, but the husks of the *Ceratonia siliqua*, which latter Syriac adopted in the form *qasyā,* the Heb. *q* *šī* *dāh of Ps. 45, 9, may have a different history).

Other synonyms are (a) *samminib kasi širi* ("fruit of the sloughed snake-skin", Cassia); (b) *samwir kisat širi* "seed of the sloughed snake-skin", Cassia); and (c) *ār samkisir, the ar* perhaps being the ordinary *ār = PA (tops) (it is hardly likely to be the same as the a-a-ar in a-a-ar ilī "chameleon" or *sam*-a-ar *furasi* "anemone").

An interesting parallel to *samkasi širi* is the Arabic *sallībih* "peeled", with the same meaning as the Heb. *q* *šī* *dāh, Cassia, closely connected with *silīh, the sloughed skin of a snake. Indeed, there is a drug in IB, 1210 *silīh al-hāyyāh, sloughed skin of a snake, which, when boiled in vinegar, is said to cure toothache, which looks much like our Cassia on p. 190 (for hollow teeth), as though the Assyrian synonym "sloughed skin of a snake" had been adopted. 3

(b) *samNambaru sānu. Nambaru* is philologically perhaps parallel to the form *nab-ra-ru-ū* (Shalm. Mo. iii, R. 8, 100; Amiand and Scheil, *Les Inscri. de Salm. 42*). If we derive it from *majdaru, the -u at the end is difficult to explain: if from *harū* ("to dig"), it might possibly refer to the scraping of the bark: if from *majdaru, like *nuţurtu* ("the slit

1 The Assyrian naturalists were of course well aware of the habit of the snake to slough its skin; cf. GE. xi, 289, *ittadi qulipt1t1n, of the snake in the Epic; cf. Albright, RA. 1919, 189.

2 Löw, *Ar. Pf.*., p. 348, makes this a form of *C. zeylancium* var.

3 Since *samkasi širi* is called "a drug for the disease rapadi" on p. 188, we can discuss this word here. It occurs CT. xix, 4, iii–iv. 3–10:

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Obviously *rapadu* is connected with *sa *"muscle" (or sim.). It is included in *MT. thus: apply (to eyes) *samra-pa-di (a drug for rapadu) ina curi sēparri (on a bronze knife), A.M. 8, 1, 23. Note also *sam* *ra-pa-di = . . . [m]a-a-te, Pl. 46, K. 4184, r. 8.
plant”, *Asa foetida*), it is equally difficult. Yet the “red” (*sāmu*) suggests a red bark, perhaps like cinnamon.

It might be added here that “cinnamon” is quoted in *Rev.* xxiii, 13, as coming from Babylon, but there is an obvious distinction between this and Cassia in the offering made by Seleucus II (*FHP.*, 1st ed., 1874, 467), which included two pounds of *kasia* and also of cinnamon.

We can now go on to No. 2.

2. *Kasia* in the late Babylonian contracts, the husks of *Ceratonia siliqua* L.

Although this word is connected philologically with *tāmkasi širi*, it is an entirely different substance.

After the Fall of Nineveh in 612 B.C., when Babylon rose to power, we begin to find in the Babylonian contracts of this period a salable commodity called *kasia* (*ka-si-iā ka-si-iā, kās-si-iā*). It was measured by *mašišu*, *gur*, or *pi*, and often sold along with ŠE-BAR (barley). It has no determinative, and must be kept distinct from (a) *tāmkasi širi*, Cassia, and (b) *kasi šar*, rose, neither of which have any botanical connection with it. These contracts on which it occurs are dated in most, if not all, of the months of the year, which suggests that it can be stored away dry like grain (cf. particularly Clay, *BEA.* viii, 35, a contract dealing with the period Cambyses 6 to Darius’ accession, and recording amounts of 2 *gur* of *kasia* for the month Adar, 2 for Tebet, 4 for Sebat, and various other amounts totalling 16 *gur*).

*Kasia*, from its association with barley, and the way in which it is sold, is obviously a foodstuff, and, in spite of the persistent, almost non-Assyrian, way in which it is spelt with a final -a (it may perhaps be borrowed from a foreign source), it should, at first sight, be connected with *kasi* “to cover” (like *tāmkasi širi* and *tāmkisat širi*). It cannot, however, be the drug Cassia here, since it would be ridiculous to weigh out such a drug alongside barley, and, still more, in such large quantities.

Now, however strange it may seem, I suggest that this Babylonian *kasia* is the same as the husks which the Prodigal Son ate, the *Ceratonia siliqua* L. (see p. 186), a member of the tribe of *Cassiae* (“anomale Gattung der Cassieen”, *MPB.* ii, 898: included in the Cassia (Senna) family, *FP.* 2 i, 440). The importance of the pods as a foodstuff and fodder for animals is well known: “Seine Früchte . . . werden von Thieren und Menschen gegessen und bilden einen namhaften Handelsartikel” (*Hehn*, 440). The husks “are eaten with relish by the common people; and are used extensively by them as an article of sustenance. We had them dry on board of our boat on the Nile in January: steeped in water they afforded a pleasant drink” (Robinson, *Research* ii, 250, note). “The ‘husks’—a mistranslation—are fleshy pods somewhat like those of the honey-locust-tree, from six to ten inches long and one broad, lined inside with a gelatinous substance . . . In Syria, where we have no swine, or next to none, the pods are ground up “[boiled] “and a species of molasses expressed, which is much used in making certain kinds of sweetmeats” (*Thomson, LB.* 21, cf. *FJ.* ii, 406: *FP.* 2 ii, 440: *IB.* No. 762). Such a pod is in my possession, about six inches long by one broad, and weighing about $\frac{1}{2}$ ounce, and it is dry, hard, and of a deep brown colour.
We can follow this up philologically. Such a value for the Bab. kasia suggests a comparison with the Syr. kśdāya, tegumentum: the Neo-Syr. qasyd is a word for the Acacia (PS. 3678), a tree which has no little similarity with the Ceratonia, and this is paralleled by the Assyrian botanist in his inclusion of the ħarubu (carob, Ceratonia) among the thorns, below the Acacia (p. 180). Indeed, one of the Arabic words for Acacia arabica Lam. is qarad = κερατία, FP. 2 i, 442. IB. 1822 says that the Cassia fistula is like the fruit of the carob, and FJ. ii, 515, notes that it is called ħermub hindī “Indian carob”. The modern scientific view parallel with this is stated above.

So far, however, the evidence for the equivalence for the kasia with the sugary pulp of the Ceratonia-pods is slight, but we can now pursue it more definitely through an interesting channel.

The seed from the pod of the Ceratonia siliqua, κερατία, has always been supposed to be the origin of our carat weight (3·163 grains in 1877). The Romans had the siliqua weight of 2·9 gr. (Smith, Dict. of Class. Ant., ii, 455, and for its subsequent discussion, Pauly-Wissowa, Reallexicon, iii, A, 61: xi, 266). 1 By the Arabs the carat (qird) was reckoned at 4 gr. (PB. xith ed., v, 301, s.v. “Carat”). For our purpose the difference between them is negligible.

Now in OTC. 128 I inferred that the kisal weight was 3 grains, since it had to be inserted between the š (grain) and the shekel (180 grains); the natural conclusion was that, just as the Assyrians had a sexagesimal system of enumeration in their scale of heavier weights, so should we find it in their lesser weights; the ṣillu (talent) was 60 mana, the mana was 60 shekels, and therefore on this assumption the shekel would be 60 kisal (like the gin-du “small shekel”), Thureau-Dangin, RA. 1921, 137), which left us with 3 grains to the kisal. The kisal would then coincide with our carat weight (a point which I did not at the time notice).

But in early times this sign kisal is used with the det. “tree”, and we can follow this up:

As far back as Gudea ḫisal is included in offerings (ISA. 177, Cyl. B., iii, 18 ff.), with honey, ḫimetu-ghee, wine, grain (mixed) with milk, fig(s) . . . (ḫm-NIG-GIN-NA), milk which . . . (ga-sag-ba-dim-ma), dates, and ḫ-DINGIR-GESTIN-DU₁₃-DU₁₃. 2 Since it is thus included, it cannot represent a tree, but must be some form of tree-produce (fruit otherwise), and, following up our theory that the kisal was the carob or carob-seed, it would be easy to see in ḫisal the sweet pulp produced from the Ceratonia, used thus, not unnaturally, in offerings.

Of the Ceratonia, MPB. ii, 898, says “Nur eine in den Mittelmeerlandern (namentlich den östlichen) heimische und cultivirte Art; C. siliqua L.” We need, therefore, have no hesitation in accepting the kisal as the seed of the Ceratonia, and the origin of our carat weight.

(The ideogram is tab (= tuamu or ahu “twin” or “brother”)

1 Siliqua occurs in Virgil and Pliny, the latter calling the carob by this name. Is it conceivable that our word kisal, by a not uncommon variation in words containing the letters l, m, n, r, is the origin of the word siliqua?

2 I see that I have slipped in reproducing this word in Iraq, 1938, 27. It should be τūr-τūr (i.e. DU₁₃-DU₁₃), of course.
enclosed in a "house", i.e. the seeds in the pod. This is entirely distinct from SILA (= kasi šar "rose"), this sign being made up of RA (tops) enclosed in a "house".

(3) SILA-ŠAR, kasi šar, the rose.

Obviously distinct from the two preceding. The reading kasi is certain from the pun in Maqlû, v, 34, kima kasi šar likusû kišpu-sa "like the kasi-plant may her sorcery cover her". The evidence from MT. is very strong in favour of this being the rose: in prescriptions it is of very frequent occurrence, esp. in the phrase "water of kasi šar" as a medium or vehicle for drugs (although it should be noted that it is not strikingly used, as in other pharmacopoeias, to counteract the taste of unpleasant drugs): the not uncommon preparation of this plant in MT. with heat (not usual in other plants in MT.): the special phial for it (ummar, parallel to one for "blood"—why?) and above all, the very small quantities prescribed, on one occasion as little as one carat (3 grains), showing how precious it was. It is noteworthy that the adjectives applied to it are frequently in the plural.

The following are the details of the above evidence. Kasi šar occurs in MT. thus:

(1) Simply (passim, these being approximately half the total of its occurrences): ext. Head seized with asû ri-ri, bray fir-turpentine, kasi šar, and salt, and rub them on head in water, AM. 1, 3, 8 (dup. KAR. 202, 35) similar to the receipt given by Pliny for dandruff, etc. (NH. xxiv, 120); head [rub] with opium, and kasi šar BIL-ti in cedar-oil, AM. 4, 2, 5: †, [CT. xxiii, 38, 34], dup. TCPP. 39. Hand of Ghost, bind head with poultice, including kasi šar, fir- and pine-turpentine, AM. 93, 1, 15. Eyes, "reduce" kasi šar alone, steep in cow's [milk], or human milk, and bind on, AM. 8, 1, 22; alone, bind on, AM. 11, 1, 23: bray antimony, apply, wash in water, [apply] kasi šar, AM. 8, 6, 3: with alum and nitre (šamPAR) bray in himetu-ghee [and apply], AM. 15, 6, 8: in milk (alone?) apply, ib. 11: †, including cantharides (prob. to produce blistering) apply (AM. 16, 1, 8: †, boiled, applied in oil and white wax, AM. 19, 6, 7: †, roasted, applied in fat, wax, and himetu-ghee, ib. 10 (cf. 15). Nose, †, AM. 25, 6, 7, PRSM. 1924, 63. Ears, for water, blood [or pus?] in the ear, bray kasi šar galute (roasted) alone, mixed with . . ., insert [in wool], AM. 38, 4, ii, 12 + 34, 4, 4 (JRAS. 1931, 13). Foot, or knee, knead kasi šar with fenugreek and Lepidium in water of kasi šar, bind on, AM. 74, 33. Chest, †, bind on, AM. 49, 1, iii, 8. Bruises (diššu) grind with mustard and Lathyrus, add Lepidium, steep in wine, and [apply], AM. 96, 1, 12. Blains (šigša), †, poultice, AM. 93, 2, 3. A blow (mišitu) on the mouth, †, boiled in strong beer, poultices, AM. 79, 1, 7: (mišitti), AM. 76, 5, 7: for umšaši (sores of some kind), †, AM. 17, 5, 9. Blister (sağbana) (ši-ku-(u)-ti), boil in beer with parched Lepidium, bind on, AM. 75, 31, dup. (practically) of KAR. 192, r. iii, 19. Urinary, "reduce alone, . . . apply to front of penis," AM. 62, 1, 11, 9.

Enemata: †, AM. 94, 2, 9, cf. 56, 1, r. 7. Prob. enema with salt (etc.(!)), stomachic, AM. 43, 6, 4.

1 Possibly an abbreviation for "blood of cedar".
Suppository: \(\dagger\), (šamma-ka-si-i spelt out), in fat of kidney of male sheep, AM. 57, 5, r. 7.

Pessary: childbirth, \(\dagger\), boiled in oil, poured into uterus, and inserted on pessary, KAR. 194, 14. Female ailment, \(\dagger\), mix in water, insert in uterus, ib. 27.

Int.: [Cou]gh, dry green *Arnoglosson, … kasi šar hashtute (pounded, v. qaliti “ parched ’”), drink, AM. 80, 1, i, 2: [coug], eat kasi šar pa’zutum, \(\dagger\), in oil and honey, AM. 80, 1, 5. [Chest], spitting blood, \(\dagger\), drink in kurunu-beer, etc., AM. 83, 1, r. 20. Stomach, \(\dagger\), prob. drink, AM. 39, 1, 31. Sorcery, \(\dagger\), drink in wine or beer, AM. 89, 1, 5.

Fumigate: Ears, \(\dagger\), AM. 33, 1, 31, a dup. of 35, 1, 7, and 38, 2, r. 10. MAŠ-TAB-BA, \(\dagger\), AM. 64, 1, 28.


(2) ZID (powder): ext.: Head, \(\dagger\), 10 shekels, bind on COT. (iii, 32, 10), dup. TOP. (ii, 33, 12, 10), dup. TCPP. 21 (note in CT. xxiii, 42, 9, that, of the six drugs bound on head, four are defined by ZID, but the 10 carats of kasi šar and 10 carats of sesame-mucilage are not). Temples, pound, sift with Euphrates gypsum, \(\dagger\), steep in water of kasi šar, bind on, OT. xxiii, 44, 3. Eyes, 6 carats, \(\dagger\), bind on, AM. 8, 1, 14. Childbirth, \(\dagger\), bind on, KAR. 195, 12. For [swelling or sim.], \(\dagger\), ZID leasi SAR BIL! (see p. 196), KAR. 192, r. iii, 15, and ZID kasi šar, ib. 23.

(3) Seed: ext.: For ašû (appetite), \(\dagger\), anoint, in oil, AM. 64, 1, 22 (dup. 55, 8, 1, and sim. to KAR. 202, 37; RA. 1929, 70).

Int.: Strangury, undoubtedly drink, \(\dagger\), AM. 59, 1, 13, dup. 89, 4, 7.

(4) ŠE-RÛ (shoots): ext.: Chest and loins, poultice, \(\dagger\), AM. 51, 5, r. 4.


Int.: Strangury, with “water of dates”, drink in milk, AM. 59, 1, 21: mix 10 carats with 10 shekels of BÁR-GA-oil and beer, let 15 shekels of seed of *Arnoglosson soak therein for the night, and drink next morning, ib. 27. Stomach, \(\frac{1}{2}\) qa water of dates, \(\frac{1}{2}\) qa water of kasi šar, \(\frac{1}{2}\) qa of …, AM. 39, 1, 9. Anus-trouble, apply squeezed grape-juice in water of kasi šar, after drinking Solarum in beer and nitre in beer, and bathing in water of Vitex, AM. 58, 2, 6.

Not as medium, and alone: ext.: To wash eyes clean after treatment, AM. 5, 5, 9: 16, 3, 3: (prob. simply, 22, 2, r. 8). To … head, after treating (tesir) head with cow’s urine and washing it in beer, AM. 5, 5, 8. Nostrils, after cleansing mouth (paralleled by “water of Vitex” for the nostrils two lines further on), AM. 24, 5, 3.

Quantity: 5 qa, AM. 49, 4, r. 5.

1 Note also plural kasi šar for the more usual singular, as also in KAR. 192, 1, 16 and 48.
(6) The adjectives applied are of two kinds: (a) to \textit{kasi šar}, (b) to \textit{mē kasi šar}, the water.

(a) Applied to \textit{kasi šar} (and \textit{šamsəhlē}), the adjective being always in the plural: \textit{qalute}, \textit{qaluti}, \textit{AM.} 28, 8, 8: 38, 4, ii, 12: 44, 1, ii, 6: 98, 2, 8: \textit{KAR.} 197, 11: \textit{qalati} (\textit{v. ḫaslāti}), \textit{AM.} 80, 1, 2: ḫaslūti, \textit{AM.} 11, 1, 2, 3 (\textit{Sum. KU-MAL}: \textit{pa'zutim}, \textit{AM.} 80, 1, 5 (\textit{cf.} 11, 2, 24): \textit{kabruti}, \textit{Kū.} iii, i, 15.

(b) Applied (as far as I know) only to the “Water of \textit{kasi šar}”: \textit{sikruti}, \textit{AM.} 11, 2, 41: \textit{sikruti} [bJaIJrute, \textit{AM.} 80, 1, 10: \textit{sikruti BIL-ti, Kū.} i, i, 12: \textit{BILP!-ti, AM.} 62, 1, ii, 10: \textit{BILP!}, applied to \textit{zid kasi šar}, \textit{KAR.} 192, r. 2, 15:

(c) There appears to be only one possibility of coincidence in (a) and (b) where the word \textit{sikuti}, \textit{KAR.} 192, r. 2, 19, applied to \textit{kasi šar}, reappears in \textit{BIL} \textit{st. sikuti}, \textit{AM.} 75, 31, applied to... \textit{šar}, practically a duplicate. Although \textit{sikuti} may be regarded as an adjective to \textit{kasi šar}, the \textit{BIL} in the second example suggests that it may be read [mē \textit{kasi}] \textit{šar}; otherwise we must accept that \textit{BIL} can be applied to both \textit{kasi šar} and its water (by comparison with (b) above).

With these examples from \textit{MT.} we can compare the use of the rose, and rose-water in other pharmacopoeias.

Pliny, \textit{NH.} xxii, 73, says that the rose is astringent, and the petals, flowers, and heads are used in medicine, the diseases for which these are prescribed being of the head, ears, mouth, gums, tonsils, stomach, rectum, and uterus; the flower, taken in oxycrate, arrests fluxes in females and blood spitting; the seed as a liniment for toothache, as a diuretic, and, inhaled, to clear the brain. \textit{Diosc.} i, cxxv, says that roses are cooling and astringent, and that the liquor of roses cooked in wine is good for headache, eyes, ears, gums, the anus, and the womb, and the flower found in the middle of roses is used dry for fluxion of the gums. In Syriac Medicine (\textit{SM.} ii) we find roses used \textit{ext.} for eyes (88), mouth (179), foul breath (668), liver (as plaster) (370), sores (693), and \textit{int.} for chest (276), stomach (332): they are described in their use as “fresh” (\textit{raqyā}), “dried” (\textit{yabbīštā}), as “oil of roses” or “rose-water”, or as flowers (\textit{habbābē dhē wardē} (see \textit{SM.}, index)). In India (\textit{BMM.} 236) rosebuds are regarded as astringent, and as a cardiac and cephalic tonic, and the petals relieve uterine hemorrhage, and are used locally for aphthae.

The oil or attar is used to disguise the unpleasant odour of certain ointments (\textit{IMP.} 526). This in general will be seen to coincide well with \textit{MT.}

But in addition we can learn much from the adjective use applied to \textit{kasi šar} (above). \textit{Qalūti}, lit. “parched”, “fried” (as is proved by \textit{AM.} 36, 1, 7, and 38, 4, ii, 3, where “thou shalt parch” (\textit{tagallu}) like \textit{še-SA-A} (parched corn) is said of \textit{kasi šar}. Note Pliny, \textit{NH.} xxii, 73, “the petals, charred, are used as a cosmetic for the eyebrows; and the thighs, when chafed, are rubbed with them dried; reduced to powder, too, they are soothing for defluxion of the eyes.” He also (\textit{ib.}) gives three methods of drying the petals, one of which is that the “unglets” (the white part of the petals) are removed from the petals, and pounded. Here, in this passage from Pliny, we are given not only the method of parching, but are told of the “powder” (see p. 195), and of the “pounding” which will coincide with the Assyrian \textit{pa'zutim} and ḫaslāti.\footnote{Kabruti is uncertain.}
On the other hand, in the case of “water of roses”, we find it employed thus: sikeruti “heated”, s. bahruye “steaming hot”, and s. bil-ti “heated warm” (or should it be “fresh”?). Sikeruti, if it does apply in both (a) and (b) can hardly mean “powdered” as its root suggests, and hence it may be that we are wrong in thinking that it applies to (b). Whether bil means “hot”, “dry”, or “fresh” is uncertain.

In *MT.*, as in other pharmacopoeias, we have to distinguish between the simple rose and the attar or rose-water. Actually this appears to have been clearly noted by the Assyrian doctors, who are precise in their use of “water of rose”. *PC. xx*, 1841, *a*159, gives the details for the various uses of the rose in medicine: the petals of *Rosa gallica* and *R. damascena* are supplied for medical purposes, the buds being collected before they expand; the calyx and lower part of the petals are dried, about 2,000 flowers yielding 10 lb. of dry petals. The chief employment of the conserve of *R. gallica* is as a vehicle for other medicines. It is the *Rosa centifolia* which is used for the rose-water, the petals of which being plucked when the rose is full grown are dried in the open air and not in an oven (desiccation impairs their fragrance, while heightening that of *R. gallica*). A syrup is made of them, but their chief use is by distillation for rose-water, 100 lb. of rose-leaves yielding less than three drachms of attar.1

An acid infusion of roses is made with red rose petals and dilute sulphuric acid and boiling water, a vehicle for saline purgatives, quinine, *etc.* The confection of roses is made from fresh red rose petals, which are beaten, and then refined sugar added and the whole rubbed together (used as a vehicle in the preparation of pills). A confection of the hips of *R. canina L.* is made by depriving them of their seeds, beating to a pulp, adding sugar and rubbing the whole together (*WPI. 82*). For the Arabic conserve with sugar or honey, see *FJ. iii*, 209.


Philologically, if we accept kasi šar as the Assyrian word for the rose, we may see in it a connection with the word kasi “to cover” from the numerous petals which enclose the “seed”, just as the *Rosa centifolia* is so called from the number of its petals.

To sum up these three different plants:

1 *sam*Kisašiširi, *sam*Kasiširi “snake rind, covering” the equivalent of *sam*qulqullanu, the Arab. qulqul, is the *Cassia tora*.

2 *Kasia*, occurring spelt out so often in late Babylonian times, and used as an offering as far back as the time of Gudea (written then with the ideogram *Kisal* which represents the pod with its seeds and

---

1 For a description of the preparation of rose-water, see *Jackson, JRAS.* 1839. For the use of the terms in Arab medicine see H. Kroner, *Zur Terminol. d. Arab. Med.*, 1921, 47 ff. *FHP.*2 262 says that the ancients did not make attar of roses, the “rose-oil” of Diosc. being a fatty oil in which roses had been steeped. But this is hard to reconcile with the persistent mention of “water of roses” in *MT.* (if my identification is correct). Nisibin was famous for its rose-water in the fourteenth century (*ib. 233*), and there is no reason to suppose that attar was a discovery only of the second millennium A.D.
gives us our carat-weight) are the edible husks of the *Ceratonia* (or the treacle expressed therefrom).

(3) *Kasi šar* is used constantly in Assyrian medicine for the rose, in similar prescriptions to those of Pliny and Dioscorides, and defined by the adjectives "parched", "pounded".

Here, for want of a better place, we can insert a group from Pl. 30, 79-7-8, 19, 11, 11-24, which follows a group for *samqulqulanu* (Cassia tora, p. 188), and *samgiranu* (p. 351):

```
11. sam-e-riš-ti kasi šar
    samkál mar-bu
    samnur-ra
    samžir rē-murri

15. samNE — A
    [sam] ... KA-RU-RU ... ŠAB ... -gu ... -tu

20. ...
```

1. *Eristi kasi šar* "scent of the rose", given here and Pl. 21, K. 267, vi-v, 4, as equivalent to *ladiru*, which, in the last-mentioned text (in l. 5) is the fenugreek (p. 64). *Eristi kasi šar* (possibly with the det. *ti*) occurs in *MT.* (*AM.* 1, 3, 11) in a head prescription; Pliny (*NH.* xxiv, 120) recommends fenugreek with wine and nitre for ringworm and dandruff, and it may therefore be that "eristi kasi šar is only another word for "fenugreek", there being some fanciful connection by smell which Post, *FP.* i, 317, says is pleasant, but *VK.* 534 disagreeable.

Of. lipu eristi sa rubu~ kit-[um], which, literally translated, is "fat of the scent of the excrement of a cat (AM. 24, 1, 6), for some form of facial paralysis)." If *kittum* = the Syr. *qattti* "cat" we might see "civet".

1. The detailed way in which this Assyrian drug is described indicates something unusual: *eristi* "smell" and *rubu* "dung" are insistent on a peculiar meaning. The prescription in which this *hapax legomenon* is used is apparently for hemiplegia with paralysis of the mouth, etc. "If a man’s mouth hurts him, it being twisted to the right, so that he [cannot speak, his speech he cannot control (?), for six days thou (?) shalt make his diagnosis (?) (MAS-MAS = aasQ.su); on the seventh day [prepare the prescription (7) ...

... doves’ dung (= *Ceratonia siliqua*), wax, fat of *rubus kit-[um]*, which, literally translated, is "fat of the scent of the excrement of a cat (?) ... his eye (?) and his mouth [thou shalt anoint (?)] ... the physician ..." Cf. the Syr. "unguent.""] which is good for every kind of pain, and for rigidity and for paralysis of the face, consisting of terebinth gum, wax, ammonical incense, oil of the fat-tailed sheep, boiled honey and old oil, to be smeared on (SM ii, 187). Lamy (HD. 242) says that civet comforts the spirits, and is good against all diseases of the head, brain, and womb; put up in a pessary or piece of sponge it prevails against hysterical fits and vapours, and put into the ears with a little cotton it helps the difficulty of hearing; and it is an anodyne and good for colic in children, if applied to the navel. According to *IB.* 1091 it dries abscesses externally and eases pain. *EB.* xith ed., s.w. "Civet-cat", says that the zibeth (Viverra zibetha) is a widely distributed species extending from Arabia to Malabar, and that civet is a fatty substance poured from the glands in the Civet-cat, a deep pouch in the neighbourhood of the genital organs.
here. (Can ladi[ru], by any chance, be read lat[i]ru as an incorrectly heard Arabic word al-īṭr “attar of roses”?)

(2) īamLadiru: see īamsāmbaliku, p. 64.

(3) īamKal mar̲h̲u; in medicine (A.M. 5, 8, 7) as ZID.ZID (powder) īkal mar-ši, for kurara (itch or similar) in head. Cf. Arab. maraḥa “anoint”.

(4) īamMurra = īamskarān... This must be the reading, since īamzīr rūšš ( = murrū) is in the next line. The connection of “myrrh” with some form of “vine” seems impossible, and I can only suggest that we have here some reference to the addition of myrrh to wine. Cf. Pliny, NH. xiv, 15, on the perfuming of wine with myrrh. We might possibly restore it īamgeṣṭin. gīr ( = amurdirnu) since we have “scent of the rose” above, and patilutum “bramble” below.

(5) īamNE-A, I have suggested īam-pē-[šu (?)] as a restoration of the Semitic, on the grounds that īgeṣṭin.ne (bil) = pillum (D. 210, 15).

(6) īamPatilutum: cf. Syr. p'tal, rubus, which fits in well with the possibilities of the others. (The remainder are uncertain.)
XI

THE "HOT" PLANTS
MUSTARD, PELLITORY, NETTLE, ROCKET, RADISH

A. ʿsamHar-Ḥar, ḥaldappanu, Sinapis, mustard.

Pl. 20, K. 4216, 4–15:

<table>
<thead>
<tr>
<th>Enum.</th>
<th>SAMHAR-ḤAR</th>
<th>SAMHAR-ḤAR</th>
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<tbody>
<tr>
<td>5.</td>
<td>ʿsamha-si-sa-a-nu</td>
<td>ʿsamhal-dap-pa-a-nu</td>
</tr>
<tr>
<td>6.</td>
<td>ʿsamha-la-me-su</td>
<td>ʿsamhamdap-pa-a-nu</td>
</tr>
<tr>
<td>7.</td>
<td>ʿsamHAR-ḤAR</td>
<td>ʿsamku-[uš-su]</td>
</tr>
<tr>
<td>8.</td>
<td>ʿsamTUR-RA</td>
<td>ʿsamhal-dap-pa-[a-nu]</td>
</tr>
<tr>
<td>9.</td>
<td>ʿsamu-ti-me-su</td>
<td>ʿsamhal-dap-pa-[a-nu]</td>
</tr>
<tr>
<td>10.</td>
<td>E(?)-NE(?)-ŠA-E(?)-E (?)</td>
<td>ʿsamhal-lu-la-a</td>
</tr>
<tr>
<td></td>
<td>ʿsamku-[uš-su]</td>
<td>ʿsamhal-dap-pa-a-nu</td>
</tr>
<tr>
<td></td>
<td>ʿsamku-[uš-su]</td>
<td>ʿsamku-[uš-su]</td>
</tr>
<tr>
<td>11.</td>
<td>ʿsamkU-[uš-su]</td>
<td>ʿsamku-[uš-su]</td>
</tr>
<tr>
<td></td>
<td>ʿsamku-[uš-su]</td>
<td>ʿsamku-[uš-su]</td>
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<td>ʿsamku-[uš-su]</td>
<td>ʿsamku-[uš-su]</td>
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<tr>
<td></td>
<td>ʿsamku-[uš-su]</td>
<td>ʿsamku-[uš-su]</td>
</tr>
<tr>
<td>15.</td>
<td>ʿsamn-ta-[a-a-nu]</td>
<td>ʿsamn-ta-[a-a-nu]</td>
</tr>
<tr>
<td></td>
<td>ʿsamJAR-JAR</td>
<td>ʿsamJAR-JAR</td>
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<tr>
<td></td>
<td>ʿsamJAR-JAR</td>
<td>ʿsamJAR-JAR</td>
</tr>
</tbody>
</table>

Pl. 47, 42339, 6, gives ʿsamHar-Ḥar = šu (i.e. harharu). For an instance of ʿsamHar-Ḥar see AM. 91, 4, 7.3

Smith, CT. xxxvi, 31, 108860, iii, 51 ff.:

<table>
<thead>
<tr>
<th>Enum.</th>
<th>SAMHAR-ḤAR</th>
<th>SAMHAR-ḤAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>55.</td>
<td>ʿsamšad-li ti (?)</td>
<td>ʿsamšad-li ti (?)</td>
</tr>
<tr>
<td>56.</td>
<td>ʿsamru-uš-ru-šu</td>
<td>ʿsamšad-li ti (?)</td>
</tr>
<tr>
<td></td>
<td>ʿsamrusu-šu-šu</td>
<td>ʿsamšad-li ti (?)</td>
</tr>
<tr>
<td></td>
<td>ʿsamšad-li ti (?)</td>
<td>ʿsamšad-li ti (?)</td>
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<td>ʿsamšad-li ti (?)</td>
<td>ʿsamšad-li ti (?)</td>
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<tr>
<td>60.</td>
<td>ʿsamšad-li ti (?)</td>
<td>ʿsamšad-li ti (?)</td>
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<td></td>
<td>ʿsamšad-li ti (?)</td>
<td>ʿsamšad-li ti (?)</td>
</tr>
</tbody>
</table>

This was identified in AH. 62 with Sinapis, mustard. The group occurs thus in MT.:

(a) ʿsamHar-ḤAR:

1. Simply: ext.: Eyes, †, boil and apply in oil and white wax, AM. 19, 6, 8. Ears singing, †, apply in cedar oil, AM. 33, 1, 24. Temples, bind on in LÚ-TIN-NA-beer; CT. xxiii, 41, 10, dup. KAR. 188, r. 17: with mint in beer, bind, CT. xxxii, 42, 22. Anus-trouble (haemorrhoids †), †, uncertain use, AM. 58, 2, 9. For spitting a white phlegm, †, poultice AM. 50, 3, 3 (i.e. a mustard-plaster). Lung-trouble, †, poultice, AM. 49, 1, 2. Swelling, †, poultice, AM. 73, 1, 19; bind, AM. 96, 1, 12. Foot-trouble, †, bathe, AM. 69, 2, 8. Lassitude, †, bind on, AM. 52, 5, 15. “Heat of the day” (TAB-UD-DA), anoint with garlic in honey and oil,


2 It is difficult to see why ʿsamHar-Ḥar should be given as equivalent to ʿsamkaran šelbi, Pl. 22, viii–vii, 52.
KAR. 203, i, 54. Ghost, †, anoint in cow-fat, AM. 88, 2, 10: †, anoint in oil, KAR. 56, r. 11.


Noticeable as emetic: "When a man's inside 'eats' him (i.e. hurts), drink in beer with salt, or alone in beer or water" (Kū. i, ii, 1–2). For šimit šāši (flatulence), with garlic, to be drunk in honey, oil, and kurunnu-beer, KAR. 203, iv, 10. To stay menses, †, drink in beer, KAR. 194, iv, 25.

Enema: Stomachic, †, AM. 43, 6, 5: with ten others boiled in kurunnu-beer, applied locally, and also used as enema, KAR. 157, 3 (cf. ib. 21, 10 shekels). Strangury, ib. r. 15.

It is used in the following semi-magical ritual as a sialagogue thus:

A man who wishes to prevent the approach of one who is his enemy must chew veratrum (hellebore), šamḥar-ḥar (mustard), and a "nail" of azupiru (saffron) in a lump of salt without a meal on the 18th of Siwan, KAR. 178, 5, 50. Here we have three sialogues, hellebore (which excites salivation, LPG. 191), mustard (P. 1079) and salt. As for the "nail" of saffron which must certainly mean the stigma which provides the saffron (Lōw, A. Pfl. 215, cf. ḍarḥu of the Crocus) "by mastication [of saffron] the mouth and saliva are rendered yellow" (PC. xx, 309). In other words on the 18th of Siwan, when the moon will certainly have just begun to wane, doubtless with a corresponding sympathy in the waning of the affairs of men, certain sialogues are to be chewed resulting in the production of a yellow colour in the saliva. Now, since to spit is the usual expression of enmity in the East, and since yellow is the normal colour representative of jealousy, hostility is to be averted by this spitting of yellow saliva.

Saliva is again produced by šamḥar-ḥar in AM. 31, 4, 17: "If a man's saliva is stopped, he is bewitched." It is also used in a mouth-wash, †, AM. 54, 1, r. 5: 78, 1, 15, and probably 19.

Quantities: 2 shekels šaṃḥar-ḥar (as a gloss to 2 shekels of rūṣe-li), AM. 41, 1, iv, 15. 2 carats, AM. 12, 10, 3.

(b) The Semitic equivalent is used in MT. thus: Eyes, †, šamḥal-pa-nu-um (sic), KUB. iv, 50, 6. Blister, alone, apply locally, AM. 75, 1, 30 (šamḥal-dap-pa-na). In poultice, †, AM. 27, 6, 4 (šamḥal-dap-pa-a-na). Head, with fruit of šar-buš in rose-water bind, CT. xxiii, 31, 67 (šamḥal-dap-pa-nam).

The other uses of šamḥar-ḥar in MT. are:

(2) Water: enema for strangury with 6 others, KAR. 157, r. 5.
(3) šamše-ne(?)(=rū(?)) šaṃḥar-ḥar, with šamḥar-ḥar itself are described as šam ašt, appetizers (Pl. 29, K. 4566, 7 and 12) which, of course, mustard is (see (4) below).
(4) ZID (?): cf. AM. 49, 6, r. 2, where "7 ZID šamḥar-ḥar", glossed šam a-ši-i, is mentioned in a prescription to be bound on the kīšīte,
among a series of drugs each defined carefully by weight, chiefly in carats.

(5) Root: \(\text{sam}_{\text{hal-dap-pa-ni}}\) for teeth unnušate ("made weak") applied locally, \(\text{Pl. 23, K. 259, 13, dup. K.A.R. 203, i, 12.}\) The root of \(\text{sam}_{\text{hal-dap-pa-ni}}\) is one of the drugs used for šá-gić, i.e. \(\text{irru}\) (šá) šalmu "black intestine" (\(\text{Pl. 48, Rm. 328, r. V, 7,}\) and \(\text{tulimu}\), which I take to be cognate with the Syr. \(\text{sammel}, \text{inquinavit}\) (unpub. text, \(\text{D. 384, No. 182}\)). The remaining drugs for this disease are (l.c.) \(\text{sam}_{\text{tar-hu}}\) (= \(\text{sam}_{\text{tar-muš}}\) ?). \(\text{samší-sí}\) (heliotrope) . . . , root of \(\text{sam}\) . . . , manna, tamarisk-gall, \(\text{Ricinus, Solanum}\). Calendula may be used for bilious disorders, manna is at times a purgative, gall is a styptic, castor-oil is an aperient, \(\text{Solanum}\) is of varied use, mustard originally is a digestive. "Black intestine," with the synonym "defecation", suggests melama "black tar-like evacuations . . . due to altered blood", the blood having been partially digested (\(\text{DM. ii, 938}\)). (Obviously the causes of such an affection can hardly be treated in so cavalier a fashion as this brief Assyrian catalogue of drugs would suggest, nor is it possible here to deal with the various causes of the disease.)

We can compare the more modern uses of mustard with those in \(\text{MT}\). The principal use is as a rubefacient, and for the alleviation of neuralgic and other pains; added to baths, as for the feet; as an emetic it is especially valuable, and has been used as a diuretic in dropsy (\(\text{BMP. i, 23}\)). During hysterical fits in adults, and convulsions in children, it is applied ext., and it is also a useful application to remove lice and scurf (\(\text{BM.M. 156}\)). Toothache, faceache, and neuralgic pains in the head and face are frequently relieved by a mustard poultice (\(\text{BMI. 118}\)), and the latter work says that it is used in India for poultices to the feet, for insanity, dropsy, and cholera. These are supported by Diosc. ii, 183 (esp. mustard for \(\text{upūs} \text{πνπα}\) of the eyes) and by Culpeper, 221 (the root for toothache).

Black mustard is a powerful stimulant as a poultice, and the essential oil is occasionally prescribed as a liniment (\(\text{FHP. 64}\)). The seeds of white mustard, when swallowed whole, act as a laxative, and have been used as a remedy for dyspepsia (\(\text{BMP. i, 23}\)).

It will be seen that \(\text{MT}\). follows these uses closely.

One of the most striking pieces of evidence in the identification of \(\text{sam}_{\text{har-har}}\) as "mustard" is that it is one of the four drugs for staining the hands (yellow), in accordance with Eastern custom (cf. Olivier, Travels, i, 123). The other three are \(\text{asa} \text{fatida}\) (\(\text{p. 352}\)), tumeric (\(\text{p. 160}\)), and saffron (\(\text{p. 160}\)) (\(\text{Pl. 48, Rm. 328, vi, 3}\)). This staining of the hands is indicated in our group (\(\text{p. 203, l. 14}\)) "nail(s) of mankind" \(\text{sam}_{\text{puzuru}}\), i.e. for the nails particularly "The soles, and sometimes other parts of the feet as high as the ankles, the palms of the hands, and the nails, are dyed of a yellowish red with the leaves of a plant called henna" (Scripture Manners and Customs (S.P.C.K.), 231).

It is worth while adding the description of the Assyrian mustard poultice here. This would seem to have been made, according to Maqbd v, 4, with \(\text{sam}_{\text{har-har}}\) and sesame (in our Pharmacopia the sesame is replaced by linseed-meal): \(\text{ašapparrakkima sam}_{\text{har-har}} \text{u samasžummi} \) "I will send thee mustard and sesame". Similarly, \(\text{ib. 52, 53}\), our
linimentum sinapis is suggested (made according to P. 1082 with oil of mustard, camphor, castor-oil, and alcohol): anaku anaššakimma raškukru ištu šadi . . . šamMAR-AR ta’-ut máti i “it is I who raise against thee the turpentine of the fir from the mountain . . . mustard, the food (?) of the land”.

šamMAR-AR is used powdered (pašti, AM. 43, 1, ii, 2), and the very word šamMAR-AR suggests its Akkadian meaning tēnu “to grind”. Curiously similar is the Arabic hara = Sinapis harra, Forskål, Flora Aeg.-Arab. 119.

The synonyms for šamMAR-AR, ḫalāuqānu, are:

(1) šamHa-si-su-a-nu, if connected with ḫasasu “to feel”, “perceive”, suggests “that which makes itself perceptible”. Meissner (MAO. xi, 1/2, 1937, 38) would eliminate ḫasīṣānu, replacing it by mesīṣānu from 10860, but the pun in Maqlū, v, 25, is definitely against this: “May her sorcery grind her small (ḫiṣasāsi) like šamMAR-AR-SAR” (ḫasāsu here being referable to a possible cognate of the Arab. “make small”), with which cf. šamTUR-RA, No. (4) below.

(2) šamHa(l)-la-me-su perhaps the same as šamhu-la-me-su, Pl. 32, K. 4180, B, 3 and 10 (forming the end of Col. i of K. 267, Pl. 21, with four or five lines lost between them), and Pl. 43, K. 4419, ii, 11, but hardly the same as the tree ṭaš-KI-IN-DIR (?) = šu-la-me-su, D. 315, 81. It suggests, by its form, the Heb. ḥallámūṭ “purse-lain”, but the meaning “mustard” is not probable in Job, vi, 6.

(3) šamHa-lu-la-ia : for teeth, apply locally, Pl. 23, K. 259, 5, dup. KAR. 203, i, 5. ḥa-lu-la-a (no det.), alone, dry, bray, drink for stone, Lutz, AJSL. 1919, 82, iii, 74 (cf. the use of mustard as a diuretic, p. 205). šamHa(l)laḏa, ḫalluḏa has two other meanings: (1) a demon which lies in wait for wayfarers (Landsberger, Fauna, 135), probably connected with the Syr. ūlaḏa (root ūl), a dweller in caves; and (2) an insect to which the name of “earth-pig” is given, which suggested “Maulwurf­grille” to Landsberger (ib., probably correctly). The two words, however, need not be connected philologically, although VR. 21, 28–29c–d, certainly would suggest that the Assyrians thought that the demon was connected with mustard, this text giving

MAŠKIM-GIG-LŪ-ḤAR-RA-AN
MAŠKIM- GIG- A-RI-A 2 (“rabīṣu- demon + semen”)

| ḫal-la-a-a-a |
| šaman , | ( = ḫallula) ("oil of mustard") |

(4) šamTUR-RA “the small” would almost suggest Matt. xiii, 31.

(5) šamUttimu (?) (partimu (?)). tuntimu (?) (difficult).

(6) šamRU-UŠ-RU-UŠ must be the šamru-us-ru-su of p. 203, l. 50, equivalent to “drug of marking (?)”. It may be connected with the “(rušu), pl. rušān, Spitze (? Fingernägel supre) ” of BAG. 251, which would then again suggest its use for staining the finger-nails. [šamR]u-us­-ru-uš-su is to be drunk in kurumnu-beer and used as an ointment for a bruise alone, Pl. 23, K. 2923, 13. The equivalence with šamšīt-[GĀN] (chamomile) “in common speech” is interesting.

(6) šamKI-IZ-BAT, difficult.

1 Meier, te-ne sā, Stolz (?).
2 Deimel appears to have omitted this a (D. 295d, 8).
THE "HOT" PLANTS

(7) $\text{sanapu} \text{ sa-na-pu} = \text{sama-a-ar tu-kul};$ the word \text{sanapu} (so Stücken, Astralmythen, i, 5) is very near in sound to \text{sinap}, \text{sinii}. Benfey (quoted by Hehn, Kulturpf., 207) conjectures that the word \text{sinap} was originally Sanskrit, but was altered by the Persians and Greeks. The cognate Arab. \text{sif} "a pod" or "husk" would seem to be the explanation here; the genus \text{sinapis} is known by its siliquose fruit (PC. xxii, 35), which shows how alert the Assyrians were to notice salient points in these plants: "In preparing the flour of mustard in this country, the black husk of the seed is separated by delicate sifting" (ib. 36), which perhaps indicates the $\text{sanapu} \text{ sa-na-pu} \text{ sheen of husk}". $\text{sanapu} \text{ tu-kul},$ perhaps as "dwelling for seed" represents the pod, \text{sanapu}. Theophrastus mentions a form \text{vay}, and Dioscor. \text{vay} or \text{siyni}.

(8) \text{Sappandu}, cited by Holma (KL. B. 79) (= $\text{riq-\text{E}}$\text{-HA-RA}, from Meissner, MVAG. 1913, 3, 18, 44) as perhaps cognate to the Pers.-Arab. \text{sipandu}, \text{sanap}. But the det. $\text{riq}$ makes this very improbable.

To conclude this group, it may be mentioned that the old translation for $\text{hadappa\text{nu, pododaphn}},$ is unsound: all parts of the plant \text{Nerium odorum} (hardly different from \text{N. Oleander}, especially the root) are recognized by the natives of India as poisonous (CPI. 139).

Curiously enough, the Assyrian words for "mustard" show little affinity with those of the other Semitic languages. It is possible, if we allow a juggling with letters, to see in \text{hadappa\text{nu}} an equivalent for the Arab. \text{bardal} (a Syr. form \text{hard\text{i}\text{u}n\text{a}} exists), that is, on the grounds that (a), i and r not only interchange, but may also change places in a word: and (b), r in Assyrian once takes the place of b before d (in \text{ardu} "slave", the Heb. \text{ebbedh}). Hence \text{khardal} might be for \text{babdal}, and so \text{babdal-anu}, but it seems a hazardous series of changes. Indeed, FJ. i, 517, suggests that the Arabic may be a loanword (comparing Lagarde, Sém. i, 64). At the same time there is the form $\text{h\text{n}d\text{r}}$ in the Ras Shamra texts, for which both \text{bardal} "mustard" and even \text{hansal} "colocynth" have been suggested (Virolleaud, Gloc, i, 1938, 24).

Ainsworth (A., 36) mentions \text{Sinapis orientalis} in Mesopotamia; six species of mustard occur in Syria-Palestine (FP. i, 123).

B. $\text{i\text{S}am-$\text{dingir-barbar}$, $\text{Samas, Anacyclus Pyrethrum}$ D.C., Pellitory.

This plant, as yet, has not been found in the syllabaries. It is written $\text{i\text{S}am-$\text{ma\text{s}}$, which may be a mistake for $\text{i\text{S}am-$\text{ma\text{s}}$ (Gwynn, PSBA. 1914, 243, 32). As "Flower of the Sun" it would be suggestive of our sunflower (cf. the representations of the disks of the Sun-god and of the Venus-star, i.e. $\text{i\text{S}am-$\text{dil-bat}$, mesembryanthemum (?)}, p. 46, on the royal necklets. I might add that $\text{Sam\text{s}}$ was the name given me in Arabic at Basrah for the Sunflower (Helianthus).

It occurs thus in MT.: (1) Simply: ext.: Swelling, †, poultice, AM. 15, 3, 13 + 73, 1, 3 (JRAS. 1937, 283 ff.): ib. 15, 3, 17 + 73, 1, 7 (JRAS., ib.): ib. 73, 1, 24 (dup. KAR. 192, 19). Scorpion-sting, mix † in cedar-oil, anoint in oil, AM. 91, 1, r. 9. Probably to be restored in the recipe for snake-bite, alone, Pl. 23, K. 9283, 6. An interesting text prescribes it semi-magically for feet (AM. 74, 1, ii, 25: JRAS. 1937, 419): "If a man's feet are full of sickness, their sickness having a recurrent period; the day when they
are full of sickness *Anacyclus Pyrethrum*, of which the "eyes" (flowers) are turned to the west, thou shalt root up in the sun, saying thus: "O Shamash, the plant is thy plant (1) ... This plant below (?) thou shalt tie; thus shalt thou say 'Free, O Shamash, loose, O Shamash?' Seven times [thou shalt say it]: then thou shalt take dust of the City-gate, go to the river, go down into the river, and set his face downstream (?): thou shalt tie his feet downstream (?): thus shalt thou say: 'Thou hast bound, do thou loose, O Shamash!' Seven times shalt thou say (it) ... , his face upstream (?) thou shalt set, the dust aforementioned on his feet upstream(wards) (?) he shall rub, thus shalt thou say: 'Thou hast bound, do thou loose, O Shamash!' Seven times shalt thou say (it), and he shall recover."

In this text the use of "eyes" is paralleled by our "daisy" ("day's eye"), and "ox-eye" (the Syr. *én ṭbrā, Chrysanthemum coronarium*), and the *Solis oculus* of the *Parthenium* (Diosc. iii, 145). The mixture of the drug with "dust of the City-gate" seems to suggest that the latter, connected as it is with traffic and road-movement, is intended by its sympathetic magic to restore the power of motion to the affected legs, especially in similar relation to the running river. Whether the "Sun-plant" here is to be rubbed on as a rubefacient (which is possible), or whether it is merely an emblem of the warm sun, can hardly be decided.

5 shekels of *šam- Dingir-babbar* with 24 others amounting in all to 250 shekels of drugs (more than 4 lb.) without allowing for the "rose-water" and "strong vinegar" in which they are to be dissolved, is to be administered as an enema in honey and pure oil (*šamna ḫalṣa*), KAR. 157, 28.

(2) *fa* (tops): as *poulrice, ṭ*, when leg-muscles are strained and walking is impossible, *AM*. 68, 1, r. 13.

(3) *Root (šam-šur-šī šam- Dingir-babbar)*: applied alone in toothache: Pl. 23, K. 259, 6, dup. KAR. 203, i, 6.

Note the comparison in *BRP*. iv, 37, 7 (JRAS. 1924, 453) "šam ḫmr-aṣra kima šaru ru ʾīṣ ar šanīš šam-ḫmr-aṣra kima šam ʾšamaṣ zir-ṣu kima šiqūṣti, i.e. the ḫmr-aṣra-p’ant (Corn marigold, or similar) like the ‘brilliance of Ishtar, otherwise like the šam ʾšamaṣ, its seed like šiqūṣti’, which is another indication of the daisy-like appearance of the šam ʾšamaṣ.

We have thus a daisy-like flower, named "Sun-plant", and compared by the Assyrians to the Corn-marigold, with a hot, pungent root used for toothache, and used (in general) ext. only for swellings, and small enough to grow on houses and walls (Gwynn, l.c.). The obvious equivalence (*AH*. 71) would be that species of the *Compositae*, the *Anacyclus Pyrethrum* DC. which is called "Spanish Chamomile", with its root universally used as a remedy for toothache, and the tincture occasionally as rubefacient and stimulant (*FH*., 2nd ed., 342 and 384: *WPI*. 125: *BMM*. 355). It is found in Arabia, N. Africa, and Spain (*MPB*. ii, 1140: *FP*. ii, 57, gives *Anac. radiatus* Loisel., and *Anac. nigellifolius* Boiss.).

Particularly noticeable is the mention of the growth of the Assyrian plant on the wall, but whether we are to see here a similar confusion to that in English with the "Pellitory of the Wall" is, of course, doubtful; this latter plant is derived from *Parietaria* and not *Pyrethrum*. 
THE "HOT" PLANTS

9am)GI-ZU-LUM-MA, quršibti eqli, Urtica dioica L., nettle.

Pl. 24, 24, K. 4412, iii-iv, 15-23: Pl. 38, K. 5424, B, iii, 1-5 (Pl. 37, K. 4417, 12-20, reversing the order of the two groups):

<table>
<thead>
<tr>
<th>15. 9amGI-ZU-LUM-MA</th>
<th>9ame-pi-ta-a-tu</th>
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</thead>
<tbody>
<tr>
<td>9amLAM — MA</td>
<td>9ame-pi-ta-a-tu</td>
</tr>
<tr>
<td>9amKIN — DU13</td>
<td>9ame-pi-ta-a-tu</td>
</tr>
<tr>
<td>9aml — li — ku-nu</td>
<td>sam, ina Šu-ba-r[i]</td>
</tr>
<tr>
<td>9amqi — li-tú</td>
<td>sam, ina Šu-ba-r[i]</td>
</tr>
<tr>
<td>9amqul — li-tú</td>
<td>sam, ina Šu-ba-r[i]</td>
</tr>
</tbody>
</table>

GI — ZU — LUM — MA
zir GI-ZU-LUM-MA
GI — ZU — LUM — MA

Sp. iii, 6 (Pinches, PSBA. 1894, 309, 4) gives:

VAT. 9000:

| (a) 9amGI-ZU-LUM-MA | 9amqanēši ha-a-su-ti 3 |
| (b) 9aml            | 9ambi — zu           |
| (c) 9amLAM- ME ŠE   | 9am                      |
| (d) 9amKIN — DU13   | 9am                      |
| (e) 9amta — li-tú   | 9am                      |
| (f) 9amzir- GI-ZU-LUM-MA 5 | 9am                      |

Meissner, MVAG. 1913, 2, 26, 27 ff.

9amGI-ZU-LUM-MA = ...., 9ilamu: 9iDU-ZU-LUM-MA = businnu

It is noticeable that this plant is included in two distinct registers, and it may well be, that while one contains the legitimate plant 9amquršibti eqli, the other gives merely a quid pro quo translation 9amepidatu, qanē hāsuti or hāsūsuṭe). 9amGI-ZU-LUM-MA means literally "cane of the date palm", and consequently Sayce may have been right in his rendering of epidatu as "date stalk" (ZK. ii, 209). The translation qanēši hāsuti is perhaps cognate to the Syr. hās "pressed", or hāša "hard" (or perhaps connected with hāwāśa "mat") or with the Ethp'al of the above root, vincitus, i.e. the reed-bundles used in building a hut, bound like the fasces of the lictors (or perhaps, from the variant hāsusute, simply "split").

But the three synonyms from Šubari show that the plant proper was common in the north, and therefore can have nothing to do with the date-palm, which does not grow satisfactorily above Tuz Khurmati.

1 K. 4417, ii.
2 The qur-šib-ta is spaced out, and leaves little room for anything else, except perhaps ...
3 Cf. V.M. (K. tablet unpublished: Mat. 88, 1, 11) [(ši)] 9amGI-ZU-LUM-MA | ina qanēši ha-su-su-te.
4 Erasure of li.
5 Cf. V.M. (Mat. 88, 2, 21) 9BAD (= zir) GI-ZU- {LUM}-MA | ina qur-šib-ta eqli.
We must regard the other value (samqurṣibti eqli) as representing a true plant, and probably Zimmern was right in AF. 58 in comparing it with the Syr. qarṣebhīdā “nettle”. This is borne out by the synonym samxrn-Du 13, KIN being the Assyrian zaqtī “sting”, “point”, the plant thus being “plant of the small sting(s)”. Indeed, the word GI-ZU-LUM-MA suggests a resemblance to the date-palm which perhaps we may see in the peculiar way in which the nettle-seeds hang, not unlike the bunches of dates. (sam)GI-ZU-LUM-MA occurs thus in MT.:


4. PA (tops): Ext.: Eyes, † (?), AM. 13, 1, 4. Swelling, alone, cut and heap up on the place, AM. 74, 1, 17: with PA of urzinnu, ditto, ib. 18: †, bind on, KAR. 192, 48 (cf. 2).

Uncertain form of the plant: Eyes, alone (?), bray in honey, apply, AM. 16, 1, 20 (parallel to a similar trouble, šēram alīkām “increasing flesh” where abas-MUR (arsenic) in ghee, l. 21, and cantharides, l. 23, are used. Pelvis (“middle”) and loins, †, uncertain use, AM. 45, 6, 11.

Except for the use for eyes (which appears to be in such cases as call for the burning effect of cantharides or the use of arsenic), the parallels in later medicine are complete. Diosc. (iv, 92) prescribes the nettle for gangrene, and menses, and the seed as aphrodisiac and for lung inflammations. Pliny (NH. xxi, 15) says that the nettle cures procidence of the anus in infants: with salt it is used on sprains and tumours: with honey the seed clears the chest by expectoration, and is used with old oil for diseases of the joints and gout. The root pounded in vinegar is used for the same. In SM. the nettle is drunk, † (ii, 421), or applied, † (670), for a cough; the seed is drunk for pains in the throat, † (204), liver, † (342, 400), stomach (410), and used as a plaster (441). FHS. 351 prescribes it for itch, esp. of the anus. It is used against menorrhagia (apparently ext.), LPG. 335, and Gerarde (571) says that it provokes urine, stirs lust, and is used for stone, humours in the chest, rose-blooding, and difficult breath, and against serpents and scorpions. According to the New Cycl. of Botany (pub. Clark, ii, 491) nettles restore excitement in paralytic limbs, the root operates by urine and is used for jaundice.

C. 1. sam-si-sá, sam-GAR-GÁN-GÁN, šurūnā, prob. Erucu sativa L., rocket, or sim.
2. \(\text{garm-gán-gán-(šar)}\), gingiru, egimqiru, \(Eruca\ \text{sativa L.}\), rocket.

3. \(\text{šamša-gi, pušlu, Raphanus \text{sativus L.}}\), radish.

(A) \(\text{Pl. 38, K. 5424, }\text{B, i–ii, 4–13}:

<table>
<thead>
<tr>
<th>(\text{šamši} )</th>
<th>(\text{šamšir} )</th>
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<tbody>
<tr>
<td>(\text{šamša-gi, pušlu, Raphanus \text{sativus L.}}), radish.</td>
<td>(\text{šamšir-šu-nu-u} )</td>
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(B) \(\text{VAT. 9000}:

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<thead>
<tr>
<th>(\text{šamši} )</th>
<th>(\text{šamšir} )</th>
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<tbody>
<tr>
<td>(\text{šamši} )-SÁ</td>
<td>(\text{šamšir} )-SÁ</td>
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<tr>
<td>(\text{šamši} )-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN</td>
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<tr>
<td>(\text{šamši} )-GÁN-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN-GÁN</td>
</tr>
<tr>
<td>(\text{šamši} )-GÁN-GÁN-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN-GÁN-GÁN</td>
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(C) \(\text{108860, CT. xxxvii, }\text{i, 31–35}:

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<thead>
<tr>
<th>(\text{šamši} )</th>
<th>(\text{šamšir} )</th>
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<tbody>
<tr>
<td>(\text{šamši} )-SÁ</td>
<td>(\text{šamšir} )-SÁ</td>
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<tr>
<td>(\text{šamši} )-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN</td>
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<tr>
<td>(\text{šamši} )-GÁN-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN-GÁN</td>
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<tr>
<td>(\text{šamši} )-GÁN-GÁN-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN-GÁN-GÁN</td>
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(D) \(\text{Pl. 41, K. 8791, }\text{iii–iv, 12}:

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<thead>
<tr>
<th>(\text{šamši} )</th>
<th>(\text{šamšir} )</th>
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<tr>
<td>(\text{šamši} )-GÁN-GÁN-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN-GÁN-GÁN</td>
</tr>
<tr>
<td>(\text{šamši} )-GÁN-GÁN-GÁN-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN-GÁN-GÁN-GÁN</td>
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<tr>
<td>(\text{šamši} )-GÁN-GÁN-GÁN-GÁN-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN-GÁN-GÁN-GÁN-GÁN</td>
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(E) \(\text{Mat. 88, }\text{4, 16–18}:

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<tr>
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<tbody>
<tr>
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<td>(\text{šamšir} )-GÁN-GÁN-GÁN-GÁN-GÁN-GÁN</td>
</tr>
<tr>
<td>(\text{šamši} )-GÁN-GÁN-GÁN-GÁN-GÁN-GÁN-GÁN</td>
<td>(\text{šamšir} )-GÁN-GÁN-GÁN-GÁN-GÁN-GÁN-GÁN</td>
</tr>
</tbody>
</table>

1 Glossed possibly \(\text{na(?)-ra(?)}.\)
These occur thus in *MT.*:

(a) **sam-SI-SÁ**:


*Int.:* apparently strangury, †, probably drink, *AM.* 60, 1, 8.

*Fumigates:* "Poison," †, *AM.* 91, 1, 10.

(b) **sam-GAR-GÁN-GÁN**:


*Int.:* Aphrodisiac apparently, "heliotrope, lupins, cynoglosson, *sam-GAR-GÁN-GÁN, sam-ar-daššum, *sam-kapullu, "gold fly" (cantharides), these seven drugs thou shalt pound, sift; thou shalt set before Ishtar a censer of pine(-incense), make a libation of beer, recite the incantation thereon seven times, give him (the drugs) to drink in wine; he shall drink (it) for three days, and recover on the fourth," *AM.* 88, 3, 5.

(c) (1) **sam-GI-ir-ri-ru-u:** Anus-trouble, alone, with fat, *KAR.* 203, iv, 6: apply to anus in kidney suet, *ib.* 14: apply to anus, *iv.* 15.

(2) **sam-Gim-qi-ra:** simply, eyes, †, bind on, *AM.* 12, 6, 5. Note the form **sam-qi-en-gir** . . . occurring in a syllabary along with **sam-gi-ru-[u]** and *sam-gir-gi-[ru-u]*, *Pl.* 35, *K.* 4180, *A.* 33, 35, 47. All would appear from the various syllabaries to be the same word. *E-gi-en-gi-ri ŠAR* occurs *MB.* 34 along with *ašmidu ŠAR, saffron and coriander. Holma’s comparison (Kl. B., 67) with the Syr. *gargirā, Arab. jirjir, *Eruca, rocket, is correct. Note that Pliny says that it is thought that the rocket (*Brassica eruca* L., so Bostock) lightly bruised and employed as a fomentation for eyes will restore the sight to its original goodness (NH. xx, 49) and (ib. xix, 44) that it is an aphrodisiac. Preuss (Bibl.-Talm. Med. 320) says that *Eruca* was one of the drugs used for eyes. Gerarde (Herball, 193) says that the rocket stirs lust and urine, and provokes a good digestion; *GM.* 27, that it is diuretic.

(3) **sam-Puglu,** which on account of its hot taste is associated here with the Rocket, will be the Aram. *pughlu,* Arab. *fijl,* radish (Del., Proleg. 84, n. 2). It occurs as *pug-ug-lu ŠAR* in *MB.* 42 along with *silqa ŠAR* and *lapti ŠAR* (see p. 51).

*Cf. CT.* xi, 48, ix-xii, 30, 31:

| an-Za-lu-ub | gi-šá-đi | gi-šá-a-gi-gu-u | ḥa-an-du-
| pug-ug-lu | gi-šá-đi | gi | pu-ug-[lu]

but it is not clear how *gi-šá-đi,* *puglu,* differs from ***sam-šá-đi,* *puglu.* *gi-šá-đi* apparently occurs, *AM.* 1, 3, 10, to be reduced alone, brayed and anointed in oil and beer for some head-trouble.

*Note.—Post, FP.* 1, 321, says that *Brassica Napus* L., rape, is "rarely cultivated" in Syria-Palestine.

1 Notice that ***sam-SI-SÁ** is prescribed only as seed, and the other forms as the simple plant.
NARCOTICS
WITHANIA SOMNIFERA, MANDRAKE, HEMP (CANNABIS), POPPY, HENBANE

A. 1. šamHar-hum-ba-šir, Withania somnifera (L.), Dhu. (in D.C.), Henbane.
2. šamTy[m]bu[i]ti eqli, synonym of the above.

(A) Pl. 18, K. 4354, xiv–xiii, 11–14:

(B) BM. 108860, CT. xxxvii, 29, ii, 5–11:

(C) VAT. 9000:

In identifying this plant we may first consider the stone of the same name, ābanHar-hum-ba-šir. (= bahrē, DACG. 172), which represents, I believe, the spherical red coral. The evidence for “coral” is (a) that in the Assyrian Glass Receipts this mineral [bahrē] is the name given to a composition of glass in which an infinitesimal quantity of gold is used. This suggests the Purple of Cassius, which would give a result such as in later times would be called ruby: (b) bahrē suggests the Arabic balirī “of the sea”, which adds its weight to the identification with (red) coral (the white is, I believe, ābanba!ryc, DACG. 165). Finally (c) to ābanbahrē is given the equivalence also of muzaltu, which suggests the Syr. mazaltahā, sphæra (i.e. the shape of the coral beads, cf. Pliny, NH. xxxii, 11).

From this it appears that the plant šamHar-hum-ba-šir should have some similarity to spherical red coral, and the comparison of the red berries of the Withania somnifera L. with this is obvious; indeed, so like red coral are they that the modern Arabic name for the plant is marjan “coral” (P.J.2 iii, 358).
It occurs thus in M.T.:

**Simply:** Ext.: Toothache, alone (below). Scorpion-sting, †, mix in cedar-oil and anoint in oil, AM. 91, 1, r. 5 (dup. 92, 4, 10 ?). Hand of Ghost, †, AM. 70, 2, 15 (dup. KAR. 182, r. 28, JRAS. 1929, 812). Swelling, †, bind on (ḫar-ba-šir). Head, †, bind on, KAR. 202, ii, 47.

**Int.:** Stomach-trouble, drink alone in beer, AM. 48, 1, 9 + 78, 3, 6 (RA. 1929, 79, like Ammi alone, and poppy alone, ib.). Strangury, †, drink, AM. 31, 1, 7 (+ 59, 1, Bab. 1934, 122). One of thirty-seven drugs to drink for urinary trouble, KAR. 193, 7. From p. 215 it is also a drug for missir ḫubb (stomachic trouble) and ṭapadi.

The *Withania somnifera* (given the name also, besides “coral”, of sakrān, the usual Arabic for an intoxicant, and samā al-fār), grows at Jaffa, Antioch, Jordan (F.I. 3 iii, 358): “very common along the shores of the Mediterranean, where it has always been reputed to be hypnotic” (IMP. ii, 904). As a drug it is used in powder, decoction, confection, and paste (BMM. 449), the root being “regarded as tonic, alterative, and aphrodisiac, and is used in consumption, emaciation of children, debility from old age, rheumatism, etc. (Dutt). It has also narcotic and diuretic properties.... The ground root and bruised leaves are employed as a local application to carbuncles, ulcers, and painful swellings (Pharm. Ind.).... The fruit is diuretic.... (IMP. 16). When I was in Mosul in 1904 a friend of mine, Père Makdo, obtained some of the berries of this plant for me from the Kurdish Hills (it was kindly identified for me by Mr. W. Botting Hemsley, F.R.S., of the Royal Gardens at Kew), and I was told that the name was ambubi, and that it was used to fumigate an aching tooth (PSBA. 1906, 78).

The synonym šamtimbutti eqli “ring of the field” is the same name as that of a small animal (Fauna, 43)

\[ šamtim-bu-u[l] eqli = šam-a-[a]-bu-nu šamgal, ?-pu-nu \]

Cf. also Mat. 88, iv, 54. The group follows “gold fly” (prob. cantharides) and precedes šammuni eqli.

Now “ring of the field” applied to some small animal of the lower orders would suggest perhaps woodlouse (Oniscus) which rolls itself in a ball. Qal(?)-pu-nu, however (a similar animal, an equivalent) in spite of the Greek σκολόπενδρα looks not unlike the Syr. qlpndr, millepes, but this is uncertain. But be it woodlouse or centipede, the picture of the henbane-seeds neatly curled up not unlike a woodlouse, suggests that we have something of the kind in the animal timbutti eqli, and add something more to our identification with henbane. There is also a šamtimbutti eqli arqa “yellow tiba of the field”, which may be the *Hyoscyamus pallidus* Kitaib, or *H. pusillus* L. (called in Arabic ṣufairā (FP. 3 ii, 263). šamTimbutti eqli occurs thus in M.T.: for an-ta-šub-ba (when the patient “chokes and spits”) bind on šamtimbut eqli, †, KAR. 186, r. 43. Stomach, šamTimbutti eqli, †, AM. 64, 2, 8. Anus-trouble, dry and bray šamni-bu-ti eqli and apply alone in fat, KAR. 203, r. vi-iv, 11, dup. Pl. 30, S. 698, 17. (It should be noted that the woodlouse or milleped is used in medicine in NH., s.v., Index, and the milleped for asthma in SM. ii, 217. Onisci were found beneath stones in March near Mosul, Ainsworth, T. ii, 131.
B. (\textsuperscript{t}NAM-TAR (\textsuperscript{t}GIR\textsubscript{12}), pil(l)\textsuperscript{-}l\textsuperscript{u}, Mandragora officinalis D., mandrake.

\textsuperscript{t}NAM-TAR, \textsuperscript{t}NAM-TAR-RA, \textsuperscript{t}NAM-ER-Za, \textsuperscript{t}pil-lum = pi-lu-\textsuperscript{u} (Meissner, \textit{MVAG.} 1913, 2, 27, v, 74-7): K. 14030, Pl. 35 gives:

| \textsuperscript{t}NAM[TAR| \textsuperscript{sam}pil-lu-\textsuperscript{u} | \textsuperscript{sam}pil-lu-\textsuperscript{u} |
| \hline
| \hline
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I am inclined to doubt if the \textit{pi-lu-\textsuperscript{u} (pil-lum)} of Meissner, \textit{MVAG.} 1913, 2, 14, i, 16, and \textit{Mut.} 1, i, 13 (= \textsuperscript{t}GESTIN-RA, perhaps aubergine) has any reference to the same plant as the \textit{pil-lu-\textsuperscript{u}} here given, although philologically the words may be the same.

In \textit{AH.} 187 ff., I took the \textsuperscript{t}NAM-\textsuperscript{TAR (\textsuperscript{t}GIR\textsubscript{12}) to be the mandrake, but Langdon, \textit{JRAS.} 1925, 552, doubted it, and I continued the discussion in \textit{JRAS.} 1926, 100. I append my reasons for still maintaining this identification:

1. \textsuperscript{t}NAM-TAR (\textsuperscript{t}GIR\textsubscript{12}) represents the "male Plague-god plant", with a very obvious phonetic similarity to the Greek \textit{μανδραγόρας} doubtless by a "merchants' garbling". M. Thureau-Dangin kindly pointed out to me, after I had compared \textsuperscript{t}NAM-TAR with \textit{μανδραγόρας}, that the word for "male" could be read \textit{IRA} which added to the value of the identification. Professor Langdon (l.c.) improved on this with the value \textsuperscript{t}GIR\textsubscript{12}, from the equivalence

\textsuperscript{t}NAM-TAR (\textit{IRA}, i.e. \textsuperscript{t}GIR\textsubscript{12})-RA = \textsuperscript{t}LUGAL-GIR-RA,

although at the same time he raised objections to the identification with mandrake. But these objections, I confess, do not seem to be serious, and not less so since he suggested that \textit{malakal} (as a possible "mandrake") offered less difficulty philologically for the comparison, and tried to make \textsuperscript{t}NAM-TAR the laurel and laurel-berry.

Continuing, therefore, from the standpoint that we have the origin of \textit{μανδραγόρας} in our \textsuperscript{t}NAM-TAR (\textsuperscript{t}GIR\textsubscript{12}), we can add to its association with the Plague-god the Arab names "Devil's Testicles" (p. 218), and \textit{tuffah al-jinn} "Apple of the Jinn", as parallels (\textit{FP.} ii, 26 : \textit{FJ.} iii, 367).

2. \textit{Pil(l)\textsuperscript{-}l\textsuperscript{u}}, as equivalent, is philologically near to the Arabic \textit{bussah} "mandrake", in spite of Langdon's remark "metathesis of a doubled letter would be impossible, and the addition of \textit{h} is also impossible unless a common root \textit{palasu} \textit{lupahsu} be assumed ". I confess I cannot see that any "addition of \textit{h}" is in question: \textit{h} is one of the well-known regular equivalents for an Assyrian simple breathing merging in the vowel-sound; and I should be sorry to say that anything was impossible in Assyrian philology, particularly here, since we have the outstanding and obvious parallel \textit{nurmu} "pomegranate", Heb. \textit{rimmon}, Arab. \textit{rummānāh}, (and even \textit{musukunu} = \textit{ovkāmūros} "mulberry").

Moreover, Professor Langdon's own suggestion (l.c., p. 553) that

\textsuperscript{1} Are we to see an additional metathesis in the \textit{Syr. phblātā} "testicles" ?
the identification rests upon the further identification of šampilû with pilû 'egg' and the resemblance of luffîth to the egg-plant " fits the mandrake admirably. Gérard (280), following Diosc., says that there is a male and female mandrake: the Syriac (S.M. ii, 708) mentions its two little balls " like the testicles of a man", and the Arab. name is "Devil's testicles ", which coincides well with the Assyrian "małe nam-tar-plant" (FP. ii, 261). The Semitic word for "egg" is, of course, applied to "testicle". It may also be noted that in AM. 47, 1, 2, the ūr of this drug is prescribed, less probably perhaps with its meaning "root" than the value šînu, with sex-significance. Br. 4831 gives the value ... ūr = du-ū-tum (Mr. Gadd suggests to me, from an examination of the tablet, that šēru "flesh" should be supplied in the blank), dûtu having a male-sex meaning, e.g. iv R. 57, a, 8-9 (MA. 270 : HWB. 214), ša əšlî damqi dussu (= dût-su) īkîn, ša ardati damiqi insibîa ībal " of the handsome man she snatches his dûtu, of the fair maid she takes away her īn̂bu). I owe to Mr. Gadd a reference to the following :

\[ TI = dûtum \]
\[ BAR = baštum \]
\[ SAG = mutlatum \]

(De Genouillac, RA. 1913, 78). Baštum is surely balṭum, Heb. bōšēth "shame" (genitals), and since TI also = "life" we may see in dûtu the parallel idea "testicle" (to be compared to the Heb. (dual) dûdhā'im ("two testicles"?), mandrake).

In VM. we get

(a) ... nom-tar | ina mal- āš -ba-bu  
(K. 8764 : Mat. 88, i,77)

(b) šam ŏśnom-tar | ina mi pop-ḥal-la-tum imeri  
šam ŏśnom-tar | ina Șu-pur kalbi șalmi  


Note that in the line following šamhašû is given exactly the same sequence, so that we cannot see a reference to the traditional extraction of the mandrake by a dog in the phrase "by the claw of a black dog".

"nom-tar (ŏṙnom-tar) occurs thus in MT. :  
(1) Simply : Ext. : Toothache, alone, apply, Pl. 23, K. 259, 1, dup. KAR. 205, i–ii, i.  
Int. : Urinary trouble, alone, drink, Lutz, AJSL. 1919, 80, 1, 2.  
(2) Root (Rasā): Toothache, alone, apply, Pl. 23, K. 259, 2 (cf. AM. 30, 3, 10, šu-ru-uš ŏśnom-tar (ŏśnom-tar) : apply the white of the inside of a muş-diş-gurin-na (caterpillar or maggot, AJSL. 1937, 34),  Ŧ (?) : on wool, and then root of ŏśnom-tar (ŏśnom-tar), Ŧ, on the tooth . . . , AM. 28, 1, 3. Feet "full of sicknesses", dry the root alone, crush, sift, bind in neat's foot oil, AM. 74, 1, ii, 24 : probably to assuage pain in hands and feet, Ŧ, rub, AM. 98, 3, 2. Temples, Ŧ, bind, AM. 103, 1, 15.  
Difficult childbirth, "root of nom-tar (ŏśnom-tar) of the north", bray, mix

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1 According to Sprengel (Diosc. ii, 604) the "male" is M. vernalis Bertholon, and the "female" M. autumnalis.

2 Expanded in Kū. iii, iii, 9, to "which does not bear fruit".
in oil, seven times anna mukkalpitu rub her navel (pa-pan libbi), she will bring forth", *AM.* 67, i, iv, 12, dup. *Kar.* 196, iv, 19. *Stomach,* †, drink in beer, Kū. i, i, 1 (*iNam-tar*). *Anus-trouble* (probably haemorrhoids which have to be burnt), bray and mix catarrhides with the root of *iNam-tar-gir₁₂* (as analgesic) *tukappat*, apply to anus, *AM.* 57, 5, 14: *anus-trouble*, mix with root of *glīt-llum-ma*, and perhaps, with fat, make a suppository, *AM.* 58, 1, 9. *iamkas₅ iNam-tar-gir₁₂* "a drug for sick anus", mix with fat, insert in anus, *Kar.* 203, vii, 5, dup. Pl. 30, S. 608, probably.

**Suppository, for anus-trouble (?), †, Kar. 201, 40:** †, root of *iNam-tar-gir₁₂*, ib. 43. **Suppository, †, Kar. 201, 48.** Hand of Ghost, prob. †, prob. ext., *AM.* 4, 6, 11 (*iNam-tar-ri-gir₁₂*) (dup. or nearly so, *Kar.* 182, v, 29ff., *AM.* 70, 2, 11, and cf. *AM.* 96, 4, 1 ff.).

**Fumigate:** "Poison" of flesh, †, *AM.* 91, 1, 11.


(3) *ZID* (powder): *iNam-tar-gir₁₂*, for strangury with *Zid* of *iNam-ri-rim*, drink in beer, *AM.* 59, 1, 30.

(4) *PA* (tops): application to eyes, †, *AM.* 16, 3, 5. *PA iNam-tar, AM.* 31, 7, ii, 12.

(5) *Seed:* For *kurara* (itch or similar) in head, †, prob. ext., *AM.* 5, 5, 13 (zīr *iNam-tar*).

(6) *BI + IS* (re-exd., sic) of *iNam-tar-gir₁₂* "while [it is] green" (see JRAS. 1937, 275), for feet full of fissures, *AM.* 69, 5, 2.

(7) *UR:* "When a man lies down, and his sleep comes gently upon him, and it is heavy," 2 OUR ..., for his recovery *UR iNam-tar-gir₁₂* (and) *iNam-qurban ezi* (chamomile) thou shalt bray, mix in fat, make a suppository ..." (*AM.* 47, 1, 1) (UR may be the "testicles"; p. 218). (Note also the mutilated text *iNam-tar ina eli qišinmori dul-du* ... "Namtar-plant, which springs up against a palm-tree", at all events indicative that the *iNam-tar* grew in S. Babylonia (*Kar.* 180, ii, 7.)

The use in *MT.* is supported by other pharmacopoeias. Pliny (*NH.* xxv, 94) gives the mandrake as narcotic, and for eyes: "the name given to the white plant (variety) by some persons is arsen (male)." Theophrastus (*EP.* ix, ix) says that the leaf is useful for wounds with meal, the root for erysipelas, gout, and sleeplessness. *EB.* xith ed., xvii, 566, says that the drug is purgative, emetic, and narcotic. *M. officinarum* L. is common in Syria and Palestine (*FP.* ii, 262). George Smith evidently speaks of the mandrake at Urfa (Ass. Disc. 161).

For *iNam-ri*, cf. Kū. ii, i, 49. "Root of *iNam-ri-nita*," †, as suppository to anus *Kar.* 201, 43.

1 I-ka-la-us.
C. ʾṣamA-ZAL-LA, azällû, Cannabis (especially Indica Lam.), hemp.

The meaning of this plant is, I think, certain. ṢamAzällû will be cognate with the Syr. *ʿazal* "to spin". This meaning reappears also in ṣamgururu, which we may also see in the group given in Strassm., Alph. Verzeichn. 1747. ʿiš-MA-GUR-GUR = šu-rum (i.e. gurgurrum). The root garáru means "to roll, twist round" in one of its values, as is shown by magarru "wheel", and also in the following use of the root in a prescription for difficult childbirth: ʾḥattī ʾMA-NU 2 ša qat rīʾ-i šiptu ša tamannu(nu)-ma ultu rīš libbi-sā ana šap-la-an libbi-sā tāg-gar-raʾār "a staff of laurel from the hand of a shepherd; the incantation 7 times thou shalt recite, and roll (it) from the top of her stomach to the lower part of her stomach" (KAR. 196, r. iv, 8).

A form of this word, garara ša mēšt "eddies of water" occurs (= ḫal, CT. xli, 45, No. 76487, 9).

Perhaps I may add here iḫtenurrū "is twisted" of the mouth (?), AM. 85, 1, vi, 9, and "in the boiled water of Vitex thou shalt roll (tugarrar) the bandage (laši) of his head". CT. xxiii, 26, 8, dup. TCPP. 398, 14. The Persian word gurgarinj (hemp) would appear to be our word gurgurrū with the ordinary Persian termination -ṇj, which existed in late Assyrian times as -aŋnu (p. 108).

With ʿzal "to spin", and gurgurrū probably "cable" we can consider the equivalent, ṣamšāni nissati "drug for grief, 3 depression of spirits" (augmented from BRP. iv, 37, 19, JRAS. 1924, 156: ṣamA-ZAL-LA: kima ṣamkanašū u sāmu: ṣamA-ZAL-LA: ṣam nissul bašā "ṣamAzällû like kanašû (opium) and red, ṣamAzällû, a drug when there is a depression of spirits ".

Here obviously we have the essential characteristics of Hemp, particularly Cannabis Indica, hashish, binj, (a) as the material for making ropes, and (b) as an intoxicant and drug for mental exhilaration (AH. 100). Herodotus (iv, 74, 75) says that the Thracians made garments from hemp and used the seeds on red-hot stones for intoxication (i.e. the fumigation of the Assyrian prescriptions) "the Scythians, transported

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1 Re-examined: ʾṣamA-ZAL-LA = ṣamA-zal-₇₌[u] (Pl. 37, 81-2-4-269, 7) any connection here? Note also Pl. 27, 8, 1920, 1.
2 Cf. KAR. 10, 4, and ʾḥattī ša "ʾMA-NU . . . AM. 101, 2, r. ili, 8. The "rolling" suggests that the shepherd's staff is a straight cylindrical stick, without a crook.
3 Pinches, PSBA. 1906, 64, recognized the meaning "herb of grief", but did not pursue it further. Langdon, curiously enough (RA. 1933, 109), compared, I think erroneously, the gurgurrū to the Talm. gurgirā "rocket".
by the vapour, shout aloud” (cf. also i, 202). Susruta on Indian medicine (B.C. ?) mentions bhang as a remedy (FH., 2nd ed., 547 ff.), and a Chinese Herbal, c. fifth cent., notices two kinds.

With əmazallu as definitely “hemp”, we can follow up the meanings of its synonyms. əmGaN-zi-GUN-NU is a most interesting form, built up of GÁN-zi, a group given as equivalent of əmGánnašú (opium) as GÁN-zi-ŠAR (cf. əmGÁN-zi šadâ, p. 13). GÁN-zi-GUN-NU is equivalent for hashish, it may well be suggested that the GÁN has its usual value “habîlu “robber” and zi its value napištu “soul”, i.e. “the drug which takes away the mind”. GÁN-NU, the latter part of GÁN-zi-GUN-NU (hemp, hashish) must then be some form of the equivalent for GUN, burrnumu (cf. p. 220, l. 13, bur-...) originally “to twist, to weave” (Şurpu, v–vi, 115), as well as “to be two-coloured”. Consequently our equivalent for əmazallu, əmGÁN-zi-GUN-NU means “plant + narcotic + weaving”, i.e. hemp. As Sir David Prain pointed out to me, there is great similarity, superficially at least, between GÁN-zi and the Hindustani gâñjâhá, Cannabis (see DACG. xviii).

əmGÁhr-šup, imru,2 ballu (i.e. “fodder”) is possibly the hemp oil-cake, a valuable food for cattle (EB. xith ed., xiii, 263).

əmGÁhr-mu-um might possibly be a Semitic word har-mu-un, perhaps connected with the Heb. hârêm “net” (rather than “the forbidden thing”): cf. Pliny, NH. xix, 56, “the best hemp is that of Alabanda, which is used more particularly for making hunting-nets.”

əmAzallu occurs thus in MT.:

(1) Simply: ext.: Temples, †, bind, AM. 102, 39. Stomach, †, anoint in oil, AM. 52, 4, 4 (in a similar affection, †, boiled as emema, KAR. 157, 7). Swelling, anoint w th əmGÁhr in petroleum, KAR. 192, ii, 32, dup. AM. 73, 1, ii, 8 (JRAS. 1937, 417). Poultice, †, KAR. 192, 6 (dup. AM. 15, 3, 23, JRAS. 1937, 284). Hand of Ghost, anoint, †, in oil, AM. 94, 2, ii, 12. For arimtu (which seems to mean some loss of control of the lower limbs), †, roast, and bathe legs, AM. 70, 3, 1, 4.

A-ZAL-LÁ-ŠAR occurs in a prescription against a swelling: “the poison of his sickness being black” (i.e. a bruise) [apply] drugs mixed in fine-ground flour” (zid-zid) ina A-ZAL-LÁ-ŠAR (i.e. on hemp) “or variant, əm (tops) of tamarisk”, KAR. 192, 34. (Hemp is used as a pledge for the anus with various drugs in pigs’ oil, SM. ii, 678).

Int.: Depression of spirits, eat and drink alone without a meal, KAR. 203, i, 59: for šá-zi-GA (i.e. impotence), and “that he have not depression of spirits”, ib. v, iv, 35. Hand of Ghost, †, drink in beer, AM. 76, 1, 21. Stone in kidney, with ostrich-egg-shell ... anemone, thistle, in date-water and burrnumu-beer, drink, Lutz, AJSL. 1919, 81, l. 76 ff. Apparently after having eaten or drunk something bewitched, one of twenty-two [drink] in beer, AM. 87, 5, 15: similar (to annul witchcraft), †, drink in wine or beer, AM. 89, 1, 5. Uncertain, †, drink, AM. 41, 2, 7: 97, 2, 4.

1 Már a-nem špari ana ūbarra[mu] “(as) no weaver shall weave this wool into a garment”.

2 By an oversight in DACG. xviii, l. 18, I have obviously slipped in putting ībaru for imru.
Fumigate: For "poison" of all limbs, †, dry, pound, sift, and fumigate, AM. 91, 1, 10. Hand of Ghost, †, AM. 99, 3, r. 4.

Quantity: (uncertain use) ½ carat (or 1 ½), AM. 91. G, 2.

(2) Seed: ext.: Depression of spirits, crush seed of šam`azallu, mix with seed of šalimat-alt (probably Mesembryanthemum), bathe the patient in water, Ebeling, MAOG. 1933, 42, 17 ff. Evil Eye, anoint alone in ... juniper-oil, KAR. 203, i, 60.

Int.: ZI-TAB-NU-DA ša GA-ŠIM, Liebesz. 50, 7 (for symptoms see AJSL. 1930, 25), †, drink, AM. 90, r. 20. [Staying] menses with mint and saffron in beer, KAR. 194, iv. 1.

(3) Ḥuṣab: note the ritual iv R. 55 (62), i, 13, "14 ḥu-šab šam`azal-lá" to be knotted on a white thread and hung on the neck.

The uses of šam`azallu in MT. obviously coincide with the uses of hemp (Cannabis) in later medicine. Hemp is a native of the temperate parts of Persia (etc.), and is said to have been introduced into Italy in the Roman period. The Indian Hemp differs in no respect from the common plant, unless in being somewhat taller and having the leaves more constantly alternate (BMP. No. 231). It has been administered for neuralgia, coughs, tetanus, and hydrophobia (ib.). Post (FP. 3 ii, 513) describes the qunnab, hashish, as cultivated everywhere (Syria-Palestine) for the fibres of the bark from which the cordage is made. The dried flowering tops of the pistillate plants, from which the resinous exudation has not been removed, are the official Cannabis Indica (gâviyá, BMM. 502), while bhang is the dried, coarsely broken, larger leaves, mixed with a few of the fruits. P. 315 prescribes Cannabis as sedative, and anodyne, and used for menorrhagia and dysmenorrhoea. Bhángâ is used in India for dyspepsia, gonorrhoea, and applied locally to fresh wounds (BMM. 502). It should be noted that Rich (Koord. i, 134) says that no hemp is grown in Kurdistan, but on the other hand Hoefer (Chaldée, 181) mentions it as kimbis in Mesopotamia.

(2) riqQunnabu, riqqunnabu.

Towards the end of the eighth or first half of the seventh century B.C. the word riqQunnabu has come in, it being mentioned on a Sargonic letter, ABL. 368, 13) to the King's mother, along with myrrh, etc., in reference to certain dullu (work, or rites), Ebeling (Tod. 47, 10) restores a descriptive passage thus: [gu-u]n-ru-bu za-ba(?)-suO) "[Ha]n f... " but it seems very unlikely. Qunnabu is found in the sixth century (31st year of Nbk.), Scheil (RA. 1921, 9'7, trans. of Keiser, Letters, No. 162) seeing 'Cannabis' in it.1

In a very late ritual (Thureau-Dangin, RA. 1920, 70, 5) there is a mention of 10 shekels of riqQ-an-na-bu, a curious word, in juxtaposition to rišlu-ši-šu-tum, l. 6.

1 This tablet is interesting as giving the comparative values of drugs in S. Babylonia at this time: (1) 2 pi 30 qa of " Nawratu ana 5 šilku kaspi; (2) 30 qa kuku ana 3 šilku kaspi; (3) 15 mana rišulal; (4) ana 5 šilku kaspi; (5) ½ mana riqQunnabu; (6) ana 3 šilku kaspi 4-tul. kaspi ("less ½ of silver"); (7) 2½ mana inzáhrutu; (8) ana 10 šilku kaspi; (9) ½ bitu rišul (so Scheil, but possibly šaqq, ballallu); (10) rišul, ana 5 šilku [kaspi]. "102 qa of burânu (pine), for 5 shekels of silver, 30 qa of kuku (fir), for 3 shekels of silver, 15 mana of šulâl (a gum) for 5 shekels of silver, ½ mana of qunnabu (Cannabis) for 3½ shekels of silver, 2½ mana of inzáhrutu (blue dye) for 10 shekels of silver, ½ talent of myrtle (but perhaps balakkû, liquid amber or styrrax) and šin mešdû (perhaps box) for 5 shekels of silver."
D. *samukš-rim*, *irru*, *Papaver* probably *rheas* L., poppy.

Pl. 21, K. 257, viii–vii, 17 ff.: Pl. 18, obv. ii–iv, 1 ff. Partly CT.

xxxvii, 28, 108859, iv, 13–14:

<table>
<thead>
<tr>
<th>[samukš-rim]</th>
<th>[samir]</th>
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<tr>
<td>[samir]</td>
<td>[samir]</td>
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</table>

20. ...

25. *lippi nēšī* 5

*lippi nēšī šā ina me-lul-ti имвutu*; *sam*

sam *bu-la-lu* | sam *inā Šu*-ba-ri

*lippi kalbi šalmi šā ina mit-hu-ši* [имвуту] 6: *lippi* *samukš-rim*

*lippi* *nam-lū-gāl-lu* | [lippi] *samukš-rim*

Here include CT. xxxvii, 26, 108859, i, 2–10, with part-dup. K. 4199 (Meek, RA. 1920, 138) (so much of it is similar to the texts for “darnel”, p. 146, that I have discussed much of it on p. 148).

(a) [lippi] *u* [?] -mah

(b) ....... -sir 7

(c) .......... ka-me-e 8

(d) *lippi riš-ti* 9

(e) 10 *lippi nam-lū-gāl-lu*

(f) *lippi aš-su-ul-ti*

(g) 10 ....... -da

(h) 10[li] *riš-ti* 11

(i) *lippi a-bi-ik-ti*

(j) 10 .... nēšī samu šār-šār

(k) 10 ..., me-lul-ti imutu


1 It is not easy to see exactly where Col. i of Pl. 31, K. 4586 (+ K. 4216, Pl. 19, i–ii) fits.

2 See explanation, p. 224.

3 For the equivalents given here by an apparently parallel group, see p. 126.

4 The lost character appears to be thus, i.e. *samu* “red”. Cf. Pl. 42, K. 4140, b. obv. 2, dup. Pl. 44, i, 27: Pl. 42, K. 11386, 2, and Pl. 10, 14; Mat. 88, i, 51.

5 108859, *lippi* | *samukš*

6 Cf. n. 5. 108859 has for the beginning of this line (lippi kalbi šalmi šā ina mit-hu-ši ḫī... (=

7 K. 4199 appears to duplicate l. (b), i.e. ....... *sir* ... 8

8 108859 omits this line.

9 K. 4199 adds the line [lippi]-riš-ti ...

10 K. 4199 omits this line.

11 (108859) or ṭāš.

12 Restored from p. 31.

13 “Fat of destruction = maggot,” see p. 148.

14 Rosemary, p. 80.

15 This proves that *irru* is correct (and not *me-ru-*tu) for the restoration of the equivalent *samukš-rim*, unless we are to accept *me-ru-*tu as “bitter”, the poppy-capsule having a bitter taste when fresh (BMP. No. 18). Cf. irru = marru, VR. 24, 14, c.
In AH. 46 šam'ukūš-RIM was restored in the left-hand column on the grounds that (1) a plant beginning with UKUS was demanded by this connection: (2) šam'ukūš-RIM occurs in l. 29 of the text on p. 223. As for the restoration šammiiru-ru-u Meissner (SAI. 5373) had already seen that šam'ukūš-RIM-ŞAR must represent some Semitic word taken from the root ardru, since Mapša v, 37 (kina šam'ukūš-RIM-ŞAR hiruruši kišpuša), is definite that the Assyrians accepted this. Haupt (ZA. xxx, 1915-16, 60) on slender grounds had seen “opium” in the plant irru (cf. Kū. 105), and, it being obvious that this must be the word to be restored in (1), ultimately proved by ir-ru-u in (2) above, in AH. I adopted Haupt’s “opium”, which appeared to fit well.

The root of irrā, i.e. ardru, reappears in the plant šamararu, after the interpolation of one small group (šam'ukūš-TI-GIL-LA, colocynth) in p. 81. Now the intrusion of this word šam'ukūš-TI-GIL-LA, colocynth, between šam'ukūš-RIM (= irrā) and šamararu is obviously due to the fact that šam'ukūš-RIM and šam'ukūš-TI-GIL-LA both begin with the sign UKUS, which will presently be seen to represent the cucumber-like fruit of both poppy and colocynth. The Assyrian botanist, having thus interpolated the šam'ukūš-TI-GIL-LA, returns to the other forms of šam'irrā, and thereafter to poisonous plants of an allied nature.

We can, for the moment, therefore, omit the šam'ukūš-TI-GIL-LA, and continue with the following section, completing therefrom the words cognate to šam'irrā.

Pl. 22, K. 267, viii-vii; CT. xxxvii, 32, 108860 (iv, 34-7):
With these before us we have to settle that samUKUS-RIM, irrÜ, samararu and samararu are forms of poppy or opium.

From the above we have saMÀpàrat eqû = araru = illûs sam tululu(m) tul(m) samtu : "daughter of the fields" = araru = "in the mouth of the common people "red bloom ".

This is a very good first indication that we are on the track of the red poppy, which is one of the beauties of the Mosul fields, the only other possible flower, in point of fact, being the red anemone (p. 141). Since samararu, so far as I know, does not occur in MT, and yet samUKUS-RIM appears some forty times, we should be justified in making the deduction that the former represents the flower (i.e. the simple form araru), and the latter the capsules from which the product, an inspissated milky juice, is obtained (irru).

The form merû, synonymous with (or perhaps erroneous for) irrû, may be from marûtu "be bitter" (see p. 223, n. 15), but this is uncertain; at all events it is in the particular group given as equivalent to merû that samûs-tû (probably the heliotrope) is also mentioned, which suggests that samûrû has certain doubtful implications.

We can trace this meaning "opium" for samUKUS-RIM thus in MT : (a) Simply: Ext.: Eyes (double vision ?), †, including liû nàsû "lion fat "; a synonym for opium (here samUKUS-RIM is glossed samûRIM), AM. 17, i, 9. Feet ("like bulbulû iharraû") dry alone, bray, apply, AM. 74, iii, 15: broken footsole, dry alone, bound in fat, bind on, of. iv, 18. Swelling, alone, bray, bind on, KAR. 192, 1, 39.

Int.: Stomach, 7 grains, †, drink KAR. 157, r. 2 (cf. 7 grains of samNAM-tlá, also opium, in the recipe following, ib. 7, for strangury). Stone (in kidney), alone in beer, drink, Lutz, AJSL. 1919, 51, iii, 68 (!).


Enema: Stomach, †, KAR. 157, r. 21.

Uncertain use: "retention of sick anus," †, AM. 40, 5, iii, 17.

(b) Seed: Ext.: Weak hair (?), †, AM. 4, 1, 26. Temples, †, after shaving the head, bind on, CT. xxiii, 39, 1.

Int.: Urinary trouble, alone in ... (†), drink, AM. 59, 1, 18. Stomach, with mustard in beer drink, Kû. i, ii, 31: †, in beer drink, Kû. ii, iii, 16.

1 CT. xi has | . . . | . . . | samûs-
2 Landsberger (ZA. 1933, 231) still considers it a kind of cucumber on account of its ideogram urûs, and wants to make it "colocyth" : "Dass Meissner die Haupt'sche Bedeutungsbestimmung irru = 'Mohn 'als sehr wahrscheinlich bezeichnet und Thompson (Herbal 46) von dessen Beweisführung sagt : ' in spite of weak premises, he was right ' ist schwer zu verstehen, denn alle Voraussetzungen dieser Identifikation sind völlig haltlos.
3 Doubtless Papaver rhoeas L. Herzfeld (Beih. ii, 33) saw Glaucomum grandiflorum Boiss. at Qalâ'ah Sherghat.
4 Lútûl(m) tul(m) needs a note. It is properly the Spurge, Euphorbia helioscopia L. (p. 150), having a green flower, which may well be regarded as of similar shape to that of the Poppy. Lûtû is used in India for "poppy " (P. rhoeas, J.M. 76), and the Arabic lûtû is "pearl ". Gerarde (305) says that some of the anemones are called "in Turkie tong " lûtû benzedt.
2:2G

DICTIONARY OF ASSYRIAN BOTANY

(c) še-rú (shoot): Uncertain use, flesh, AM. 69, i, 16. Stomach, alone in wine, honey, and purified (holši) oil, drink, Kū. iii, i, 36.

(d) Root: Probably head, reduce alone, apply, KAR. 191, r. 9 [Anus (?)], alone, reduce, apply, KAR. 191, r. 9. (As šuruš, root) for a head full of maršit matquti, probably alone, dry, pound, apply, CT. xxiii, 50, 8.

(e) Fat of šamUKUS-RIM (cf. in contrast alongside it, PA šamUKUS-RIM):

Ext.: Stomach, †, poultice, AM. 40, 5, iii, 10. Swelling, with PA šamUKUS-RIM, and fine-ground flour, bind on, AM. 73, 1, i, 22 (dup. KAR. 192, 17).


(f) PA (tops): Ext.: Siddat (blains), †, bind on, AM. 32, 5, 5, 7 (cf. 93, 2, r. 9). Swelling, with fat of šamUKUS-RIM and fine-ground flour, bind on, AM. 73, 1, i, 22 (dup. KAR. 192, 17): pound alone, apply, KAR. 192, 2, 26.

(g) Šaruš ša šamUKUS-RIM, the capsule (?), stomach (?), dry †, probably drink (Kū. ii, ii, 15).

(h) "Stone" of šamUKUS-RIM (perhaps the stick-opium).

Ext.: Swelling, †, poultice, AM. 15, 3, 5 (JIRAS. 1937, 281). Head, after washing with various drugs, bray alone, anoint mixed with cedar oil, KAR. 202, 46. (A curious comparison is made in AM. 16, 3, 4: "If ditto, 'red stone' which is like bulalu") to anoint eyes. Bulalu is the equivalent for šamirru in Šubari (p. 223), and may be connected with the Heb. bālāl "to confuse" (from its effects), or the Arab. bālāl "milk", on account of its milky juice.1

(i) ZID, powder: Ext., Swelling, †, bind on, AM. 74, i, ii, 13: alone in himetu-ghee, anoint, KAR. 192, 2, 21: †, ib, 39.

(j) Inbu, fruit; Ext.: Eyes, †, AM. 8, 1, 7: alone (?), uncertain, AM. 13, 6, 20. Sickness on body, †, apply, AM. 44, 1, ii, 18.

Int.: "Fruit of poppy before they have massed it" 2 alone dry, bray, drink, in beer ("when a man eats bread, drinks beer, and his stomach burns, is inflamed", and "when a man eats bread, drinks beer, and his stomach burns, his urine is stopped"), AM. 48, 1, 8, and 11 + 78, 3, 5, and 8, RA. 1929, 79 (both cases are apparently described as UD-DA-DI-DI, which is difficult to reconcile with DACG. 22). Landsberger (ZA. 1934, 161) translates GE. X, iii, 6, sar-ba u UD-DA as "Nässe und Durre "). Stomatich (gall), drink with galbanum and mustard in oil (and šarru, he will vomit), Kū. iii, ii, 2. Note also the use of the Semitic equivalent of šamUKUS-RIM, šarru, in MT.: šamšarru: Ext.: †, 2 shekels of šamšarru boiled in beer, applied to the (sick) place, KAR. 187, 8. Bruise, †, poultice (šamšarru-e), AM. 79, 1, iv, 17.

Int.: Stomach sick (maruš), drink a-ar-ti ir-ri-e alone drink in kurumnu-beer, KUB. iv, No. 49, ii, 1.

We can now turn to the various synonyms and bye-names for šamšarru, šamšarru, about which, I think, as "opium" and "poppy" there can be little doubt.

1 Bulalu is also used of šamantumu (p. 234).
2 RA. 1929, 73, 79, ukkappida.
(a) ʾām Sa·mu dir (sāmu) "the red plant", or "drug", referring probably not to the red poppy itself, but to the red-brown opium as it is massed in small sticks (cf. under elpitu, p. 9).

(b) "Lion-fat"; "fat of a lion which has died while copulating," "fat of a black dog which has died while fighting"; "fat of mankind" (with a curious equivalent ʾām ʾukūš-rīm-wš (?) ("male (?)") (p. 223)), which are all synonymous with the simple "fat of ʾām ʾukūš-rīm", with the traditional alchemists' secrecy about them. This is, of course, the milky juice of the poppy-capsules (P. 827). (On ʾām tiḥiʾāt stūtīn and the stūl-group, see p. 148.)

(c) ʾām Bulatu, the drug which "confuses", p. 223.

(d) ʾām Aš-dug-ga, ʾām mi arratī tami "drug for laying a curse", probably representing a play on the word arāru "to curse" (the root of our ʾām araru, ʾirrū), as also occurs in the pun in the Maqlū-passage quoted above, to which the Arabic term "the cursed tree" supposed to be hashish (Qurān, xvii, 62, A. R. Neligan, The Opium Question, 82). Indeed, we might almost see a parallel (but perhaps only to the ear alone) of the Syriac ma:nālḥā "the poppy" and the Assyrian mammit "tabu". Then, again, in Num. v, 11 ff., a water which the accused woman must drink is called in Hebrew ʾām mārīm ha-mārūrīm "the bitter, accursed waters" is curiously paralleled by (a) our ʾām irrū from arāru "to curse", and (b) the equivalence ʾām ʾukūš-rīm = ʾām sa·mu marru "the bitter drug" (see p. 223, n. 15). For the origin of the connection of a narcotic or poison connected with arāru, we must seek a very primitive meaning in the word "to curse".

Frank's ingenious comparison of the Phoenician ʾān ouvān, pastinaca, Diosc. iii, 73, ZA. 1910, 171, with ʾām Aš-ka-ga (ʾām Aš-dug-ga) is untenable.

(e) ʾām.pa-pa-pa, ʾām ara:rat araru "the tops of the poppy", must presumably be the capsules. Can (pa) pa-pa be the origin of the word papaver?

(f) ʾām a-a ba sa "enemy of muscles" may refer to the narcotic powers of the opium.

(g) ʾām Hanzibatu, like the plant ʾām ʾandabitu (see Pl. 39, K. 8287, 6 and 8) is apparently a quadrilateral, built up, in this case, of ʾān + zibatu, and in the latter similarly with ʾān + dabtu. The former suggests the Syr. qātel dēbāḥ "wolf-killer", or ha-neq dēbāḥ "wolf-strangler",aconite, the ʾān being possibly from ʾānū "press on" (but not satisfactory), and the zibatu from zibū "wolf".

In any case it is unnecessary to make it equivalent to " ʾām hanzilatu", a non-existent Assyrian word for the Arab. ḫanzal " colocolyouth ".

(g) ʾām ʾana-a-d- . . . uncertain.

(h) ʾām na-m-till-la "plant of life", fairly frequent, and perhaps Adad-nirari iii refers to it (1 R. 35, 1, 2) "his shepherding like ʾām na·m-till(i) he made good for the people of Assyria."

It occurs in MT.:

(1) Simply: Ext.: Hand of Ishtar, †, bind on (ʾāš-su), KAR. 186, 33. Int.: Liver, alone, 4 shekel in 10 shekels of oil, drink, Kū. iii, ii, 66. Suppository, †, AM. 43, 1, 3: enema, stomach (esūlā ḫibbi), †, KAR. 57, r. 26 (see also 32).

(2) Root: aphrodisiac (†), "when a man has approached his wife and ... towards his wife his heart is not lifted up ..."; the third
prescription has "root of šamNAM-TIL-ŁA, ša-ma-ra . . ., AM. 65, 7, 5. 
Anus-trouble, †, AM. 58, 9, r. 5.

Note the mention of "7 grains of šamNAM-TIL-ŁA", †, in enema, 
KAR. 157, r. 7, the preceding receipt speaking of "7 grains of šamUKUS-RIM", †, to be drunk.

(i) šamAssuma, uncertain.

Here, then, we have a drug of which probably more parts are used than any other simple plant in MT.: simply, seed, šE-RU (shoot), root, fat, PA (tops), šaruwu (capsule?), "stone" (whatever this may be), powder, fruit. Its use is for eyes, feet, head and temples, stomach, swelling (common) externally; and stomach (frequently), urinary trouble, and in pregnancy internally; and as suppository in the anus. These coincide exactly with the use of the poppy-drugs: apart from its ordinary use as an internal anodyne, especially in its use in genito-urinary diseases, irritability of the bladder or uterus, and in the passage of gall-stones (BMP. No. 18), and externally "the decoction of poppy-capsules is a common anodyne and demulcent fomentation when applied hot to inflamed parts, bruises, sprains, and other painful afflictions" (ib.). Indeed, if certain sculptures explained by Speleers (Extr. du Bull. des Musées Royaux, No. 6, 1938, 122 ff.) represent a figure holding a three-headed poppy, with its capsules (upside down, so that the seed of the ripe capsule would certainly fall out), and have a religious significance, they may perhaps explain šamAfš-DUG4-GA.

With the introductory groups šamUKUS-RIM "capsule of the calyx", i.e. poppy-capsule, and šammarat eqlī "daughter of the field", we can continue with šamkanāšū as the opium proper, in the section following the above:—

(4) Pl. 22, K. 267, viii-vii, 42 ff.:—

<table>
<thead>
<tr>
<th>šam-GAN-ZI-ŠAR</th>
<th>šamka-na-šu-u</th>
<th>45. GAN-ZI-ŠAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>zir GAN-ZI-ŠAR</td>
<td>zir šam</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>šam-GAN-ZI-ú</th>
<th>šamšar-ma-du</th>
</tr>
</thead>
<tbody>
<tr>
<td>gu-mul GAN-ZI</td>
<td>šamšar-ma-du</td>
</tr>
<tr>
<td>šamGUR5-UŠ</td>
<td>a-šar-ma-du</td>
</tr>
<tr>
<td>šamBAR-GUR5-UŠ</td>
<td>šam</td>
</tr>
<tr>
<td>šamka-su-u</td>
<td>šam</td>
</tr>
</tbody>
</table>

For the first line cf. Mat. 86, 12–10, 5, GAN-ZI-ŠAR = ka-n[a]-šu-u = a-da-ma-[tu]. The first three lines appear to be duplicated in 108860, iv, 52–4 (CT. xxxvii, pl. 32, mutilated). As these groups follow the two concerned with the poppy (except that another small group, šamUKUS-TIGIL-ŁA, colocynth, has been interpolated between the different groups for the poppy), we should here weigh the evidence for the possible connection with opium or other narcotics.
There are four varieties of opium poppy. Two of them have white flowers and yellow or white seeds, one has red flowers and seeds, one purple flowers and seeds... In Persia the variety most cultivated is the white, *Papaver somniferum* L. var. *album*” (Neligan, *The Opium Question*, 12). *P. somniferum* occurs in Syria (petals white or rose-coloured, *FP.* 2 i, 36), nor must the red poppy, so common in the Mesopotamian fields, be forgotten. (For the numerous species of poppy see *FP.* 2 i, 32; for a picture of the opium-poppies in Turkey, see *EB.* xith ed., xx, 133. For a description of opium-gathering see Rauwolff, 115.)

The cultivation of the poppy yields several distinct and paying substances. These are (1) the inspissated sap of the green capsules—crude opium, which exudes therefrom to dry spontaneously; (2) the moisture and soluble substances which drain from the opium, known as *pasewu*; (3) the poppy petals; (4) the ‘trash’ or powder prepared from the leaves, dried stems, etc. (this is used in packing the opium *CPI.* 856); (5) the capsules; and (6) the oil-seed” (*CPI.* 854). The seeds of poppy are said to have no narcotic effects (*CPI.* 860).

The word *samAdumatu* must be “the Red Drug”, cognate to the Heb. ‘adhammâ, the reddiness of Esau; it also = *im-gûn-nu*, orpiment (DACG. 47, 52). I was wrong in *AH.* 43 about *sat marra-tum* (or *marru-tum*), in reading it *samMarra-tum* “the bitter land”, i.e. the Persian Gulf (*nâr* marratum); the word *sat* is probably the same as in *sat mušî, sat urri* “period of night, period of morning”. In other words, we have “Red Drug” = *samkansu*, in the bitter “period”, i.e. when it has become bitter. The opium of Asia Minor is reddish or chestnut-brown, while the Persian from Trebizond is light brown, somewhat reddish (*BMP.* no. 18). For the bitterness see *p.* 223, n. 15.

*SamKansu* is obviously a loan-word from the Sumerian GÂN-ZI-ŠÂR, the latter word occurring in the longer group *samGân-zî-ûn* (*Cannabis*). GÂN-ZI literally would mean “stealer of the soul”, and GÛN-NU “twisted, woven” (*p.* 221), i.e. hemp, in the longer group, and consequently we may see in GÂN-ZI-ŠÂR as the “plant which steals away the soul” simply a word for narcotic, more specifically the opium. Indeed, we find in *l.* 43 *samkansu* compared to *šam-namtar*, i.e. the NAM-TAR plant, the mandrake, another narcotic.

P. 228, *l.* 44 “its *pa* (tops) young, tender (?) have juice” is exactly the case, the green capsules exuding the crude opium (for this phrase cf. the *samAmadu*, *p.* 318).

The group in *l.* 47–51 is similar. The word *samGân-zî-û* is probably the same as *kansu*; its equivalent *šarradu* is curiously like the Syr. *šmâdrâ* “flower”. *Gamul* (GA-MUL) GÂN-zî may perhaps be the same as the Syr. *šmalâ* “swEEPings, quisquiliae”, suggesting the “shireh” oropium or dross, which is the burnt residue left in the bowl of the pipe after smoking, and is habitually collected and smoked again (Neligan, *op. cit.* 18), or perhaps the “trash” (above).

1 If we are to see in the Indian gañja (*bînja*) the Sumerian GÂN-ZI-ŠÂR “opium” rather than the *šamGân-zî-nûn* “Cannabis”, we must postulate a more general use of the word for *bînja*, which in Palestine is applied to the Hyoscymus (*FP.* 2 ii, 262). Sprengel, *Dioc. ii.* 601, quotes Bocchart as seeing *bînja* in the Phoen. *gânas* of Apuleius. Cf. *kânasuttum* šâr or *kândattum* šâr (*MB.* 61).
"sam" Kasû is the word for "rose" (p. 194), curiously used here, and suggesting a similarity to the Aram. word "rose" used for any flower.

E. "sam"GUR5, šakiru, Hyoscymus niger L., henbane.

"sam"GUR5-uš, aşarna-du.

CT. xi, 46, 37:—

ša-ri-ra | "sam"GUR5 | ú-sa-ğiš-gal-la-ka-gu-ya-k[u | ša-ki-ru].

(For the equivalents of "sam"GUR5-uš see p. 228.)

"sam"GUR5 occurs thus in MT:—


Int.: Jawadv ( ?), †, drink (?) in beer, Kü. ii, iv, 14. Stomach, with rišše-li-par, drink in beer and iarrum, Kü. ii, i, 45. Sorcery, †, drink in . . . or in beer, AM. 48, 2, 7: uncertain, to assuage some "sorcery" which he has eaten or drunk (?), †, [drink ?] in beer, AM. 87, 5, 12.

(2) Seed: Ext.: Lungs, †, poultice, AM. 54, 1, 7. Itching on feet, †, poultice, AM. 74, iii, 9.

Int.: to stay (?) menses, with laurel-seed and thistle-seed in beer, drink, KAR. 194, iv, 8.

Note that in order to prevent sorcery from approaching a man's house, spread (tetimir) "sam"DIL-BAT, "sam"GUR5, uš-sa-beer, sulphur . . . on the outer door and hinge, KAR. 298, r. 43.

(3) Root: Ext.: anoint, bind (aš-su), and put on neck, †, KAR. 70, 36 (Liebesz. 30, 36). Against AN-TA-SUB-BA, etc., †, bind on (aš-su) KAR. 186, r. 30.

(4) PA (tops): Ext.: unknown disease, †, poultice, AM. 50, 5, 4.

(b) "sam"GUR5-uš:—

(1) Simply: Ext.: Teeth, †, AM. 78, 1, 29: decayed teeth, alone (Vade-mecum) Pl. 10, i, 9, dup. Meek, RA. 1920, 181, S. 1701, etc. (JRA. 1934, 773).

(2) Seed: Ext.: Temples, †, fray, anoint in oil, AM. 103, 21.

(3) Root: Ext.: Against AN-TA-SUB, †, bind (aš-su), KAR. 186, r. 17. Text mutilated, but prob. root of "sam"GUR5-uš which in its uprooting the sun has not seen, apply alone to the temples, for eyes, AM. 14, 5, 9.

The following is to be added to p. 228:—

| "sam"BAR-GUR5-uš | šor-ma-[ša] |
| "sam"GUR5-uš | . . . |
| "sam"GUR5-uš | kiššet-[šu] |
| ["sam"GUR5-uš] | ku-ši- . . . |
| . . . "sam"GUR5-uš | kur-ši- . . . |

ii, R. 46, 72-6.

XIII

MISCELLANEOUS UNCERTAIN PLANTS
MISCELLANEOUS UNCERTAIN PLANTS

A. štamAprušu (spelt usually šamáp-ru-ša (v. ša), but once šamap-ru-[ša], perhaps Siderites sp.
This occurs thus in MT:
(2) Seed: Prob. swelling with šamsáhu (Artemisia) and šamazarzallu (Cratageus) anoint, AM. 73, 1, ii, 4.
(3) ZID (powder): Blains (šigati) with 45 others, bind on, KAR. 192, r. ii, 53 (šamap-ru-š[e]).

There would appear to be no doubt that the reading is šamap(b)rušu and not šamlidrusu, and hence the Persian aprúž may be cognate (بستان آلورز, a garden of aprúž), Kestron, Siderites (EF. ii, 72 : EP.ii, 373).
It grows in Mesopotamia (Ainsworth, Res. 34), and its ancient use for staunching blood and healing wounds is not remote from its frequent ext. use in MT. A “species frequently grown in gardens is the Syrian or sage-leafed iron-wort (S. syriaca)” (PC. xxi, 1841, 491).

B. šamLú-GÁL-LU (= akusímanu (??)) : šamšUR-SUR.
Pl. 19, K. 4216, viii–vii, 1–2:

---

šamšUR-SUR[Š]  šamLú-GÁL-LU

---

(a) šamLú-GÁL-LU :
Cf. AM. 104, 32 : 2 INIM-INIM-MA SÁK-KI-DIB-BA ina eli taq-si-ri šá šamLú-GÁL-LU : “Two prayers for an affection of the temples over a bundle of LÚ-GÁL-LU-plant,” but it is not clear what the procedure after this is. The plant is used ext., ♠, AM. 88, 2, r. 2 ; it is used to rub on with “the blood of a black serpent” (Ricinus, p. 130), with black and yellow sulphur and cedar blood for the attack of a ghost, KAR. 56, 3, and similarly, ib. 8, and to rub on horses, ♠, in the purification of a stable, KAR. 91, r. 11. Its use with Ricinus (if this is correct) with sulphur and cedar-oil, to be rubbed on, suggests a soap.

(b) šam-ka-si-ma-nu = šam-sáh-la-a-nu (wild cress, p. 55) VAT. 9000, part dupl. of K. 4185, pl. 26. It is to be drunk with 36 others for some urinary trouble, KAR. 193, 10 (šamakusímana).

1 108860, CT. xxxvii, 28. I, 21–2 gives a plant šamšUR-SUR twice. The reading a-kú-[si-ma-nu] is not certain ; it might be a-lú ... Note šamšUR-a-nu in Luck. i, 215.

Pl. 27, 82-5-22, 1777: Pl. 32, S. 1328; Pl. 39, K. 10126 + 79-7-8, 350:

Since the forms ankinate, ankinati, and ankinudi all occur, there is apparently no doubt about the transliteration.

This occurs thus in MT:


Int.: Strangury, Ħ, drink either in strong wine or ... , AM. 59, 1, 37. To stay fluid in womb, Ħ, drink in beer, KAR. 194, iv, 36. [Hand] of Ghost, Ħ, drink, AM. 14, 5. Uncertain use, lungs (?), AM. 45, 1, 4.

Uncertain use, lungs (?), AM. 45, 1, 4.

Probably from its name "calyx of the pool", and the Aramaic qutṣin, qīṭīn, Nelumbo nucifera Gärtn., the similarity of the Assyrian ankiniṯ being obvious. The Nelumbiaceae are associated by some with the Nymphaceae or water-lilies, which they certainly resemble in appearance (PC. xvi, 1840, 140). They are used for many diseases (IMP. 1, 75), and occur in Syria-Palestine, FP. i, 30. The best known is said to be the N. speciosum Willd., Middle Asia and Egypt: "ihre stärkereichen Rhizome, sowie die haselnussgrossen Früchte (ägyptische Bohnen) werden roh und gekocht gegessen" (MPB. ii, 600): "its nuts are supposed to have been the sacred bean of Pythagoras; its fleshy stems are used as food by the poorer inhabitants of China" (PC. ib. 141). Particularly interesting is the name [sam]a-a-ar ku-bu-uṭ ša šadū(i) ("sheen, colour, of ku büt of the mountains"), "like an acorn" (lamme, p. 247), i.e. bean or hazel-nut size.

2. [sam]Puḫnuḫu.

In VAT. 9000 we have:

1 Perhaps part of K. 4354, Pl. 18.
2 Line omitted on K. 4354.
3 S. 1328 ii.
4 S. 1328 ... HA.
5 Line omitted on 82-5-22, 1777.
6 82-5-22, 1777, omits.
1. *šam* **Arīḫu**, a drug for šurdi, possibly, but not probably, to be connected with the diagnosis in *AM*. 51, 4, 5: "If a man who is sick of šur-đu ša *šamaš* the thirtieth day 7 and 7 pu-ut-ri i[k (?)]-..., which might mean an attack of sun-heat, either sunstroke, or (since šiggatu "blains" or sim. is in the next prescription) merely sunburn. *šam* **Arīḫu** is used in *MT*. internally for stomach-trouble (heartburn) when the patient is unable to rest by day or night, his limbs being "poured out"; he has eaten or drunk some "sorcery", for which bray *šam* **Arīḫu** alone, drink in grape-juice, and he shall evacuate, *AM*. 48, 2, 3 (paralleled by a similar receipt with *šam* **matgu** in grape-juice, *ib*. l. 5). As it would appear to be a purge, *šurdi* is probably to be explained as from *ridu* "drive".


\[
\begin{array}{c|c}
\text{šam} & \text{MAH} \\
\text{šam-pu-ḫu} & ... \\
\text{šam-meši(?) šam-ri} & ... \\
\text{la mur di} & ... \\
\text{ši šu ni} & ...
\end{array}
\]

3. *šam* **Gānu**, is paralleled in its use for coughs by *šam* **Gānu** (seed of

---

1 *Tab.-Ed.-Da.* (Cf. Pl. 31, K. 8846, obr. 1-5, ... *sepṭ* ... ... *bil* ... *šam* **gā-ā-n[u] ... *šam* **la-ri** ... ... *šam* **la-pu-nu** ...).

2 The reading *-ri* of Matouš seems a manifest error.
tamarisk): 𒇼𒇼ga-a-nu | 𒇼𒇼 ha-Ši ina 𒇼𒇼ni ṣal-Ši | NU pa-tan ḫal-Šu lu ina šikari ṛšatti (KAR. 203, iv, 44, which surely must be compared to ib. 34, 𒇼𒇼ga-a-Šu 𒇼𒇼 sam su-[a-Ši-zi ina 𒇼𒇼ni ṣal-Ši] NU pa-tan | liša]-šu ṛšabat(bat) ṛšatti, i.e. it is prescribed to be drunk for cough (with slight variation in each) in refined oil: also ib. vi-v, 28 (dup. Pl. 36, K. 4687 + Rm. ii, 412, 12, and Pl. 43, S. 60, 6) 𒇼𒇼ga-a-Šu | 𒇼𒇼 ni libbi ša ši | tazak ina 𒇼𒇼ni ṭaṣaš, rub on in oil to remove “fire of the stomach” (parallel to the use of 𒇼𒇼karan šelahbi (cf. l. (g), p. 235).

The species “šam hilabamu of the mountains” is for removing bile (line k, p. 235). [Here the Author inserted a rough note, showing that he intended to compare hilabamu with an Aram. form ḫilbānā quoted from FJ. I, 221, said to mean “ivy”. For the modern medical uses of ivy he quoted HS. 202: the berries of the ivy for rheumatism, fresh ivy leaves for corns, ivy gum for hollow teeth, and uses in the treatment of the eyes and of headache.]

E. ʾAsdanu, unknown.

It occurs in MT. thus:

For sick anus, while green, mix with fat, apply to anus, Pl. 30, S. 698, 14: KAR. 203, r. iv–vi, 7.

F. šam Bukamu (sirkanu).

VAT. 9000 gives:

\[
\begin{array}{c|c}
šāmBu(sir)-ka-Šu & šāmSi-ib-pu \\
šāmGu-ma-Šu & šām
\\nšāmlib-bu AN-NIN-Piš & šāmQu-qu-bi-Šu
\end{array}
\]

In VM. we get Mat. 88, i, 23–5: Pl. 28, K. 4140, A, 6 ff.:

\[
\begin{array}{c|c|c}
\cdots\cdots\cdots & [ina] ḫib AN-NIN-Piš \text{ 1} & \cdots\cdots\cdots \\
\cdots\cdots\cdots & [ina] zibbat a-da-ri \text{ 2} & \cdots\cdots\cdots \\
\cdots\cdots\cdots & [ina] iṣid bu(sir)-ka-ni \text{ 4}
\end{array}
\]

In MT. šāmBu(sir)-ka-Šu is used, probably to dissolve stone in the kidney, AM. 39, 6, 5. Iṣid bukamu (sirkanu) is an animal of the lower orders (Landsberger, Fauna, no. 248).

G. 1. šāmEkidu.

2. šāmNagahu.

3. šāmKusīnu.

4. šāmBuklu.

VAT. 9000: (dup. Pl. 26, K. 5440, B) gives:

1 K. 4140, A, zibbat Piš.QA.GAZ.Niṭā.
9 K. 4140, A, ḫim, and repeats this line.
3 K. 4140, A, has no line.
4 K. 4140, A, iṣid bu(sir)-ka-Šu.
### MISCELLANEOUS UNCERTAIN PLANTS

<table>
<thead>
<tr>
<th><code>sam</code></th>
<th>...</th>
<th>-RA</th>
</tr>
</thead>
<tbody>
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<td>-HAR</td>
<td></td>
</tr>
<tr>
<td><code>samGA</code></td>
<td>-HAR</td>
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</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td><code>samku-si-mu</code></td>
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</tr>
<tr>
<td><code>sam</code></td>
<td>-na-</td>
<td>-[d]i-e</td>
</tr>
</tbody>
</table>

| `sam-an-ki-du` |
| `sam` |
| `samna-ga-hu` |
| `sam` |
| `sam` |
| `sam` |
| `samša-az-bu-tū` |
| `sam` |

### H. 1. `samEL-KUL-LA`.

2. `samMUH-KUL-LA`.

Note that `samEL-KUL-LA`, which we should naturally have expected to be the same as `samMUH-KUL-LA` (i.e. `sameli-KUL-LA`) occurs in three prescriptions along with the latter in MT. The various occurrences of the different forms in MT. are as follow:

(a) `samEL-KUL-LA`: three instances with `samMUH-KUL-LA` in the same prescription: †, anoint, AM. 97, 4, 11: rub horses, †, KAR. 92, r. 11. Strangury, †, AM. 59, 1, 38. Once with `samIR-KUL-LA`, †, for sorcery, drink in wine or beer, AM. 89, 1, 1. Without either, Hand of Ghost, †, anoint, AM. 95, 2, 10: 97, 4, 15. Scorpion-sting, †, anoint, AM. 91, 1, r. 7.

(b) `samMUH-KUL-LA` (besides the three instances quoted above): anoint, †, AM. 103, 1, 21. Hand of Ghost, †, 97, 4, 12. When saliva is not stopped in the mouth, with `samMastakal` (etc. (?)), drink in kururnu-beer, AM. 31, 4, 15 (see `samili-KUL-LA` below). For weak hair, †, wear (?) on neck, CT. xxiii, 36, 55. Also along with `samIR-KUL-LA`, loins, †, uncertain use, AM. 31, 1, 7. Uncertain, †, AM. 88, 1, 3.

(Seed) [Lungs], †, uncertain use, AM. 83, 1, 19. A red kind, for Ghost, †, anoint in oil (finger pricking him), AM. 14, 5, 2.

(c) `samER-li-GUL-LA`: Hand of Ghost, †, drink, AM. 14, 5, 4: `samERli-KUL-LA`, “when a man’s saliva comes plentifully and is not stopped,” †, eat, drink, Ebeling-Unger, AfK. 1, 1923, 23, 10 (see an entry under `samMUH-KUL-LA` above).

(d) `samER-(= IL)-GUL-LA` ; Lungs, †, anoint, AM. 45, 1, 10.

(e) `samER-(= IL)-HUL-LA` ; “allows no sorcery,” Thureau-Dangin, RA. 1921, 165, 21.

From the above it would seem that `samMUH-KUL-LA` is the same as `samERli-GUL-LA` (because of its Assyrian translation for the first word), and again, as `samERli-KUL-LA`, since the respective prescriptions in which this latter occurs with it are practically the same; and probably the same as `samER-(= IL)-GUL-LA`. We have, however, three distinct forms in `samMUH-KUL-LA`, `samEL-KUL-LA`, and `samIR-KUL-LA`. `samER-(= IL)-HUL-LA` is an uncertain instance.

Certain resemblances in the employment of these in MT. with `samER` or `samERzallu` suggest a connection, particularly as one instance of a red kind of `samMUH-KUL-LA` is given (cf. p. 319, where two species of

1 K. 5440, B may be `samga-`...  
2 K. 5440, B.
za’rûr are mentioned, a red and a yellow). But šammarzallû occurs in the same prescription as šamēl-kul-la (AM. 95, 2, ii, 10), and šamel with šamēl-kul-la and šamaḫ-kul-la (KAR. 91, r. 11), so that the four are certainly distinct.

I. šam Habšallurû, unknown.

Pl. 31, K. S249 (+ Pl. 40, 82-5-22, 576, which gives nothing) : dup. VAT. 9000 :

<table>
<thead>
<tr>
<th>šam be-la qu-di</th>
<th>šam hab-sal-lu-ur-lu</th>
</tr>
</thead>
<tbody>
<tr>
<td>šam a-rit 2 šamni</td>
<td>šam</td>
</tr>
<tr>
<td>šam a-tid šamni</td>
<td>šam</td>
</tr>
<tr>
<td>šam hab-sal-lu-ur-lu</td>
<td>šamul-lu-lu ša šame(e) 3</td>
</tr>
</tbody>
</table>

"Warrior's slingstone," "giving birth to oil," "shooting oil," "cleanser of heaven," would appear to be the meaning of the synonyms of šhabšallurû. Olive is a possible suggestion, but very unlikely.

J. šama-KA-AB-BA, imbū tamtim.

Pl. 25, K. 4398, i–ii, 2–6, gives :

<table>
<thead>
<tr>
<th>šam šâ-mi kâ-riḫ tam-tim</th>
<th>šamim-lu-u tam-tim</th>
</tr>
</thead>
<tbody>
<tr>
<td>šam KA-AB-BA</td>
<td>šamim-lu-u tam-tim</td>
</tr>
<tr>
<td>šam KA-AB-BA rapâštu(tu)</td>
<td>šam KA-AB-BA</td>
</tr>
<tr>
<td>šam KU-SA A-AB-BA</td>
<td>šam kakkâb tam-tim</td>
</tr>
<tr>
<td>šam KU-SA ia-a-me</td>
<td>šam KU-SA ia-a-me</td>
</tr>
</tbody>
</table>

Smith, CT. xxxvii, 108859, ii, 33 :

A-AB-BA rapâšum(hum) | KA-[A-AB-BA]

Mat. 88, 5, 12–13 :

<table>
<thead>
<tr>
<th>šam a-ma-ši-ū(?)</th>
<th>...-na-...</th>
</tr>
</thead>
<tbody>
<tr>
<td>šam ku-ši ia-me</td>
<td>... tam-ti</td>
</tr>
</tbody>
</table>

šamKA-AB-BA (imbû tamtim) is found in MT. thus :


Ghost, †, prob. bind on (aš-su), AM. 29, 1, 2 (+ 89, 3 + K. 2175, iv, CT. xxiii, 22) : †, in cedar-blood anoint, KAR. 56, 6. Against bennu, alone, BM. 122654 (from Nineveh). In a charm against unpopularity, etc.

1 VAT. du. 2 VAT. ri-id.

This line not on K. 8249.

3 Cf. also šam KU-SA A-AB-BA and šam KU-SA ia-a-me, Pl. 18, K. 4354, xvi-xv, 10–11 : see p. 36.
with "heliotrope", hellebore, and magnetic iron-ore in various sweet oils, AM. 87, 1, r. 6.¹ Scorpion-sting, †, in cedar-oil and oil anoint, AM. 91, 1, r. 6. "Poison," †, in [oil] of cedar anoint, AM. 93, 4, 5: poultice, †, AM. 98, 3, 10.

Pessary: in wool alone in uterus, KAR. 194, iv, 15.

Fumigate: Temples, probably, with fir-turpentine, sumach, †, AM. 4, 6, 2. Ears, †, AM. 33, 1, 33, 36. "Poison of all limbs," †, dry, pound, sift, AM. 91, 1, 9: "poison," with black sulphur, turmeric and dry bitumen, ib. r. 2, dup. AM. 92, 4, r. 2. Ghost, lying on a patient, †, in cedar-blood, ina šu-šu (in fire (?)), AM. 33, 3, 14, dup. 82, 4, 9, and KAR. 182, r. 15 (cf. ib. 12).

Int.: Strangury, with ostrich-egg-shell in oil + beer, AM. 59, 1, 16. Stomach, prob. drink, in beer with ;base :min (lime) and anemone, EA. 186, 4, cf. 6. Bruise (dikšu), †, [drink], Kù. ii, iii, 70. Uncertain use, 2 shekels of . . . a-ab-ba, AM. 62, 1, iv, 2.

K. šamKalbanu. Unknown.

VM. Mat. 88, i, 78 (cf. Pl. 42, K. 274, 9), [š]kal-ba-nu | ina ša-su, which surely must be corrected with K. 8764, 4, ina ba-a-su. Scheil, RT. xxxiv, iii, compared it to galbanum, but I doubt this. If it were related to various Arabic words containing the word for "dog", it should be a thorny plant: its connection with bāṣu "sand" is difficult, and we can hardly suppose that the reference is to the sandy soil in which it grows. Again, it is not likely to be the fluff of the bulrush tops, which to-day is used in potters' clay: bāṣu can hardly mean "clay".

L. ššan Kù-si, unknown. See a prescription for Hand of Ghost, AM. 9477.

M. šamKù-i-tu, unknown.

šamKù-i-tu: VM. (Pl. 42, K. 274, 15: K. 8764, 10, unpublished: Mat. 88, i, 84) gives:
šamKù-i-tu | ina šu-pu-u ša (v. šá) něri (v. pán mēn).

N. šamLAL, . . . -ku-la-lum.

šamLAL occurs in VM. with a variant [šamšaš] (?), or [p]šaš (?), or [ššaš] (?), or [m]šaš (?), i.e. -ku-la-lum (for which Ebeling, MAOG. x, 1937, 2, 27, suggests aškulatu). Pl. 10, 3–4: Meek, RA. 1920, S. 1701, i–iii, 6, 7: Pl. 44, i–ii, 13, 14: Mat. 88, 1, 41, 42:
šamLAL (v. . . . -ku-la-lum, as above) | ina kalā (yellow ochre) and also | ina IM-KAL-GUG (mercury) (v. (IM)-KAL matqu "sweet sublimate (?)")

It also occurs in vocabularies, twice in a right-hand column (Pl. 27, K. 4162, 4–5) above kasi šaŠ "rose", twice, and below [šamšaš] baltisadī šadī (Ecballium) twice.

It occurs thus in MT.:

Always simply, and usually in a salve with cedar-blood, oil of cedar, or oil. Noticeable is one prescription particularly (preceding one "when

¹ Heliotrope, the flower which "presents the face", in sympathetic friendliness; hellebore against hostile influences; magnetic iron ore, used for its attractive powers (DACG. 85), and the various sweet oils to give a pleasant presence.
sickness comes forth on a man's body"), a salve containing šamšu and šamšašuš together with others in cedar-blood, which shows that šamšušuš provides a specially characteristic product (perhaps a dye?), besides that one which is merely defined by its simple name (AM. 52, 3, 9).

It is used frequently in a salve (always with others) against the Hand of a Ghost or sorcery; AM. 93, 1, 2, dup. of KAR. 56, 5 (in cedar-blood), 7 (in oil): [95, 2, 8], dup. of KAR. 184, 19 (in oil): 96, 4, 6 (in cedar-oil): 97, 4, 15 (in oil): KAR. 182, r. 5: probably salve, AM. 87, 5, 15. Most of these ingredients appear to be evil-smelling drugs.

Fumigate, against "poison", †, AM. 91, 1, 9.

[Drink] in beer, with šamguršu šamnu šamnu (the "red drug", with a value Asa farida, p. 353), Kū. iii, iv, 14.

šamšušuš occurs also in Boissier, Rev. Sém., 1894 (K. 249), 137. Tiglath-pileser III, brought it back as tribute from Merodach-baladan of the Sea-country (i.e. the tidal Khor) with šamšu
MISCELLANEOUS UNCERTAIN PLANTS

Pl. 31, K. 8846 + Rm. 316, 24 ff. (restored from VAT. 9000):

\[
\begin{align*}
\text{sam}\text{MAŠ} & \quad \text{MAŠ (?)} \\
\text{sam}\text{MAŠ} & \quad \text{MAŠ (?)} \\
\text{sam}\text{ka-na} & \quad \ldots \ldots \ldots \ldots \ldots \ldots \ldots \\
\text{sam}\text{sa-da ū-ri} & \quad \ldots \ldots \ldots \ldots \ldots \ldots \ldots \\
\text{sam}\text{sa-gal-lu iṣṣuri} & \quad \ldots \ldots \ldots \ldots \ldots \ldots \ldots \\
\text{VAT. 9000}:
\end{align*}
\]

<table>
<thead>
<tr>
<th>\text{sam}\text{MAŠ}</th>
<th>\text{MAŠ (?)}</th>
<th>\text{sam}</th>
<th>\ldots</th>
<th>\text{sam}\text{GIR (?)}</th>
<th>\text{rabū(u)}</th>
<th>\text{sam}\text{sa-[da ū-ri ?]}</th>
<th>\ldots</th>
<th>\text{sam}\text{SU-NIGIN-NU}</th>
<th>\ldots</th>
<th>\text{sam}\text{gir₁-ba-nu}</th>
<th>ina Šu-ba-ri</th>
</tr>
</thead>
</table>

[This article was unfinished: rough notes by the Author reveal that he intended to propose as the signification of these words “esparto-grass, or similar”. He interprets sagallu iṣṣuri as “bird-net”, and quotes two Syrian words sädā, fibra radicis, to be compared with șada (ū-ri), and ms’, spartum, to be compared with MAŠ-MAŠ.]

Q. \text{sam}\text{MAŠ-TAB-BA}.

It occurs thus in \text{MT.}:

Always simply: always ext. or as pessary: Eyes, †, apply, AM. 8, 1, 17, practically dup. of Scheil, RA. 1921, 6, 4: AM. 19, 6, 5, 7, 10. Ears, †, insert, KAR. 202, iv, 18. Blains (šiggati), †, bind on, AM. 32, 5, 5. Bruise (dăk[ši]), †, lotion, AM. 97, 5, 4. Ašū (pain) seizing the patient, with heliotrope and sumach, anoint in oil, AM. 55, 8, 5, dup. 16, 4, 14: cf. 37, 3, 4.

Pessary and suppository: Childbirth, †, for uterus, KAR. 195, 10. Anus-trouble, †, insert, KAR. 201, 11.

It would appear to be a plant with anodyne properties, perhaps poisonous. Its meaning “Twin” does not suggest anything.

R. \text{sam}Š(m)guštu(ŠAR).

The variant prescription KAR. 203, iv, 61:

\[
\text{sam} \text{šim-gu-ūš-ti arqu} \quad \text{sam diito (= amurriqånu)} \quad \ldots
\]

and one of my new texts from Nineveh:

\[
\text{samši-gu-ūš-su arqu} \quad \text{sam a-mur-ti-qā-ni} \quad \text{RAT ina karani ṣāḥṭi NAK show how the word is to be read. In V M. there are two instances:}
\]

(a) Pl. 42, K. 274 + 4163, iii–iv, 2, dup. Mat. 88, i, 71

\[
\text{sam} \quad \text{(r)šim-gu-ūš-te (v. ti) (ŠAR) ina ku-ru-su šá mēp³,}
\]

and
(b) Pl. 10, r. 17, dup., Pl. 40, K. 14051, 2: and Mat. iv. ii, 38

\[
\text{čšim-gu-ūš-ti} \quad \text{ina . . . šú (?) alpi.}
\]

The former (a) of these suggests a connection with something of skin as part of a waterlift, the latter (b) possibly something in connection with an ox-skin. The word, however, is not in sufficiently common use to show definitely that it is one of the ordinary tanning materials for leather: the usual way to make skin-bottles impervious is to smear them with grease (Bruce, Travels iv, 334, quoted Smith, DB. i, 223), or pitch
Chardin, *Voyages* iv, 75, quoted *ib.*) or, in the case of kelek-skins, pomegranate (see p. 316), or for tanning in general, acacia bark (*DB. ib.*).

If there were any question about the reading of *šīm* as a determinative (where *riq* is usually read, and not *šīm*), so that the word were merely *guštu*, we might see in it the Syr. *quštā*, the Skr. *kuśta*, Costus. *FJ.* i, 391, gives *Aucklandia Costus* Falconer as the equivalent, but *cf. CPI. 980, Sauussurea Lappa* C. B. Clarke. The use for *amurriqanu* "jaundice", however, is hardly coincident with *Costus*, and the variant on the Nin. text, *šamšī-qu-uš-tu* is definite. Moreover, there is no Sumerian equivalent marked by *riq*.

S. *šamŠubdanu*, unknown.

It occurs in the following passages:

*šamŠu-uk-da-na* (v. *šamšuk-da-nu*), *KAR*. 203, r. iii, 56, Nin. 122634, for *TAB-UD-DA*, bray, anoint in oil.

T. *šamTerinu, šamgišgirru.*

*Pl. 41, K. 8829, 9–11:*

| *šamte-ri-nu* | *šamgiš — GURUN* | *šamna-ri-nu* |
| *šam[giš-gir-ri]* | *giš-[gir-ri]* | *šam* |

The position of this group in its order in the series suggests that it may be closely allied or similar to the *Ricinus*-group. Indeed, this *Ricinus*-group (i.e. *šamsagbeqalzu*) on 108860 (CT. xxxvii, ii, 29) actually contains either [*šam*]e-ri-nu or [*šam*]a-ri-nu:

| *šamšá*-ga-be-gal-zu ut-liš | *šam (t)je (?) (or na (?))-ri-nu* |
| *šamšá*-ga-be-gal-zu ut-liš |

*VAT*. 9000:

| *šamte — ri — nu* | *šamgiš — gir — ri* |
| *šamGIŠ — GURUN* | *šam* |

The possibility that this is another synonym for *Ricinus* is borne out by *šamgiš—GURUN* "wood + fruit", and *gišgirri*, perhaps a composite loan-word, *giš* "wood" and *GIR* "dagger", *i.e.* a spiked wood which perhaps represents the husked seed-capsules of the *Ricinus*, "a large three-celled nut, covered with tough spines" (*VK*. 542).

On the other hand, there is a possibility that in *šamterinu* we might see the Syr. *sam t'rēn*, some form of Dragon's Blood, prob. Cinnabari (*Dracēna cinnabari*) from Socotra, with a synonym *sam saipā* "sword drug", which may coincide with *gišgirri*; but here again there is some doubt, as *FJ.* i, 368, quotes a description of *Sideritis achilleios* in Syriac

1 "Ricinus in the common speech"...
as "a herb which is like sam tərən". Kinnabari is mentioned by Dioscorides as a costly pigment and medicine from Africa. The author of the Periplus (c. 60 A.D., Schoff, Periplus, 15 and 137) speaks of it as coming from the Island of Dioscorides (i.e. Socotra) (Schoff, ib. 34: FHP. 675). Wellsted noted the two varieties of Dracaena in Arabia (Travels, quoted Schoff, ib. 137).

If, on the other hand, it were Ricinus, we might connect terinu and narinu with the root arū "shoot, vomit, defaecate" (on the analogy of terdennu from redū: tartahāmu from ratāhu (?) with e = w, as in ēdu "one", Arab. waḥad. Narinu, possibly for navrinu (an initial n formation, on the ground that w = m), parallel to the difficult form namaddu = nauaddu, taken by Jensen to be cognate to the Arab. wadd (Kosmologie 444).

[\text{sam}]Gīš-gir-[ru] is one of the drugs for asī (pain or appetite), Pl. 29, K. 4566, 14: \text{sam}š (so Boissier) -gir-ru is a drug against sorcery, †, Boissier, RS. 1894, 138, ii, 12. At the same time the connection with \text{sam}sagabegalu should be closer, if we are to see Ricinus in it.

U. \text{sam}Zāṭānu ("itch (?)-plant").

This occurs in the previous list (p. 235, l. (f)) as "a drug for swollen feet". It is given the cryptic title of [ṣ]er (or [dā]mi) širi ṣalmī "[f]lesh (or [bl]ood) of a black snake", CT. xxxvii, 108859, i, 14: \text{sam} . . . -mȧ-l, i.e. "a drug for -maḥi'", bray alone and anoint in oil, \text{KAR}. 203, i, 45: ib., r., iv, 24, "a drug that sickness not . . ." In \text{MT}. 3 ga of \text{sam}sada[nu], † (?), in milk knead, shave the patient's head and bind on (head trouble), \text{AM}. 41, 3, 5 + \text{CT.} xxiii, 27, 17. \text{ADD}. 1042 (re-exd.), includes it among PA of pomegranate, of \#A-AM (citron (?)), of mulberry, of GI-BU, and along with the plant-drugs manna, Arnoglosson, \text{sam}alamu, \text{sam}DIL-BAT, \text{Asa} fotida, roses, cedar, cypress, juniper, Acorus calamus, myrrh, and pine-turpentine, doubtless an apothecary's list (cf. Pl. 35, K. 4180, A, 49). The fruit is used, †, to insert in the uterus of a woman who has been given noxious drugs to eat, and there is too much fluid in her womb (\text{KAR}. 194, r. 31).

A possible cognate is the Syr. zaṭi, scabies, but there are so many variations (sadānu, zadanu, sāṭānu) that it is extremely doubtful.
XIV

TREES AND FRUITS.
TREES AND FRUITS

A. 1. *Lammu*, with a wide range of meaning; exact medical meaning uncertain perhaps *Quercus coccifera* L. **LAM** = “acorn”.

2. **LAM-MAR** allanu, oak: esp. pessary, suppository.

3. **Belut**, *Belut*, *Quercus infectoria* L.

4. **Allankanis**, *Quercus coccifera* L.

5. **Sindu**, a species of oak for building.


7. **LAM-HAL**, lubanu, Pistachio, P. vera L.:

8. **LAM-DU**, tur (v. tur)-a-zu, perhaps *Pistacia vera*.


10. **Lam-Sisbanu**, *Vitex negundo* L., or *V. Agnuscastus* L., “Chaste tree.”

1. Here should be included the following list of trees:

   Pl. 40, 82-5-22, 576, r. 1, 2: VAT. 9000: Pl. 31, K. 8846, r. 17-26:
   Pl. 32, Rm. 364, r. 1-4: Pl. 34, S. 786 (cf. Meissner, *MVAG*. 1904, 3, 31):

   \[\begin{array}{ll}
   \text{iLam-gal} & \text{le}1-
   \text{i}-\text{ru} \\
   \text{iLam-nu} & \text{du}-\text{bu} \\
   \text{iLam-SE-Na} & \text{si}-\text{lu}-\text{ur}-\text{tu} \\
   \text{iLam-KIB} & \text{ha}-\text{a}-\text{h}-\text{bu} \\
   \text{iLam-ur} & \text{mu}-\text{u}-\text{ku} \\
   \text{iLam-su-kun} & \text{me}-\text{suk-ka}-\text{nu} \\
   \text{iLam-lu-bu} & \text{si}-\text{iq}-\text{du}-\text{mat}-\text{qu} \\
   \text{iLam} & \text{du}-\text{u}-\text{ku} \\
   \text{iLam-gal} & \text{nu}-\text{u}-\text{ku} \\
   \text{iLam-gal} & \text{su}-\text{lu}-\text{nu} \\
   \text{iLam-gal} & \text{ka}-\text{lu}-\text{bu}-\text{u} \\
   \end{array}\]


3 82-5-22, 576, mi.
2 82-5-22, 576, actually has for the iLam-burutu-group an addition (restored from Mat. 88, iii, 72 ff.) —

\[\begin{array}{ll}
\text{iLam-ka}-\text{al-lu}-\text{bu} & \text{iLam-nu-a-ru} \\
\text{iLam-SE-Na} & \text{lu}-\text{ru} \\
\text{iLam-ja} & \text{lihittu} \\
\end{array}\]

(and then iLam-ba-ab-bu follows).

**Mat.** for l. 4 has erroneously iLam-ka-air-bu, which must be corrected iLam-ka-al-lu-bu with K. 8846, r. 20, and for 11, 5-6 has i... for si-lu-ur-tu. It adds a line below iLam-ka... , i.e. iLam = iLam-Muṣ-r-i-tu ("Egyptian").

4 K. 8846, ur.
5 K. 8846, S. 786, Rm. 364, and 82-5-22, 576, put this after iLam-nu-u-bu.
6 K. 8846 and 82-5-22, 576, omit this line.
7 K. 8846, 82-5-22, 576, 8u-ug.
8 Here K. 8846 and 82-5-22, 576, continue with another group.
9 From VAT. 9000. It must surely be read eri.
10 For this and the next line see p. 344.

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1. *samLammu, *samdulbu. Sumerian apparently has no simple Lam-tree, but Assyrian affords what is presumably an equivalent in *sam*lam-mu, which has the three 1 equivalences *samdulbu "plane" (p. 247), *i~Lam-ma (= *asul'us) " fir" (p. 289; CT. xviii, 3, vii-vii, 20), and *i~lam (Meissner, MVAG. 1913, 2, 20, 24) (the latter having also the values *mesu, *sulmu, and *sulam nēšī). Obviously *i~Lammu may include a wide range of meaning, although, since it occurs in 1111', it must have a definite medical significance: e.g. for an affection of flesh and limbs, †, drink its PA (tops) in wine, AM. 69, 1, 18. *Lam-mu is mentioned in a ritual (Ebeling, ZA. 1915-16, 277; KAR. 33); it is to be cut down (batdqu) in the garden, and in ll. 7, 8, *Lam-mu "from the garden" varies with *Lam-mu in l. 10 and r., l. 2.


Taking these in turn with the sign Lam as a base:

2. *i~LAM-MAR, allanu (long accepted as the equivalent of the Heb. allon "oak") is a drug in MT., used thus:

(1) Simply: ext. Uncertain affection, prob. stomach, †, anoint *allanna in oil, AM. 94, 2, ii, 12. Uncertain, AM. 51, 12, 2 (*sam*AL-LA-AN occurs, †, for strangury, AM. 59, 1, 40).

(2) *BAR (bark) of i~AL-LA-AN, bray, apply alone to uterus in wool, KAR. 194, iv, 18 (parallel, ib., to [skin] of pomegranate as styptic).

(3) PA (tops); for bile, with *sam marti ("drug for gall") drink in beer, Kū. iii, i, 23.

The habitat of the *allanu was *samBi-ih-bu, iiR. 51, a-b, 9, and perhaps *samSe-se-ik, ib. c-d, 8.

Oak-bark is used in modern medicine, P. 979 giving it as "not official", but describing it as a local astringent, used for relaxed throat, leucorrhœa, gonorrhœa, etc. LPG. 134 ff. says that it has been administered equally successfully int. and ext. (constitutional leucorrhœa, diarrhoea, and dysentery) and by injections in the uterus for uterine hæmorrhage.

Apart from its use as a drug, we find further evidence for the meaning "oak" in the following:

*i~Alanu is the actual word for a pessary or suppository, not only in its Semitic form, but even in the Sumerian *i~LAM-MAR (as Ebeling saw, E. xiii, 35), e.g. for anus-trouble bray various drugs in oil, make an al-la-na (v. ŠAL + U-mu), sprinkle with cypress oil, put into the fundament, AM. 43, 1, 4, dup. KAR. 157, r. 33. In this sense *allanu occurs AM. 5, 7: 43, 1, 10: 18, ii, 6: 50, 6: 53, 9, 7; 53, 11, 7: 57, 5.

1 Langdon's Kish text gives *LAM-GAL for all three.
2 Gell, Inscri. from Alishar, 25, has a form a-lu-nu, which he would make "rue", challenging the possibility of "oak" as well as the reading allanantiš.
3 So also Mat. 1, iii, 1.
It may usually be recognized by the word ḫū-uṣ (teppus) which follows it (e.g. ʾlām-mār ḫū-uṣ (thou shalt make a suppository), in this case sprinkled with juniper-oil, and inserted in the fundament, KAR. 203, vii, 10. The ideogram šal + u(-nu) obviously represents a picture of the vagina with a (cuneiform) wedge, i.e. the pessary. An “infant’s suppository”, allan šerri, is mentioned, BRP. iv, 37, 19: JRAS. 1924, 456.

Here we obviously have another indication of the “oak”; in the acorn-shape of the pessary (cf. the Greek βάλανος “acorn”, with a similar value as a pessary): suppositories “are cast into moulds of a conical or pastille shape”, DM. ii, 1561). In consequence, it is proper to compare the early form of the sign for lam, as given in REC. no. 130, which appears to be a cone lying on its side with the apex to the left, and having two small tags projecting, which doubtless represent the small projection at the top of the acorn. We may note, also, the Syriac ballūt “oak”, which has also the meaning of a vase in the shape of an acorn (with which cf. karpalūm, D. 435, 4).

With the value “oak” as certain, we can discuss the name of the fifth month, allānātē, in the Old Assyrian Calendar (Landsberger, D. Kult. Kal. d. Bab. und Ass. 88 ff.: S. Smith, Early Hist. 115). Here, Smith would make the tree terebinth (I think, incorrectly), and Landsberger translates “Hirtenmonat”. With our value “oak”, however, the word (as a feminine plural) would at first suggest “acorns”, and that the month was that of the acorn-harvest, that is, of the edible acorn which is commonly eaten in Mesopotamia. The month, however, is given as equal to Ab, i.e. July–August, which is too early for the ripening of the acorn; the acorns of the Quercus Cerris, the Turkey oak (obviously the proper species to compare) do not ripen until the first autumn (EB. xith ed., s.v. “Oak”), and we must, therefore, see some other product of the oak represented by allānātē. Yet still less can it be the kermes-scarlet, which reaches its last state in the middle or towards the end of May (Loudon, Arboretum 1913). I think it can refer only to the harvesting of the oak-manna which exactly fits this period (see p. 272). Allānātē, therefore, cannot here be the actual fruit of the oak, the acorn.

3. ʾbelūt, ʾbelit, Quercus infectoria L.¹ The district round Harran in Sargon’s time was, as it is now, the great centre for the oak which the Arabs call ballūt, from which are obtained the gall-apples. According to FJ.² i, 626, the ballūt includes, among other species, Q. Aēgilops L. (the Valonia oak), Q. Ballota L., Q. Cerris L., and Q. coccifera L.² Domesday 29 contains the Assyrian records of the number of these ʾbelūt trees in the Harran district, one total being given as 49,300.

This large number of trees grown round Harran must have been for a particular purpose, surely the famous galls (rather than the acorns, or even the kermes-dye). The Mesopotamian galls are one of the outstanding exports from Basrah, more than £150,000 worth having been exported to the United Kingdom in 1912 (Consular Report for Basra, 1914), and

¹ [W. F. Albright in BASOR. no. 94, p. 21, n. 56, denies this meaning and reverts to “vines”, without noticing AH. 123.]
² FP. ii, 519, says that the ballūt is the deciduous oak, and is the Q. sessiflora Salisb., while the Q. infectoria Oliv. is called abbas.
in 1861 790 tons were imported from Turkey (VK. 430). Chesney (Exped. i, 107) says that Al-Jezirah (N. Mesopotamia) produces gall-nuts and yellow berries (doubtless of the sumach) from the mountains northward, and Olivier (Voyage iv, 273) that Mosul was an entrepôt for gall-nuts in his time. We must, therefore, see in the Q. infectoria, the oak from which the galls come. It may be added that these galls, abnormal growths on the tree, are generally used for tannic acid, as they contain 50–60 per cent tannin, while oak bark produces the best leather known (EB. xith ed., xvi, 332–3).

It may be that the tablet found by Sir Leonard Woolley at Carchemish (and translated by me in his Carchemish ii, 135) relates to the gall and sumach trade in the neighbourhood of Carchemish. This text appears to be concerned with at least sixteen Syrians and their rights (perhaps in the Q. infectoria, for which, very tentatively, I suggested a comparison with the Syr. 'augâ, sumach, and in the Qapisana (?), possibly the Arabic 'afs (the oak which produces the gall-nut, and the gall-nut itself). Since a leather-worker, aškapu, is mentioned, we may perhaps be on the right track in this explanation. It is hardly necessary to mention how thriving the industry of leather-working has always been in N. Syria; e.g. Urfah produced "très beaux marroquins" in Olivier’s time (ib. 221), and Buckingham (Travels i, 380) mentions 300 manufacturers of leather there. When Sargon flayed Ilubidi of Hamath (no great distance away) and dyed his skin red, the local industry must have been in his mind.

To go further into the species of oaks in these districts, we can quote Layard (Nin. and Bab. 665), who gives details from Dr. E. Dickson of oaks from Kurdistan. His picture of the acorn of Q. infectoria (the gall-oak) makes the fruit very much longer than that of English acorns, and I myself suspect that this must be the edible species which is brought into Mosul, which I have frequently seen. Ainsworth (T. ii, 193) gives only the Q. Valonia as the source of the Amadiyah galls for the market, but he was told that the Q. infectoria, Q. pedunculata, and Q. cerris also furnished them. Q. infectoria would appear definitely the Q. infectoria, and we can turn back to Q. allanu. The two are clearly distinct species from ADD. 444, 5 and 6 (a contract relating to an estate in medium Singara, Sinjar, W. of Assyria), on which both are mentioned. The Sumerian equivalent Q. allanu (resolved into its component means "acorn-tree" + tuttu "worm"), means "oak of the worm" which suggests that the correct meaning for the allanu is the kermes oak, the Q. coccifera. This was the meaning given to the Heb. alleyon by Post, FP. ii, 521.

Q. allanu is used in MT. thus:

Int.: Strangury, alone, brayed, drunk in kurumnu-beer, KAR. 203, i, 27 (prob. dup. Pl. 27, K. 4430, 6, and Pl. 35, K. 4180, A, 23), like caper (the še. ru of it), heliotrope, yellow saffron, garlic, and thyme (KAR. ib. 24–9). Difficult childbirth, apparently chewed alone and drunk without

1 Gelb would read Q. allankaman (see p. 248).

The first part of the word is obviously "*allanu* "oak": I had at first sought a parallel for the second half in such words as the Arab. *sah balltah*, the Syr. *ballutai malta* ("royal oak"), the chestnut. The chestnut occurs in Mesopotamia, *FJ.* i, 613 (but not on the flats of Assyria or Babylonia): it is properly a native of Asia Minor (*FP.* ii, 524), *Castanea sativa* Mill. being reported from the Lebanon, and Antilebanon (but note Hehn, *Kult.* *viich* ed., 386: "mit Sicherheit findet sich die europäische Form der Castanea vesca...im westlichen Transkaukasien...im südlichen Kleinasien scheint sie nicht einheimisch zu sein"). The modern word for it in the Near East is usually some form of *Castanea*; *Hoefer* (Chaldée 181) gives the Mesop. Arab. as *abu faruwa*.

But a better parallel for *kani(s)* is the Hittite *kanaš"dye"* (*Weidner Stud. z. Hett. Sprach.* 118). The variations in the terminations *kani* and *kaniš* at once suggest the nominative of a Hittite word, and hence, if we may connect the tree "*allankaniš* with the words *allanu* "oak" + Hittite *kanaš"dye"*, it must be the oak from which the kermes dye is obtained, the *Q. coccifera* L. (*FJ.* i, 630): *Q. tinctoria* Alph. D.C. or *Q. coccinea* Wangenh. are impossible, being indigenous to N. America. I think that we may regard the termination of the Armen. *kaskeni* as out of the question, since the other Armen. form is *kask*.

The use of "*allankaniš* in *MT.* is paralleled in more modern times: "In the pharmacopoeia of the ancients kermes triturated with vinegar was used as an outward application, especially in wounds of the nerves. From the 9th to the 16th century this insect formed an ingredient in the ‘confectio alkermes’, a well-known medicine, at one time official in the London pharmacopoeia, as an astringent...Syrup of kermes was also prepared ’"(*EB.* xiith ed., xv, 756). *IB.* 1756 says that if a woman takes it for seven days in honey her menstruation is deferred: in vinegar, she loses the capacity of conceiving. If it is threaded on silk, and worn, it cures fevers. *Pomet* (*HD.* 19) coincides still better: the syrup from the pulp of the kermes-oak is used to comfort women in childbed.

Incidentally, whether there can be any possibility of the Hittite *kanaš* and the Arab. *girmīs* (kermes) being the same word is difficult to say. The variation of *n* and *m* in Semitic is well known (e.g. cf. (Arab.) *kurma"vine"* with (Assyr.) *karasu*, and (Arab.) *butim* with (Assyr.) *butnu*). Moreover, *r* is curious in Hittite hieroglyphs, wherein it appears to be conceived as a letter of smaller value than the rest, since it can be added to a sign by the mere appendage of a "tang" (as is noted in Hrozny, *Les Insér. Hitt.* i, 101). *E.g.* in the word Gurgum, the Hittite signs for which I read *Gu-gu’m* (*Arch.* 1912–13, 30 ff.) the first sign was afterwards shown by others to be read *Gur*, owing to the "tang" (= *r*) which was attached (see Hrozny *ib.*). Indeed, to go further afield to modern savages, the *r*-sound among the Hadendowas of the E. Sudan is peculiar. I heard, for instance (*Man.*, 1910, 180 ff.), *embar'isi bersim* for "sword-hilt guard", while Almqvist, *Die Bischari-Sprache* 44, quotes Munzinger as hearing *o'embadat* for "sword": I heard *e-moa'tađan* for "war", for which Almqvist quotes Munzinger as giving *ómotta* "sich streiten".
Other examples collected in Almqvist’s book are: “four,” *fadyg* (Burckhardt), *fardek* (Krookow), and *ferdek* (Lucas): “six,” *asagur* (Almqvist), *surger* (Lucas): “eight,” *dimeh* (Almqvist), *sarmai* (Lucas). Cf. also Hrozny l.c. on the same phenomenon. Indeed, in ancient languages we find (see Arch., l.c.) Sêdûri for the name of the later Sarduri, *Oosoria* for Šurûspâ, Darmsâq for Dameseq, *Iâyâmâlpa*, prob. the modern Karamis, and even the Arab. *kawš*, the Assy. *kussû*.

Is it possible to consider *tultu sâmtu* “red worm” as the kermes insect? I merely offer the following as a very tentative suggestion. In DACG. 11, I thought that the reading for CT. xiv, p. 10, vii–viii, 17, restored from Mat. 88, 3, 40, gives *samânu ša giš*. *zi* = *tultu sâmtu*. It is unchallenged that *giš*. *zi* = *igaru*, and also that *samânu ša igari* (*š. Garu*) is a drug, “scab of the house-wall,” i.e. *sal murale* (DACG., l.c.). Nevertheless, the *giš*. *zi* of Mat. 88, 3, 40, is badly mutilated, and we have no definite evidence that *samânu ša Garu* is actually *tultu sâmtu*; the *zi* might not unreasonably be a badly-written *gi* in this text, judging from the difficulty which Matous’ text has given, and if so, we should have the equivalence *samânu ša Gis. gi* (= *abu* “thicket”) = *tultu sâmtu* (“red drug of the thicket” = “red worm”). Stress is always laid in MT. in writing out *samânu ša igari* in full with *igari*, in contrast to one instance of *samânu* alone without *igari*, as a drug (*AM*. 7, 3, 3), so that it might be that there were two kinds of *samânu*, and that the “red worm” is definitely the kermes insect, perhaps equated, as we should expect, with “red drug of the thicket,” rather than with *sal murale*.

5, 6. *Sindá*. The *isi-in-da-a* makes its appearance about Sennacherib’s time (Luck. 106, 28: 110, 37: 123, 35) for doors and pillars. It is the Arab. *sindiyan* (KL. Beitr. 78: AF. 33), a general word for “oak” (*FF*. i, 626), and it does not appear to have been used otherwise than for building (cf. HWB. 504). *LaLam. gal* = *buttutu*, *LaLam. Hal* = *lubanu*, and *LaLam. Du* = *tur* (v. tar)-a-zu, a somewhat confused group based on the sign *Lam* (“acorn”, obviously also with the meaning “pistachio”).

From Pl. 40, etc. (p. 247), *samlubanu* = *sambutnu* *sihrûti* = *samgiqdu matqu*. Doubtless *samlubanu*, from its connection with *sambutnu*, is the same word as *upanu*, another equivalent for *LaLam. Hal* (D. 435, 5). We can omit for the moment the value *samgiqdu matqu* (“sweet almond”), and confine ourselves to *sambutnu* *sihrûti* (“small butnu”) as equivalent to *samlubanu*. *Butnu* has long been identified with the Heb. *botnim* (see AF. 54), sometimes translated “pistachio”, *Pistacia vera* L., the Arab. *fustuk baladi* (*FP*. i, 286: *FJ*. i. 198) which I heard as *fusukul al-‘abid* in Baghdad. *FJ*. i, 192, however, believes the Heb. *botnim* to be the fruit of *P. Terebinthus*, which is eaten in Mesopotamia (cf. *ib*. 193, 199) where it is called *butn*.

Here, therefore, we have to consider whether *butnu* *sihrûti* “the small pistachio”, is the fruit of *P. vera* L., a delicacy of the markets in the Near East (egg-shaped and 1–2 cm. long, MPB. ii, 709: “about the size of an olive,” *VK*. 387, hardly true of the Mesopotamian pistachio, which is half that size), as distinct from *butnu* (without *sihrûti*) which may represent the *P. Terebinthus*. This is borne out by the equivalence *LaLam. Gal* “the great pistachio” = *bututtu* (D. 435, 16, identified by Hrozny, Getr. 70, with pistachio), i.e. the fem. form of *butnu* (not to be
confused with *bututtu,* a corn), which is the equivalent either of the Syr. *betmthâ,* which is *terebînôth* (*P. palæstina,* or of *butnâ,* the pistachio fruit (Brock. s.v.). While I myself have heard the Arab. *butm* used in Mosul for the fruit of *P. khinjuk,* Stocks (identified for me by Dr. A. B. Rendle), F.J. ii, 194, gives the former (*betmthâ*) as the proper equivalent of the Heb. *elâ,* *allâ,* *allôn,* and *bofnîm.* This equivalence of *bututtu* with *P. terebinthus,* not only thus maintained by F.J., is confirmed by the line in the *Lamaštu*-text (iv R. 2, 56, iii, 37), i-mid *æl-lanu u ïbut-ut-nu ša šadê(e) ha-ma-di ru ...* where *šallanu,* the oak, is placed in juxtaposition with *šbutnu* of the mountains.

The *šlamgal* came from *šadDAU* (or -rnas) (ii R. 51, 1–2, 8: see Ebeling, Realex. ii, 164).

With this distinction probable, we can consider the use of *šlamgal* in *MT,* once (as *lamgal* apparently for lungs, ext., with ground linseed (?) and *lepidium* (*AM.* 72, 12, 11, cf. RA. 1934, 26) and once as *šlamgal* ("... ša šlamgal, ḫāšhuṟu ṭupašā(a), i.e. ... of šlamgal, apple, thou shalt dry") apparently, but not certainly, as a poultice, for looseness of the bowels, *AM.* 95, 3, 11 (RA. 1929, 74).

*P. Terebinthus* attains a much greater height than *P. vera* and from it is obtained the Cyprus or Chian turpentine by wounding the bark. Oil of turpentine is a powerful stimulant into and ext. (purgative, diuretic, etc.), and ext. is used for rheumatism and local pains (*VK.* 563). Hippocrates employed the fruits, buds, and resin *pereira* (*PMM.* ii, ii, 37). The *P. vera* grows from 25 to 30 feet high and is a native of Asia Minor, being particularly abundant in Syria (and grows wild there, F.J. i, 198), and the wood is hard, resinous, excellent for fuel, and proper for economic purposes (*VK.* 388).

The probability is, therefore, that the *šlamgal,* the great *lam,* *bututtu,* is the *P. Terebinthus* with *butnu* as a synonym, while *butnu šïruttü* is the proper expression for the fruit of *P. vera,* synonymous with *lupanu* or *lubanu.* The *šlamgal* occurs as far back as the Agade period (De Genouillac, *ITT.* ii, 2, 4658).

With *lupanu,* *lubanu* as the fruit of *P. vera,* it would seem obvious that this word is a derivative of the *šulupu* (*ulubu*) mentioned in the district of Harran (150 *šarbutu šulupu*) in Domesday 3, i, 9. ii R. 51, a–b, 8 (Meissner, *MVAG.* 1910, 5) gives *šad*[šarru]-gi-na as the habitat of *lupani*.

We have also to consider the other value for *šlamhal,* *šamsiqdu* *matqu* "sweet almond," but before doing so we can, I think, definitely say that the Sumerian shows that properly *P. vera* was the original meaning. The sign *hal,* with its equivalent in Semitic, *zâzu* "to divide," indicates that in *šlamhal* we have "the pistachio (acorn) which divides," which all who have seen the pistachio nut ("a brittle two-valved shell"), *PC.* xviii, 1840, 187) will readily recognize: the shell can easily be split in two with a knife inserted between the valves. It is merely another indication of the usual confusion which occurs in certain Semitic words.

On Pl. 40, etc. *šamsiqdu = šamsiqdu,* and *šamsiqitu = šamnushu.* The former are the Assyr. cognate for the Heb. *šaqeth* "almond." (Meissner, 56).
MVAG. 1904, 4, 31), while šiqittu will be the feminine. Nušhu must be, as I suggested in AH. 182, the same as the Arab. lauw "almond", the n varying with l, as is not uncommon, and the šh representing z as in Syr. ḥazzīrād = Assy. ḥashāru. Indeed, FJ. iii, 153, gives the Arab. lūz as the actual equivalent of the Heb. šagēḥ.

From this we can continue with širdu. PA ši-iq-di occurs alongside PA ši-ir-di in AM. 68, 1, 18, and PA šir-du occurs ū. 6. Širdu will be the Syr. šār'dhā, the bitter almond. It occurs as far back2 as Sargon I's expedition to Asia Minor (ši-iq-di, Weidner, Boghaz K. Stud. 6, 1922, 68). Sennacherib (King, CT. xxvi, 30, viii, 51–2) planted karanu ḫīmīr inbi ši-iq-di ṭāqēš-a damūš išmuḫu in the royal domain (cf. also ūb. 29, viii, 21, ṭāqēš-a u ši-iq-di ana ba'āli azqup) and note also his šaman ši-iq-di u ḫibištā ša šīr'atū “almond oil and the products of the gardens” (ūb. 30, viii, 71–2). Ši-iq-di occurs ADD. 693, r. 4: various pots of širdi, with andāḫšē, quince, etc. (see ADD., glossary, 328) and 4 duq of PA šir-di-e, ūb. no. 1002, 3.

In MT. we find širdu used thus:

(1) PA (tops): for feet, AM. 68, 1, 6, 18: (2) Oil: for head, apply with boiled plaster, AM. 2, 1, r. 10 + CT. xxiii, 25, 32. For ghost, anoint, AM. 33, 3, 7, dup. 96, 4 11. Prob. ext., for pregnant woman, KAR. 223, r. 10, Ext., KAR. 198, 11.

The Ashur texts allow us to date the use of širdu as certainly early in the first millennium B.C., and the historical texts to Sargon II's time.

The bitter almond is a variety of Amygdalus communis L. (i.e. amara D.e.): the almond grows westward from Persia through Syria to Algeria (MPB. i, 852): Olivier, for instance, mentions the almond a few days N.W. of Anah on the Euphrates.

In medicine the sweet almond is used in the preparation of confection, emulsion, and oil; the bitter almond is prescribed for pulmonary affections, gastroduodenal, whooping cough, and tapeworm, and the water for painful menstruation. Ext. the emulsion has been used as a wash to relieve irritation (PMM. ii, ii, 247 ff.). P. 150 says that almond oil is emollient, demulcent, and laxative.

A form (š)lu-ba-nat occurs in various Elamite documents (Scheil, RA. 1925, 152) as incense (5 mana, 1 mana, and 50 shekels, and 10 mana) along with mu-ir-ri-[um], myrrh (cf. MMAP. ix, nos. 49, 158, and 186). It parallels the Heb. līḇhōnāh (“the white”) “frankincense” (the Arabic luban), but, having regard to its late use, I am inclined to doubt its connection with the word for pistachio.

8. šLM-DU, ṭur-a-zu, lar-a-zu, properly the “small pistachio”. If so, then we must equate it also with butnu šīhrūtešt; otherwise it suggests the Syr. tar'ūzē “a Gurkenart”, Hoffmann, Opuscula

1. As in ĥardu = nād. Ḥokkalbat = Ḥokkalbat (Weidner, Bogh. Stud. vi, 77). Are we to see in š̄amnuš “almond” the origin of nuš as a borrowed eastern word?

2. Cf. the simile in describing the carving of a handle: ša se-ir-da i-ki-iz-ri i-na li:b-bi-šu-ru, T. A. i, 115 (from Amenopbi to Burna-Buriaš).

3. In the case of šLM-ḵAL, lubanu, it might be possible to see in ḫAL the value gārdū “to run”, comparing it with the use in ḫAL, galbanum, and thus suggesting Pistacia lentiscus, the mastic, for lubanu. But this seems unlikely; lubanat is not the same as lubanu, nor is the mastic an incense. There is no plant marked by this ideogram which seems likely to represent mastic, the gum of P. lentiscus and, unless we are to see the latter in one of the LAM-group, it would appear that mastic was not known to the Assyrians.
Nestoriana, reviewed by Nöldeke, ZDMG. 1881, 497 = Aram. ʿrāzā, Sabb. 109a.

LAM-DU₁₂-DU₁₃ occurs in the Epoch of Agade, De Genouillac, ITT. ii, 2, 4658.

šaMš-P1-P₁, a synonym for ḫašḫur ʿabi.
šaMš-MUR-DU-DU, murdūdū, perhaps the Cynips producing the oak-galls.

ḥašḫur ʿabi, probably oak-galls.

Pl. 38, S. 8, Cols. A-B, 12–15, gives:

| šaMš-MUR-DU-DU | mu-ur-du-du-u |
| šaMš-Pš-Pš-P₁ | ḫa-ta-ḫu-bu |
| šaMš tiMA + GUNU | ḫa-Ḫa-ra-ku |
| šaMš tiMA + GUNU-ṭṭGI | ḫa-Ḫa-ur a-bi |

and Pl. 32, S. 1328, 9–10, dup. Pl. 39, K. 10126, 2–3:

šaMš tiMA + GUNU-ṭṭGI

Possibly restore Pl. 21, K. 267, vi–v, 25:
šaMš-Pš-Pš-P₁ | šaMš ḫašḫur ʿa-b[i] |
šaMš ditto ina Šū-ba-r[i] |

Mat. 86, 7–9, 8–9 (p. 550):

šaMš GUR-GUB-BI-zi-DA | da-da-ru |
šaMš Pš — Pš — P₁ | ar-da-š-as |

Now, since ḫašḫuru is “apple”, ḫašḫur ʿabi would mean “apple of the (reed) thicket”, and for this I suggested “gall-apple” in ΔH. 122.

First, what exactly is ʿabi? Anp. (AKA. 262, 23) says that he cut down his enemies ḫima ʿa-bi “like the reed of the thicket”. Sennacherib cut down the a-pi ku-pi-e of Kaldi for the sake of their appari (Luck. 98, 72). It would thus certainly appear to be a cane-brake, and particularly the reed-beds of S. Babylonia (esp. cf. ISA. 18, h. 2, of Zur-Nanše).

On the other hand, ʿabi, although it is a special word for the reed-beds, might perhaps cover every form of copse of scrub or undergrowth. The Broken Obelisk (iv, 23, AKA. 141) speaks of “swine of the ʿabi”, and there is a well-known sculpture of Sennacherib which shows a wild sow and her litter passing through the reeds on the river bank at Nineveh (Layard, Mon. ii, 12). Yet I myself saw a wild swine near a watercourse at Zakho, a long way north of Nineveh, and I was also told of one in the hawiga-scrub near Mosul.

There is, however, another possible channel, and yet this too is uncertain, depending as it does on an emendation, which is a very risky course in any Assyrian tablet. It is that the equivalence in Mat. 88, 3, 40, samanu ša tiZI = tultu samtu might conceivably be read samanu ša tiGI, i.e. the kermes-worm of the oaks (see, for a discussion of this, p. 252).

Interesting is the decoration apparently of a couch: šēṭu nāḏbaṭā šešti naḏbanātā giPš abanuru-[Aš] ḫašḫur ʿabi aban KA aban GUG aban ZAGI ināšba[ni] (collated by Bauer, Inschriftenwerk. Asb. 50, on Streck, Asb. ii, 296, 20) “the
še’itu of the nalbanāte (brick-work building of some kind)... they surrounded with ‘eyes’ (beads, DACG. xi) of alabaster, ḫašḫur abi of red ochre, carnelian (or similar red stone), lapis (blue)”. It is by no means clear what the decoration was, but ḫašḫur abi “apple of the thicket” suggests small spherical knops.¹

A picture of these gall-apples of the oak, and of the fly producing them in Asia Minor, are given in Olivier’s Travels i, between 40–4, where he says that the galls fall every year at the end of the autumn, but that they are much more esteemed when they are gathered before maturity “towards the middle of Messidor”. They have no smell, but have a somewhat acidulous taste, BMP. 249. For a good description by a specialist see Ainsworth i, 193.

ii Ḫašḫur abi occurs in MT. thus:


Now, although there are not many prescriptions containing ii Ḫašḫur abi, what there are are very definitely indicative of a styptic (such as the tannin of the gall-apple), the use for the mouth, for stopping hæmorrhage, and as a stomachic are paralleled by the use of the tannic acid of the galls of the oak in India, where they are prescribed as astringent for menorrhagia, chronic diarrhoea, and dysentery, and locally as a gargle, and as an injection in leucorrhœa and atony of the vagina and rectum (BMM. 501), and in local application to the eye, gums, ulcers, and in toothache, and on sore nipples (Pharm. Ind. 211). P. 550 prescribes it to suppress hæmorrhage from the gums, etc. This goes far to prove the equivalence “gall-apple”.

Important, also, is the synonymous use “in common speech” of šam-marguşu rab[i] “great Artemisia” (p. 360), wormwood, the probable reference being to the bitterness of the two synonyms. Moreover, the Heb. tappūḵim, properly “apples”, has the particular meaning of “galis” “Man bringt aus Kurdistan tappūḵim, die Galläpfel heissen” (F.J.² i, 632, ink from them, vb. iii, 216). Compare also the various uses of the Syr. Ḫassûr “apple”. Our equivalence Ḫašḫuraku (= šam-tišma + gunu “drug of the apple”) must be compared to such words as šemammaku, annu(a)ku, and perhaps šašlakatu, šabukatu, as having the termination -aku.

The other synonyms for ii Ḫašḫur abi are:

(1) šaš-MUR-DU-DU (cf. šaš-MUL-DU-DU, Liebesz. 50, 7), with its Assyrianized form mur-dudā. It occurs in MT. as a drug for removing sorcery (note that it is used alongside ii Ḫašḫur abi), †, AM. 87, 5, r. 9.

¹ I think that we may relinquish the suggestion which I made in A.H. 122 of “knops” or “rough burs” of the burr reeds, Sparganium of Gerarde (41), as a glance at the picture of such “burs” will show.

² At the same time, I ought to point out that Meissner (MAOG. 1937, Stud. iii, 41) does not agree that Ḫašḫur abi is the gall-apple.
Head, with šamnušatu, † [apply], AM. 2, 1, 20. To remove an-ta-šub (prob. ext., but the directions are “wanting”; the parallel prescriptions give aš-su), KAR. 186, r. 24. šamMUR-DU-DU occurs, Boissier, RS. 1894, 141, ii, 15.

Since muḫušt “worm”, and duḫ-DU = nadu, šakānu, etc. (“put, place”) we may see here the Assyrian recognition of the Cynips causing the galls, although it is more than probable that the word refers to the larva rather than the winged insect which causes the gall (“when the insect (i.e. the larva) has left them, they are pierced from the interior to the surface”), in the case of oak-galls, V.K. 430. We have thus another piece of evidence for ḥaššur abi = “galls”.

(2) šamAŠ-PI-PI. PI-PI is not only a word used by itself as a plant, šamPI-PI = šimru (not “urru (?)”, as Deimel, 383, 48) “fennel”, but also in the plant šamUR-PI-PI, which may be a plantain.

šamAŠ-PI-PI is used thus in MT.:

Simply: ext.: Hand of Ghost, † (including šamAŠ), anoint locally, and then hang on neck, AM. 95, 2. 9. Hand of Ghost affecting eyes, anoint with blood of cedar, and then hang on neck, †, KAR. 182, r. 21.

Int.: Stomach, †, bray, drink in kurunnuz-beer or wine, AM. 87, 1, 11. Sorcery (?) †, drink in wine or beer, AM. 89, 1, 3. Lung-trouble, calling for a poultice on the chest, “bray šamAŠ-PI-PI daily, beat (it) up in refined oil, and let his tongue take (it), (and) let him drink it,” AM. 28, 8, 11 (for the complete text see RA. 1934, p. 2, where I see I have translated šamAŠ-PI-PI as Asa faetida). Apparently as aphrodisiac, † (“If a man goes to his wife and . . . to another woman goes”) AM. 66, 1, 6.

šamAŠ-PI-PI is clearly not a word in common use, and although there is little in the MT. use which prevents it from being a word for the galltannin, there is nothing definite. I doubt whether my suggestion for a form of Asa faetida (AH. 266) is as satisfactory.

(3) šamAštablēlu might suggest “dry šamAŠ” (making tabelu equal to tabilu), but doubtful. šamAštablēlu is used in a venereal (?) prescription, along with šamlišuš kalbi (Armoglosson), šamAŠ . . . mandrake, and three others (AM. 32, 1, 7). A longer form of the word, šamAštablēlu[nu] occurs, Pl. 46, Rm. ii, 203, 6, equivalent to šamlišuš kalbi, and obviously, since šamlišuš [kalbi] and šamAštablēlu occur together, different from this latter.

šam Arđašnum, as synonym for šamAŠ-PI-PI, is similarly in an aphrodisiac with cantharides, AM. 88, 3, 5, to be drunk. šamkur-ki (?) is also a synonym of šamAŠ-PI-PI, and šamGUR-GUR-BI-ZI-DA, šamdadaru is, by inference, another.

In this latter we might again see a drug with a noxious smell or taste (since dadaru = buš’ānu, v. R. 47, a, 53). Moreover, VAT. 9000 gives, as one of many equivalences for šambadaru the Sumerian šamRIM, which has the value “manna”. One is rather inclined to ask, is not šamRIM, from its very character indicating a globe or sphere, properly the spherical gall of the oak, which, by a transference of meaning, as one of the products of the oak, became one of the many synonyms for “manna” (p. 268)?

šamDadaru occurs in the V.M. (Pl. 42, K. 4140, B, 10: Pl. 44, K. 4152, i-ii, 34: Mat. 88, 1, 60, as šamda-di (!)-ru) the texts giving respectively šamdadaru | ina šir | . . . šamdadaru[ru] | šir | . . . šir, and šamdadaru | ina šir karani.
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B. 1. (tī)TIQLI, bursu, Pinus pinea L., pine (turpentine, resin).

2. (tī)TIQLI-PAR, sihu, sihu, Pinus Halepensis Mill.

1. (tī)TIQLI, bursu is the commonest drug in MT., long identified with the Heb. bōṣīh “pine” or “cypress”. Of these two meanings “pine” seems to be more probable; the Phoen. ai bōṣīm (= ai bōṣīm) “Isle of Pines”, Hārvavuca (Robertson Smith, Prophets, iv, n. 20). Pliny (NH. xii, 39) says that the bratu (= βραδυ, bōṣī̄) grew in the Zagros Mountains, that the wood was imported from Elam, and that it was like cypress, with a wood which emitted a pleasant smell when burned. We already have two Assyrian words for cypresses, Nuremēnu and Nīmu.

Shalmaneser (ninth cent. B.C.) obtained beams of bu-ra-ši, along with e-ri-mi (cedar) from the Amanus Mountains (Mon. ii, 9). Sargon mentions the “Mountains of buraši” at Mallau, in the neighbourhood of Van (HC. 29, 169); another locality for them was Hana, said to lie on the Middle Euphrates, but this is hardly likely as a habitat for pines (ii R. 51 a-b, 10). Yet the burašu was not the most popular tree for buildings, although it is true that Sargon II mentions its scent, HC. 35, 211: 41, 246; from the earliest times to the Fall of Babylon the ašiḫu (fir), and still more the cypress and cedar, are mentioned thus rather than the bursu.

On the other hand riḫurašu is common as incense, and we find 3 qa of it as far back as Rim-Sin (c. twentieth cent. B.C.) and 10 (qa) and 3 qa on a Larsa text (C. F. Jean, Bab. 1929-30, 179 and 176: (Contr. de Lasra, no. 71, r. 48 and o. 18).

The modern habitat of the pine agrees well with that given by the Assyrians, i.e. from the Amanus eastward to the mountains east of Baghdad and north of these. Pinus pinea L. is found in Asia Minor up to a height of 725 metres (MPB. ii, 114). Olivier (Travels i, 67) speaks of cypresses, pines and planes near Constantinople, and the Aleppo pine at Prinkipo (pin blanc, ib. 90) (for turpentines, see p. 259).

tīLI, bursu, is thus probably P. pinea L., the tree, but also tīLI is found used for both the tree and the drug which it provides, e.g. tīLI kakkul-bi pa-mul-bi suh-suh “pin dont le vase et la fleur brillante sont exaltés”, Dhorme, Sharpu ix, 51, RT. 1907, 126, 51. Again, the Assyrian song KAR. 158, r. iii, 16, begins šāt tīLI la tezini “O breeze, dost thou not smell of the breath of the pine?” which must surely be the tree itself.1

On the other hand, the meaning “turpentine” is obvious in the recipe for a sulphur-soap (p. 34), consisting of salicornia alkali, sulphur, and tīLI. Some liquid medium here is essential, and turpentine fits the case admirably, as a well-known solvent of sulphur. In MT. it is administered internally for urinary and kidney trouble, which coincides with the use of turpentine as a diuretic (see p. 259). Resin is never used internally, P. 1006.

Yet, further, tīLI is used in MT. also as resin, as is obvious from the way in which it is “brayed”, or “pounded”, or used in fumigations, or

1 “tīLI is especially associated with the god Adad (BR. no. 27, 1), perhaps through the fragrance being borne on the wind.”
incense, where turpentine would be impossible 1: “Dry pine resin, of which Common Frankincense is the type, evolves when heated an agreeable smell: hence in ancient times it was commonly used in English churches in place of the more costly olibanum” (FHP. 549). P. 10077 says that resin (“the residue from the crude Oleo-Resin of various species of Pinus, after the Oil of Turpentine has been removed by distillation”) when strongly heated, evolves heavy white vapour possessing an aromatic odour, and when ignited burns readily with a yellow flame, emitting a dense sooty smoke. Oil of turpentine, on the other hand, is impossible here: “the copious fumes of smoke render oil of turpentine an unpleasant article of combustion in private houses” (PC. xxv, 433). The use of all sweet-smelling incense is intended to render the atmosphere pleasant (as doubtless happened in houses of the well-to-do), just as evil-smelling fumes were used to drive away demons.

In Assyrian rituals riqlI is usually burnt alone on a niknakku (Thureau-Dangin, RA. 1920, 72, 9: BBR. no. 45, ii, 5: no. 46, 9: no. 48, 8: no. 49, vi, 5: no. 50, iii, 4: no. 53, 8: KAR. 184, 41), but at times three niknakki containing respectively riqburasu, ėrinu (cedar) and masẖāṭi (BBR. no. 1, 53), or even three containing riggeṭi-a (ib. no. 52, 11). Most important is it to note that, beside being used alone, it is actually burned in a niknakku with other substances, e.g. masẖāṭi is burned together with riqburasu (ib. no. 57, 9); 7 niknakki burn riqburasu and šem-KUR-KUR (hellebore) presumably together, as it is not specified which is to burn which (ib. no. 26, 17): in KAR. 72, r. 3, myrrh and riqburasu are used (but here there is some doubt, as they are set iva bābi ta-a-an). So also must the contract Camb. 126 be understood: “8 mana of rigge, 1 of ballukku, 18 qa of burasu for the censer of the Sun-god, Ā, and Bunene, the gods of Sippar” (the qa-measure for burasu distinct from the weight of the others indicating an auxiliary inflammatory substance, see p. 264).

The use of burasu in MT. is comparable to the modern prescriptions for turpentine and resin in medicine. In general the Assyrian doctor used it externally for eyes, ears, feet, breast, lungs, and anus, and for coughs and swellings, and internally for kidney-trouble, with black saltpetre and ostrich-egg shell (see AfO. 1937, xi, 396) which shows a knowledge of diuretics. riqLI has a particular oil used for ears and lungs, and the pleasant scent of this oil was used in “popularity” charms. The “powder”, which presumably is powdered resin, is used on bruises, in childbirth, and for weak hair. The “clear water” of riqlI (p. 261),3 to be sprinkled on the house-top before a ritual before Gula (cf. Jer. xix, 13, and Zeph. i, 5) was a simple use for laying the dust with a pleasant fragrance on the air.

Compare with this the modern use of oil of turpentine (terebinthinae oleum) as antiseptic, expectorant (cf. the Assyrian use for too much saliva), hæmostat, diuretic, and anthelmintic. BMI. 174 ff. prescribes an ext. application, followed by a warm flannel, for stomachic affections.

1 Any argument from the use of the qa-measure for riqlI is invalid here; it is true that liquids are measured by qa, but we find that as incense, it is measured this way as against the mana weight for rigge (see p. 19), so that, if turpentine emits an unpleasant odour when burned, we must accept that riqburasu in incense is powdered resin.

2 The form riqlI is thus used, KAR. 157, 57.

3 Note the parallel riqlI.
and bronchitis, and its use in enemata, while an ointment can be made of it with white or black dammar, yellow wax, and kokum butter. BMM. 513-15 gives that of P. Longifolia for fumigations and chest plasters, the oil int. for gleet and gonorrhoea, the resin as diaphoretic and as a paste for buboes and as fumigatory for ulcers: and the resin of P. deodara for skin diseases. In England a hundred years ago (PC. xcv, 432) oil of turpentine was used as a stimulant to the stomach, for the secretions of bile, of the kidneys, and of the uterus, in obstructions from gall-stones, and for numerous other affections.

In MT. it is found:

riGLI:

(1) Simply: ext.: Eyes, †, [AM. 12, 4, 11]: 14, 3, 3. Ears, brayed alone on wool, AM. 34, 1, 5 (followed by oil, and hûn “gum” of riGAN.bar): †, followed by oil . . ., ib. 13: †, (two oils), 38, 4, ii, 5 + 37, 10, 6. Feet, †, rub, AM. 69, 7, 4: with riGAM.GAM (fir-turpentine) bray alone, apply, 74, 1, iii, 2: (PA riGI.PAR, PA of licorice, PA of laurel, and fir-turpentine), locally, ib. 5: Breast, †, poultice, AM. 26, 3, 3: 49, 1, iv, 7. Lung, †, poultice, AM. 55, 1, 8: sim, or breast, †, poultice, 72, 2, 6, dup. 64, 3, 8. Cough, †, bind on, AM. 50, 3, 2, 8. Anus, †, after pounding, apply brayed in himedu-ghee, KAR. 191, r. iii, 9. Swollen muscles (saLi zirLi) of hands and feet, †, AM. 98, 3, 16 + 39, 3, 1. Swelling, with fir-turpentine in pig-fat, etc., in beer, bind on, AM. 73, 1, 26. Dikši (bruise), †, poultice, KAR. 182, 32. “Poison,” †, poultice, AM. 98, 3, 9. Gonorrhoea, bind tip of penis in fat, AM. 58, 6, 5, dup. KAR. 193, 20. Hand of Ghost, †, poultice after rubbing the place with “cedar-blood”, AM. 93, 1, 13.

Suppository, †, in fat and cypress-oil, AM. 43, 1, 3: [with fat (?)], sprinkled with cedar-oil, 101, 3, 4. Enema, †, AM. 56, 1, [4], 10, 14: 94, 2, 4, 7: KAR. 157, 4 (the form riLI, †, similarly as enema, ib. r. 14).

Int.: Kidney-trouble, with black saltpetre, and ostrich-egg shell (i.e. carbonate of lime) in squeezed grapes drink, AM. 39, 6, 9. Urinary trouble, 15 grains of black saltpetre with “a quarter” of riLI, drink in hurumu-beer, KAR. 155, 2, 10. Jaundice, alone, drink in beer, Kû. iii, iii, 8. Stomach, with “gall-plant” drink in beer, Kû. ii, iii, 22. Some female trouble, with licorice-seed and Asa feitida, bray and drink in beer, KAR. 194, r. iv, 4. Too much saliva, †, uncertain use, AM. 31, 4, 19. Tooth (or mouth), with fir-turpentine, and † (?), uncertain use, AM. 78, 1, 28.

Fumigate: Eyes, †, [AM. 12, 4, 8]. Ears, †, AM. 33, 1, 31 (dup. 34, 5, 6, and 38, 2, r. 8).

Quantities: ½ mana, AM. 51, 8, 10: ¾ mana, AM. 56, 1, 14 (in enema): ½ ma (sic), AM. 43, 5, 9: [10 shekels], AM. 57, 3, r. 10: 1 shekel, AM. 40, 1, 62: 15 carats, AM. 49, 6, 1 (poultice): ½ qa, AM. 73, 1, 8.

(2) Seed of riLI: ext. Eyes, †, AM. 8, 1, 17 (dup. Scheil, RA. 1921, 6, 5): AM. 19, 6, 5, 10. Blains (siggati), †, AM. 32, 5, 5.

Uncertain use: “Retention of anus-trouble,” †, AM. 40, 5, 18.

Enema: 3 shekels, †, AM. 41, 1, 14, 15.

(3) Oil: ext. Ears, †, AM. 35, 2, 12. Lung, with oil of fir-turpentine anoint, AM. 5, 1, 8. In a charm against unpopularity (i.e. the drug has a pleasant smell), †, anoint, AM. 87, 1, r. 9, 12.
(4) Water: in ritual before Gula, on roof, sweep the earth, sprinkle with "pure water of ūL", KAR. 73, 7, (the form "pure water of ūL" on KAR. 157, 35 (cf. 40)).

(5) ZID (powder): ext. Bruise (dikši), †, boil, anoint the place with oil (or kimétu-ghee) and poultice, AM. 96, 1, 9. Childbirth, 1 qa (of ZID ūL), †, poultice, KAR. 195, 24. Weak hair, †, bind on head, 10 shekels, CT. xxiii, 33, 10.

(6) (iš)xše-ū-LI, kiskirānu, "seed of the pine" (with variants kirkirānu, gilkirānu, D. 215, 96) occurs in MT.: Stomachic, probably, †, drink in beer, Kii. ii, ii, 34 (išxše-ū-LI). Jaundice, drink alone in beer, Kū. jii, iii, 8 (išxše-ū-LI). Some form of strangury, bray with heliotrope, black saltpetre, and ostrich-egg shell, drink in squeezed grapes, AM. 59, 1, 26 (išxše-ū-LI). The powder (ZID ūL) to be sprinkled alone on a thorn-fire, allowed to enter his fundament (UR-SU) and nostrils to make him cough, for some lung-trouble, AM. 54, 1, 8.

Here ūL certainly suggests the seed: Pliny (NH. xxiii, 74) says that the pine-nuts are slightly bruised and boiled down, the decoction being used for blood-spitting, while the kernels are salutary for the kidneys and bladder, having a diuretic effect.

išxše-ū-KU is a parallel (terinnatu "seed of the fir"). Like išx-an-na-ū-KU and išx-pa-ū-KU, it is given the value of š(z)i(p)atu, which at first sight might seem to be the Syr. zephtā (Arab. zīf) "pitch", but I am now inclined to doubt it. Kirkirānu is cognate to the Heb. kīkkār, a round loaf, a weight (cf. Meissner, MVAG. 1913, 2, 36: Kū. 86). For this word "Cypress-zapfen" has been suggested, but I am inclined to think that it means the seeds in the cones, and not the cones themselves; for one thing, ūL means "corn", "grain", and, for another, the išxše-ū-LI are prescribed in MT. without any further definition.

In De Genouillac, ITT. 5, 6956, we find 20 qa of ūxš-LI mentioned with 15 mana of zabakum, 5 mana of šurme, and MAŠ.1... (cf. the receipt in the Umma-text, Deimel, Ornd. 15, 1925, 55). It is possible that even burašu may take on some special meaning of this kind: note VAT. 72, 1, "2 qa of honey, 5 qa of karšu, 5 qa of burašu," where, since we have the mention of honey it might be proper to quote VΚ. 464: "The seeds of this [the stone pine] and the cluster pine are eaten throughout Italy, both by the poor and rich. They are as sweet as almonds, but partake slightly of a turpentine flavour." PC. xxv, 431, says that "the P. pinea, or stone pine, produces seeds, denominated nuclei pineoli, which in France and Italy are used at dessert, and even in the time of Pliny were preserved in honey, a custom continued in Spain to the present time, the sweetmeat called turonme being a mixture of honey and the seeds of the pine". Pliny (NH. xv, 9) describes the "pine-nut" as containing a number of small kernels, those of the variety known as pitis being boiled in honey by the Taurini. IB. 1417 mentions the remedies from pine-cones.

2. (iš)xše-ū-PAR, sīhū, šīhū "white burašu", pin blanc, Pinus Halepensis Mill.

Besides the simple ūqLI, burašu, there is this form of pine which Meissner (MVAG. 1913, 2, 36) rightly identified with the Syr. šīhā, šarrā (Septuagint, PS. 2610; according to Dozy, 798, the Arab. ših, pin, sapin: FJ. iii, 13 makes šah Abies cilicica (Ant. et Ky.) Carr.). That it is closely
allied to the pine is clear from the word *riṣšE-li-par*, given as *kiškirān burāši* (Meissner, ib. 17, 23); but that there may be a variation in its meaning is also clear from the group (*āṟEJin.sud*, a cedar (ib. 21, 43) (p. 286). The probability is that it is the White Pine,¹ as given in the heading above.

It is used thus in *MT.*:

Simply: ext.: *Bruise*, with fir-turpentine, pine-turpentine († (?) in *yeast*, AM. 82, 2, 8.


Enema or suppository: in one of three *mašqīdi* as enema with pine-turpentine, †, AM. 41, 1, iv, 3: as suppository, with pine-turpentine, †, pounded and sifted (filtered), in fat, *AM*. 94, 2, ii, 7.

Quantity: 2 shekels, AM. 90, 1, iii, 8.

1. (*i*)**i**GAM-GAM, *kukru*, fir-turpentine.


3. *Mešri*, similar, but probably the poplar.

(a) *i*GAM-GAM, *kukru*, the second commonest drug in *MT.* after *burasu*, pine, with which it is commonly mentioned. It was at one time identified, I venture to think rather ineffectively, with chicory,² from the similarity of sound (Jastrow, *PRSM*. 1914, 33: *TCP. 380*: *E.*, xiii, 9: *Bob.-Ass. ii, 305*: and even in Meier’s *Die Ass. Beschw. Maqlû*, 1937, 41).


Note the following important passage in *Maqlû* (Tallqvist, vi, 35 ff: Meier, vi, 37 ff):

(37) Šiptu. *rišKukru riškukru* (38) *riškukru ina šadān1 ellūti2* quddusi (39) širūti1 tiři ša ešíti (40) širūti1 *šterinnušti* (i.e. *iššE-ū-KU3*) ša qaddāti (41) alkanimma ša *šmšt-kāšša-pī-ia* u *šmšt-kāšša-pī-ia* (42) daš-nu GAZ-A 4 *rikissa* (43) [u] mimma gama tepuša nutir ana šitri: "Incantation. *O kukru, kukru, kukru*, in the pure holy mountains children thou hast begotten on a vestal, the children, the fir-cones, on the sacred prostitutes qurμ, ṭerinnatu* (i.e. *i$SE-U-KUP4*), lit. "grain, seed of the *aššuḫu*",

¹ It can hardly be the *Pistacia Terebinthus* L. (see p. 253), in spite of the fact that the Chian turpentine, which is obtained from this, is "of a white colour inclining to yellow" (V.K. 563: cf. *Fr. III*, 42).

² I think Langdon’s "chickpeas" must be wrong (*J.R.A.S.* 1925, 719).

³ With šterinnušti1 "Tannenzapfen" three lines further on!

⁴ Or *kal nu-hiḫu*.

⁵ Meier translates "Ihr kleinen tīšu-Gefäße der Priesterinnen Ihr kleinen Tannenzapfen der Hierodulen."

⁶ Tallqvist: "Ihre Beine insgesamt wollen wir brechen."

⁷ Better, I think, than Meier’s "haben wir zu Wind gemacht."
which, as will be seen later, is the fir. The det. ris should long ago have ruled out the ridiculous "chicory", even if the word itself (ʾšek-ū-ku) did not. The invocation to the kulru as being prob. the parent of the "grain of the fir-tree" is a definite indication of the connection; a parallel to this is the Aram. b-nāth ʾarāḏ = the Arab. ḫabb ʾal-šanābūr (F.J.2 iii, 43). In jewellery the word terinnatu is used apparently for ear-rings (TA. 25, iii, 55, 59, 66), made of ʿabān ṣār. gūr. ba, pyrites, doubtless in the shape of fir-cones, made in a granulated material (cf. Meissner, Suppt. 102, and D.ACG. 90). Actually the word terinnatu suggests the Syr. harānathā (not cypress but acacia, F.J.2 ii, 380). I would suggest that the kulru here is not intended as the fir-tree itself, but the sap or turpentine likened to semen as the creative force in producing the "children on a vestal", i.e. the fir-cones on the tree. I may add that enitu is a word also used of the laurel (p. 299). The root is probably harāru, similar to that of kirkānu, p. 261.

It might be well to break off for a moment here to consider the exact purpose of these medico-magical texts of Maqlī, which were written for those suffering from sorcery, from which it would appear obvious that the patient is evincing actual physical signs of such an attack. I submit that this is simple colic in several cases: e.g. the patient in Tablet VI strives to turn their machinations to wind, and thus be freed: (32) "[... ] her sorcery to storm-wind, her words to wind, (33) let her sorcery be blown away like straw (34) [may] they ... her like ashes, (35) may her sorcery be softened [like the bricks of a wall, (36) of my [ ... ] may the bond of its stomach be freed." This, in connection with the quotation in the preceding paragraphs above, forms very strong evidence for this suggestion and, if so, we can compare the employment of fir-turpentine as a stomachic.

To continue with ʾiṯq-GAM-GAM:

ʾiṯq-GAM-GAM is described in BRP. 14 in the explanation ḫbišti ʾiṯq-GAM-GAM ʿākappā lībāū "the gum of ʾiṯq-GAM-GAM wherein are kappā". I presumed in JRAS. 1924, 455, that this referred to the ends of the branches of several species of Pinus, which put forth light-coloured shoots in the spring, bearing a likeness to the hand and fingers, which would then be parallel to the Heb. kapḥ (in kappāth tᵉ'ārim, huge hand-shaped branches of palms, Lev. xxiii, 40). I am inclined to think now that it might again mean the fir-cones, on the analogy of the Heb. kaphṭūr "knop", but there is no authority for this, and it must be pointed out that kappā is not mentioned in the group in Meissner, MVAG. 1913, 2, 16, 5-7, where terinnatu is the equivalent of ʾiṯqūr (= ʾšek-ū-ku) and ʾiṯnumūn-ū-ku, the latter also being represented by zir ʾašūhi.

Consider, next, the use of kulknu in MT. In general we find it used ext. for eyes, ears (on wool), teeth (on wool), hemorrhoids, feet or legs, breast and lungs, and as an application to the end of the penis in gonorrhoea, and on bruises; in fumigation for ears; in enemata: and int. for foul breath, too much saliva, lungs, and "sorcery". The seed is used in ears, the water as a stomach poultice, the powder in a poultice after anointing 1

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1 In Maqlī i, 24, terinnatu (ʾšek-ū-ku) is one of four substances used in washing the hands ceremonially. Cf. also Ebeling, Albor. Stud. i, 24-5, ʾašūhu ʾeṣgatum ša terinnatu ʾiṯkunu.
with oil (probably a resin plaster); and there is a special "oil". We have only to turn back to p. 258 to compare the uses of pine-turpentine to see how similar they are.

The following are the details of its use in MT:

The form is usually riš-GAM-GAM, but aššu-GAM-GAM is found:

1. Simply: ext. : Eyes, †, [apply]. AM. 12, 4, 11 : 14, 3, 3 : †, apply, 16, 1, 11 : †, bind on, 14, 1, 7 : †, a lābkū, 19, 6, 5. Ears, †, insert in cedar-oil on wool, AM. 33, 1, 24 : †, boil in water, insert on wool, ib. 38 : †, bind on, hot, KAR. 202, iv, 25. Teeth, †, apply on wool, AM. 28, 9, 4 : †, [apply], 79, 1, 28.

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The form is usually riš-GAM-GAM, but aššu-GAM-GAM is found:

1. Simply: ext. : Eyes, †, [apply]. AM. 12, 4, 11 : 14, 3, 3 : †, apply, 16, 1, 11 : †, bind on, 14, 1, 7 : †, a lābkū, 19, 6, 5. Ears, †, insert in cedar-oil on wool, AM. 33, 1, 24 : †, boil in water, insert on wool, ib. 38 : †, bind on, hot, KAR. 202, iv, 25. Teeth, †, apply on wool, AM. 28, 9, 4 : †, [apply], 79, 1, 28.

Temple, †, bind on, CT. xxiii, 41, 2 : 42, 8 (ten carats), AM. 4, 6, 2. Breast, †, after cleansing mouth and nose, poultice, AM. 26, 3, 3. Cong h, †, bind on, AM. 50, 3, 8. Lungs, †, poultice, AM. 55, 1, 8. Feet, †, bind on, AM. 74, iii, 7 : 19, 6, 5. Eyes, †, apply, 16, 1, 11 : †, bind on, hot, KAR. 191, r. iii, 8. Gonorrhēa, †, bind on in fat to tip of penis, KAR. 193, 20. Swelling, †, bind on, AM. 73, 1, 26 ; swollen feet, †, bind on, ib. 18. Bruise (dīkšī "mardakbit"), †, bind on, AM. 96, 1, 18. Blains (ṣiggāti), †, bind on, AM. 32, 5, 8, 10, 12. A blow (mišitti), †, poultice, AM. 76, 5, 7, 9 : 77, 7, 9. Hand of ghost, †, (poultice head), AM. 93, 1, 15. Various poultices, †, AM. 2, 1, 22 : 15, 3, 13 : 22, 2, r. 11 : 25, 4, 6 : 29, 5, 6 : 37, 7, 4 : 72, 2, 6 : 84, 4, iv, 2.

Int.: Foul breath in mouth, † (1 grain each), in oil and beer [drink], AM. 26, 6, 11. Too much saliva, †, AM. 31, 4, 19. Lungs, † (?), drink, AM. 45, 1, 7. Sorcery, with 31 others, drink, AM. 89, 1, 5.


(2) Seed: Ears, alone, AM. 38, 4, ii, 11.

(3) Water: Tu (bowels), with water of dates, poultice, AM. 43, 1, ii, 9.

(4) ZID (powder): Weak hair, etc., 10 shekels, †, bind on, CT. xxiii, 33, 10. After childbirth, 1 qa of ZID riš-GAM-GAM, †, poultice, KAR. 195, 24. Cf. KAR. 192, iii, 54.

(5) Oil: anoint, AM. 22, 2, r. 8 : AM. 45, 1, 4, 8 : prob. [anoint], AM. 76, 2, 7. (For the medical uses of turpentine see p. 259.)

The form is usually riš-GAM-GAM, but aššu-GAM-GAM is included among the "drug for hunger" (Pl. 29, K. 4566, 28, and KAR. 203, iv, 6).

What is noticeable is that it is used in one recipe for foul breath. Inasmuch as Chian Turpentine (Pistacia Terebinthus L.) is chewed by the inhabitants of Turkey and Persia to sweeten the breath, like mastic (PO. xxv, 433), it would be for us to consider whether riš-GAM-GAM is not a more valuable turpentine than merely that of the fir. The burasu was twice as cheap as aššu-GAM-GAM in Nebuchadnezzar’s time (a shekel would buy 20½ qa of riš-GAM, and only 10 of the riš-GAM-GAM, Scheil, RA. 1921, 97): the turpentine obtained from Pinus sylvestris (and other species) is the commonest sort, while at the other end of the scale is the Chian turpentine.
(Pistacia Terebinthus L.), more costly than the other kinds, since a tree over 50 or 60 years old yields no more than 10 to 12 ounces annually (BC. xxv, 431). Indeed, it is possible that we have a further clue in the Arab kamkâm, possibly our ṝiṯagam-gam, which IB. 1451 and 1973 give as terebinthine, although some say that it is the gum of Pistacia lentiscus, mastic, and others its bark. Possibly our word survives in Pliny’s can­

camum, a gum-resin (NH. xii, 44).

Nevertheless, there are grave objections to this identification, for we already have ṣam-gal as P. Terebinthus (p. 253) and we have ṝe-iḏ-ku, with which ṝiṯagam-gam is closely connected in the same text, given as “seed of the asuḫu-fir”, i.e. fir-cones.

Moreover ṝe-iḏ-ku, with the meaning fir-cones, could not represent the P. Terebinthus, for this latter has none. It is obvious, therefore, that we shall have to adhere to our meaning “fir turpentine” for ṝiṯagam-gam.

From this we can go on to ṭiru, ṭuru, and ṽuru. The Sumerian forms give ṭiḏ-ram (= šahatum and ṽuru, CT. xii, 25, ii, 45, 46): ṭiḏ-ram (= ṭu (?), v. ṭi (?)-ru, Meissner, MVAG. 1913, 2, 18, 30). Presumably this is the same as šam-gal. ṭiḏ-ram, explained as šammu ša lib ṝe-iḏ-li-Par (Pl. 34, K. 4169, 7) “drug from the Pinus Halepensis” : Pl. 45, i–ii, 29, gives ṭi-ru = i-iu–... , which is perhaps to be restored from the explanatory text BRP. 14, ṭiḏ-ram: ṭu-ru: in-ša-ru-u: ṭi-ši-ši-ši ṝiḏ-gam-gam ša kap-pi-e lib-bu-u (“gum of the fir wherein are kappê”, see p. 263), inšarû being the Aram. ʿudširu (“ sap ”: in Langdon, Bab. vii, 1913, pl. iv, K. 4369, ii, 12, šam ṭiḏ-ri = ditto (i.e. urqitu a-šu-u “green coming forth”). Hence the concordant equivalence of šam ṭiḏ-ram, ṭiḏ-ram, and ṭiḏ-ram is certain, the values being ṭiru, ṭuru, ṽuru “the drug of the Pinus Halepensis”, “gum of the fir”, “sap”, “green coming forth”. The Arab. ḏîrw “lentiscus, mastic” (IB. 1431) might represent ṭiru, ṭuru, except for the Heb. šôrî, which appears to be the cognate to the Arabic; at the same time, ḏîrw is described as a gum like that of the terebinth and called kamkâm (see above), while the Heb. šôrî, according to FJ. i, 196, is not mastic, but storax. Meissner suggested the Talm. ṭûrâ, MVAG. 1913, 2, 36, a bitter herb, Jastrow, Dict. of Targ. 526.

Ṭiḏ-ram is found in MT. thus:

(1) Simply: ext.: Eyes, ṭu, [apply], AM. 16, 1, 16 (cf. 8, 6, 6). Ears, ṭu, [insert], AM. 34, 1, 15, 34. After cleaning mouth and nose, ṭu, poultice, AM. 24, 5, 7. Teeth yellow, etc., boil alone with honey [and apply (?)], AM. 31, 6, 13. “The top of the heart burns” (rîš libbišu bîl), poultice, AM. 39, 1, 4 (½ qa). Lungs, ṭu, poultice, AM. 54, 1, r. 7. Chilblains, ṭu, bind, AM. 32, 5, 13. Asida (footsole), alone, dry, poultice, steep in rose-water, bind, AM. 75, 1, iv, 17. Swellings, prob. alone (… ṭiḏ-ram), dry, pound, AM. 73, 1, ii, 2 (cf. ṭu, KAR. 192, r. 2, 11).

Int.: ṭu (?), drink, AM. 57, 6, 4.

Fumigate: (? ) Nose, ṭu, ṭiḏ-ram (?), AM. 64, 1, 21 (dup. 55, 8, 1, and sim. KAR. 202, 37). Ghost, ṭu, AM. 99, 3, 10 (dup. AM. 33, 3, 13, etc.).

Enema: AM. 41, 1, iv, 17: ṭu, KAR. 157, r. 16.

Quantities: ¼ ṽiḏqi, AM. 41, 1, iv, 17: 1 šiš, ṭu, 24.

(2) Fat (lipd): Swollen stomach, ṭu, “put to anus,” alone, in flour of roast corn, uncertain, but apparently ext., Kû. ii, i, 22: ½ qa ṭiḏ-ram steep
in . . . , spread on a cloth, spread roses and galbanum, bind, AM. 54, 1, r. 7.

This completes our information about "qarim which would appear to be the gum of the fir, if not of one of the species of terebinth. We can go on the "asulu, the tree from which the fir-turpentine comes.

2. "tuk, asulu, Abies (prob. cilicica Ant. et Ky.) fir.

"garm-gam, kulu, has been shown above probably to be the turpentine and resin of the "asulu and, although we have seen that the value of "garm-gam was twice that of the "unu (pine), all the other evidence points to the asulu being a common species rather than P. Terebinthus.

"tuk has the values (a) apparently of amalu (vR. 47, 18, b): (b) asulu (D. 455, 97, b, c): (c) lamnu (CT. xviii, 3, 20): and (d) lamu (p. 267). Lamnu has already been discussed (p. 248, "plane," etc., but equally probably something of the terebinth species: mehu in its turn must have a distinct meaning (p. 247): amalu is practically a hapax legomenon: upatn qinne amalu "equus, which Langdon (Bab. Wtd. 58) translates: "he has upheld [my neck] like an mountain, he has set upright like a cedar." Patn is a word of uncertain meaning: in the Commentary (see ib.) qinne = sad (kin ?)-u.

We may therefore expect some difficulty in identifying asulu exactly, but it certainly must be the Aram. 'asulu (Ball, PSBA. 1887, 127), which is taken to be Abies cilicica Ant. et Ky. (FJ. iii, 39) which grows in the Amanus and at Mar'ash. Asulu occurs in a pre-Sargonic text (De Genouillac, ITT. no. 9188): it grew in groves (Meissner, MVAG. 1919, 2, 20, 7), and groves of asuli are mentioned as far back as Samsu-iluna (Strassmaier, Waraka, 48, B. 78: Peiser, KB. iv, 31): note the nar asul "canal of asul" which Immeru dug (Meissner, Alt. Privatr. 22). Gudea cut "great "tuk", along with "tulubum (planes) and "zabalam (junipers) in the mountains of Ibla (ISA. 109, v, 56: cf. 155, xv, 32, where they are mentioned with "erunu (cedars), "surum (cypresses), "zabalam (junipers), "tulubum (planes), and "erulum (see p. 286)). Their length was 13 cubits (presumably after cutting) (De Genouillac, ITT. v, p. 4): third Dyn. of Ur, 12, 11, and 7 cubits (Allotte de la Fuye, RA. 1919, 4): an OB. letter (Kraus, MVAG. 1931, Alt. Briefe, no. 1, p. 3) mentions sixty "asul-trees of 1 GA-NA or 2 GA-NA length, and 1 or 2 handsbreadths thick. In early Assyria it is used for doors (Adad-nirari, KAH. 1, 6) and in late Bab. times for building (Neb. ix, 5, etc.). The value of the "tuk in early times was at the rate of 12 for a shekel, and of the "tuk-gal ("male fir") at 8 for a shekel (TUrk. p. 14: cf. time of Sulgi, ib. no. 121, iii, 3). The mention (by weight) of 10 mana of "tuk (along with 10 mana of "zabal (juniper)) in the reign of Rim-Sin, suggests a resin (C.-F. Jean, RA. 1927, 66).

In MT. "tuk is rare: we find, however, PA "tuk, followed immediately by "garm-gam (KAR. 208, 13), for what use is not clear, but the next recipe is a short one for KU-GIG "anus-trouble". The distinction made here between "garm-gam "fir-turpentine" and the PA of 1 Cf. TUrk. 131, iii, 7, of Sulgi's period, where the "tuk is mentioned.
the fir is interesting. This latter product is to be found in the important group devoted to this tree (Meissner, MVAG. 1913, 2, 16, ii. 3-7): \(\text{šár-ra} \text{ and } \text{šú-ku-ki-šár-ra} = \text{giššintu} \)\(^1\): \(\text{šú-ku} (= \text{šé}, p. 263)-\text{ú-ku}, \text{šunun-ú-ku} = \text{terinatu} : \text{šunun-ú-ku} = \text{zir ašuḫu}, \) followed by another group, \(\text{ú-ku-8-13}: \text{šú-na-ú-ku}, \text{šú-še-ú-ku}, \text{šú-па-ú-ku} = \text{šú-zi}(p)\text{patu} : \text{šú-па-ú-ku} = \text{artu}, \) ditto ašuḫi: \(\text{šú-bir} \) \(\text{šú-giššimmar} \) \(\text{šú-num-ú-ku} = \text{súbabu} \) (note a parallel for \(\text{šú-an-ú-ku} \text{ in } \text{šú-an-giššimmar} = \text{sissinni}, \text{Br. 456})\).

Our outstanding difficulty in identifying \(\text{šú-gam-gam} \), kākur (in contrast to ašuḫu), is that its close parallel \(\text{šú-lāl}, \) barasū, makes no such definitely contrasted distinction between the meanings for the wood, turpentine, and resin, as exist (according to our identification) in the case of \(\text{šú-gam-gam} \) and ašuḫu. Yet our evidence shows that \(\text{šú-gam-gam} \) has a hibisti (gum), with all the concomitant evidence given on p. 263. Indeed, in the early text quoted on p. 262 it may be that gugrum is actually the tree; but this word certainly ceases to have that significance as time goes on. It really works out to this: that \(\text{šú-gam-gam} \) must be very close to the turpentine of the fir, although it is possible that we may have to identify it more closely with some gum distinct from that of \(A. \text{ ciličica} \).

3. \text{šamMehrū}.

It is an equivalent of \(\text{šam} \) ašuḫu, some kind of fir (p. 247). In the large inscription of Ashurnaširpal which we found in the Temple of Ishtar at Nineveh in 1930-1 (AAA. xix, 111) the king says: "50,000 troops I assembled; to the land of Mehrū I went; Mehrū to its whole extent my hands conquered. Beams for Ishtar of Nineveh, my lady, to roof E-mas-mas and to roof my palaces I cut down." His Annals (AKA. 374, iii, 91) are still more explicit: "To the land of the meḫri-trees (māt \(\text{šem-iḫ-ti} \)) I went, and the whole of the land of meḫri-trees I conquered. I cut down beams of meḫri-wood, and unto Nineveh I brought them." Tukulti-Ninurta I carried off 28,800 Hittites from the western side of the Euphrates, and thereafter conquered the Babhi and Uqumanī as far as Šarnida and Mehrū. The large number of Hittite prisoners taken suggests a large population, to fight which Ashurnaširpal's force of 50,000 must have been necessary, that is, if these statements are not exaggerations.

Sidney Smith would put the land of Mehrū in Persia, along the Zanda Rud (Bab. Hist. Texts 17): Landsberger and Bauer (Z.A. 1926, 75, quoting KAH. 2, no. 84, 24 ff.) take the land of Namri, which lies on the way, to be Pushšt-i-Kuh. But I cannot agree that Mehrū lies in Persia: Tukulti-Ninurta's mention of Hittites almost in the same breath indicates a locality north-west or west of Assyria.\(^2\)

But Smith's suggestion for the meaning of the tree meḫri, that it is "alike" or "equal" (i.e. on both sides) with reference to the appearance of the poplar is ingenious, and may be right (although such a description applies equally to the larch or pine): the villages in the Hittite country

\(^1\) Apparently variant \(\text{šú-gam-ma-ú-ku} \) in Meissner, MVAG. 1913, 2, 17, 13 (= \(\text{súbabu})\).

\(^2\) Cf. Layard, Nin. and Bab. 114, "unless the levers [for moving the big bull] were brought from a considerable distance, they must have been of poplar, no other beams of sufficient length existing in the country [Assyria]."
round Carchemish usually have each their own little grove of poplars, numbering from fifty to a hundred and fifty, from which they draw their supply of beams for roofing. The letter ABL. 467, 25, mentions ša "mehri šina raggā'a addannīš "of the mehri-trees, they are very thin" (ragga'y appears to mean "fine", of female nightšu-gum, BRP. 37, 12). The tree occurs in an omen—between the dapranu (juniper) and the šarbātu (willow) (TR. ii, 23, 4–6).

(Qan mehri, PL. 47, 35503, 15–17, and P. 49, 93806, 10–12, and ABL. 455, 15, is different. Is šamšu-ḫi-ru a form of it (KAR. 203, x, 8) ?)

D. 1. šaŠa-ba-LAM, zabalum, Juniperus excelsa M.B., juniper.
2. šamŠam-RIM, supalu, manna.
3. šamŠam-šušintu, šamšašuntu, manna when excreted by the qaqqaddānu (cicada).
4. šaŠa-Ša-AN, dapānu, Juniperus drupacea, Labill., juniper.

1–3. šaša-ba-lum is mentioned by Gudea (Cyl. A, xv, 30–1) in proximity to cedar, cypress, plane, and šerālum (cf. also xii, 5). Scheil (RA. 1921, 54, 26, 3rd Dyn. of Ur) gives šaša-[ba]-lum. Its product is mentioned in Rim-Sin’s time (C.-F. Jean, RA. 1927, 66, 12) as “10 mana of šaša-ba-al”, and about the same period (De Genouillac, ITT. v, no. 6956, p. 4) “15 mana of šaša-ba-lum”. The wood does not appear to have been used in later times. As šaša-ba-lum it appears in a Ras Shamra list (Thureau-Dangin, Syria, 1931, pl. xlvi).

šaša-ba-lum is recognized as a Sumerian form (CT. xix, 39, K. 9888) in a Sumerian column containing in the preceding line šaša-[ba]-lum, and on CT. xvii, 38, 39–40, we find .. su-pa-lu as equivalent for .. šaša-ba-lum. In CT. xvii, 3, 22, su-pa-lum = šerīnu, and in the vocabulary on Pl. 45, K. 4152, iv, 7, šamšu-pa-[lu] precedes šišα-i-[-] and šamšu-i-[-].

We have to consider certain variations of these words obviously with different meanings. šaša-ba-lum is the tree; šamša-ba-lum is distinct from šamŠam-RIM (= supalu) (p. 269). šamSupalu will presently, I think, be seen to have the value of manna; šušalum is presumably the tree.

Philologically šušalum must surely be, by metathesis, the Arab. ḥizzāb, Juniperus excelsa M.B., which grows in the Syrian desert, the Lebanon, Anti-Lebanon, and Palestine (FP. ii, 801).

šaša-ba-lum occurs in MT. :
Ext. : †, AM. 12, 12, 4 : †, 77, 2, 1. Bind on, †, AM. 15, 3, 12.
Int. (?) : Hand of Ghost, with affection of the temples, †, in kurunnu.
šašu-pa-lum occurs in MT. :
Ext. : (bind on), †, AM. 98, 3, 8 : Temples, with dulcamara, dry, pound, strain, CT. xxiii, 40, 7 : head, šamšu-pa-lum in almond-oil and rose-water steep, bind on, CT. xxiii, 30, 60. In ritual šu-pa-li, BBR., no. 75, 7, with cedar, cypress, almond, gauš balluški, etc., which would show that it is a sweet gum (or similar) for incense.

Consider first the difference between šaša-ba-lum (šušalum) and šamšu-pa-lum : Pl. 46, K. 4184, 1–4, r. 1–7 give :
Obverse:

\[
\begin{align*}
(b) \text{samšá-mi gaq-[qa-ri]} & \quad \text{[samšu-pa-lu]}^1,^2 \\
(c) \text{is[al]-bi e-si-e} & \quad \text{samšu-pa-lu}^2 \\
(d) \text{samIN-NU-UŠ} & \quad \text{samšu-pa-lu}^3 \\
(e) \text{sam} & \quad \text{samšu-pa-lu} \\
\end{align*}
\]

Reversi:

\[
\begin{align*}
(f) \text{samNAM-TA-È} & \quad \text{samšu-pa-lu} \\
(g) \text{samKL-[šiš]-šiš-KI} & \quad \text{samšu-pa-lu} \\
(h) \text{samNIGIN} & \quad \text{samšu-pa-lu} \\
(i) \text{sam[gb]-lu-lu} & \quad \text{samšu-pa-lu} \\
(j) \text{samAN-ŠIR-LU} & \quad \text{samšu-pa-lu} \\
(k) \text{samNIM-TA-È} & \quad \text{samšu-pa-lu} \\
(l) \text{sam} & \quad \text{samšu-pa-lu} \\
\end{align*}
\]

Again, Pl. 24, K. 4412, iii–iv, 1 ff., and Pl. 37, K. 4417, l–2:

\[
\begin{align*}
\text{iamb} & \quad \text{sam\textbackslash išid} \\
\text{iamb} & \quad \text{šá eq\textbackslash i} \\
\text{iamb (¿)} & \quad \text{sam\textbackslash išid a-la-me-e} \\
\text{iamb [ku]-šak-lu} & \quad \text{sam\textbackslash išid {\textcircled{O}}-[ku]-šak-lu} \\
\text{sam\textbackslash u-um-lú} & \quad \text{sam\textbackslash u-um-lú} \\
\text{sam\textbackslash u-ši-tú \textit{imeri}} \quad \text{sam\textbackslash išid-[mí]} \\
\text{sam\textbackslash išid-[mí]} & \quad \text{sam\textbackslash išid-[mí]} \\
\end{align*}
\]

Again, Pl. 37, 81-2-4, 269:

\[
\begin{align*}
\text{sam\textbackslash išid} & \quad \text{šá eq\textbackslash i} \\
\text{[ma]-n sá eq\textbackslash i} & \quad \text{sam\textbackslash išid a-la-me-e} \\
\text{man \textbackslash i eq\textbackslash i} & \quad \text{sam\textbackslash išid \textcircled{O}-[ku]-šak-lu} \\
\text{ši-Ró GIŠ.GI} & \quad \text{sam\textbackslash u-uk-lu-n[u]} \\
\text{sam\textbackslash u-[gur (¿)]-ga-ru-ú} & \quad \text{sam\textbackslash u-uk-lu-n[u]} \\
\text{And finally, CT. xxxvii, 31, 109860, iii, 26-36:} \\
\text{samšá-mi GIŠ-TIR} & \quad \text{sam\textbackslash u-sir-bi-tu} \\
\text{samšá-mi ZID} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{samšá-mi gaq-qa-ri} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{samšá-mi e-si-e} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{sam\textbackslash u-[rar (¿)]-bi e-lu}^4 & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{sam\textbackslash u-NU-UŠ} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{sam\textbackslash u-[si-e (¿)]-[du]} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{samšá-mi eg\textbackslash i (¿)} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{samšá-mi šir-pi} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{samšá-mi šil-pi} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{samšá-mi šil-pi} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{sam\textbackslash u-pa-[lu]} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\text{sam\textbackslash u-pa-[lu]} & \quad \text{sam\textbackslash u-pa-[lu]} \\
\end{align*}
\]

1 Note samšu-pa/[lu], following samšá-mi utó (?)-aïr (gum arabic ?), Pl. 40, K. 14108, 8.

2 These occur CT. xxxvii, 26, 108859, ii, 26-7.

3 Whether, as we should suspect (with Meissner, MVAG. 1904, 3, 28), this is [i]̱am-tum, is uncertain. I re-examined both texts and both are apparently imenu. Aššur-šum occurs also CT. xi, 45, iv, 25.

4 Su?

5 From CT. xxxvii, 27, ii, 25, samšá-mi preceding samgablu-lu and samAN-ŠIR-LU.
That "supalu" is "manna" I suggested in *AH*. 161, 268, and followed this up in *AJSL*. 1937, 228, adding *qudratu* and several others. We can now consider how many kinds of manna are probable:

(1) In *P.* 759 manna is given as "a concrete saccharine exudation... from the stems of *Fraxinus Ornus* L., and *F. rotundifolia* Lam., and probably other forms of this; cultivated chiefly in Sicily". It is a mild laxative, apt to cause griping in large doses. The best occurs in pieces 3 inches or more in length, about an inch in diameter, and ½ inch or more in thickness. "The crystals deposited by cooling a hot spirituous solution constitute a peculiar variety of sugar" (*PC.* xiv, 1839, 386). According to W. Smith's *DB.* ii, 250, manna drops from these trees in consequence of a puncture made by an insect resembling the locust, but distinguished from it by having a sting under its body.

(2) Smith, ib. 229, says that the substance now called manna in the Arabian desert through which the Israelites passed, is collected in the month of June from *Tamarix gallica*. According to Burckhardt (whom this authority quotes) it drops from the thorns on the sticks and leaves with which the ground is covered, and must be gathered early in the day, or it will be melted by the sun (cf. also Gmelin, *Histoire*, ii, 356). The Arabs cleanse and boil it, strain it through a cloth, and put it in leather bottles, using it like honey or butter with unleavened bread. The tamarisk gum is supposed to have been produced by the puncture of a small insect (*Coccus manniparus*: v. Frederick, *Trans. Lit. Soc. Bombay*, 1819, i, 251). "Der honigartige Saft (of the *Tamarix nilotica* v. *mannifera* Ehrbg.) tröpft auf den Stich des *Coccus manniparus* Ehrbg., der Manna-Schildlaus im Juni aus den jungen Trieben" (Fonck 13, quoted *F.J.* iii, 402: *cf. Cambridge Entomology* ii, 597).

(3) A third kind of manna (called *tananjubin*) comes from the 'aqūl, the camel-thorn, the *Alhagi maurorum*. The genus *Alhagi* contains two species, *A. maurorum* and *A. desertorum*, both species being called *ooch turkhar* "camel's thorn". The former alone yields manna, which in Bokhara is used as a substitute for sugar (*PC.* xiv, 1839, 386), as it was also at Basrah (Frederick, *op. cit.*, 252) (see also Rauwolf, *Travels* i, 84).

(4) A fourth manna comes from the dwarf oak (Chesney, *Narr.* 501): "In the hilly district of Looristan... we find it on several trees of the oak species... From these the manna is collected on cloths spread beneath them at night, and it then bears the form of large crystal drops of dew" (*Wellsted, Travels in Arabia* ii, 48). "Niebuhr observed that at Mardin, in Mesopotamia, the manna lies like meal on the leaves of a tree called in the East *ballot* and *afs or as*, which he regards as a species of oak (*ballut* is the dwarf oak, p. 249). The harvest is in July and August, and much more plentiful in wet than in dry seasons. It is sometimes collected before sunrise by shaking it from the leaves on to a cloth, and thus collected it remains very white and pure. That which is not shaken off in the morning melts upon the leaves, and accumulates till it becomes very thick. The leaves are then gathered and put in boiling water, and the manna floats like oil upon the surface. This the natives call *manna assemra*, i.e. heavenly manna" (Smith, *DB.*, l.c.).

1 There is a good description of manna (with analysis) in Berthelot's *Hist. des Sciences* i, 386.
Mr. John Horne has been so good as to give me the following details (through the good offices of Col. Hoysted, the Secretary of the Royal Asiatic Society): “Manna falls in the mountains of Iraq on the frontier of Persia, in the district of Benjune (village of Chou-arba) only when there is lightning in the storms of late autumn. Though the fall of manna is general in the district, it can be collected from the leaves of the afus trees, which are evergreen, and from the rocks. In the earth it gets lost. It is a creamy paste, and is scraped from the leaves and rocks, boiled with water (after which an almost transparent paste is left for making a kind of sweetmeat). The manna I brought back had not yet been so treated. My informant declared that it was a precipitation from the air.”

(5) Other kinds are: (a) the “sheer khisht”, “produced in the country of the Uzbek”, said to come from a tree called gundeleh in Candahar (PC., l.c.). This is called sherkest and sherchista by Frederick (op. cit., 254 ff.), a kind which purges violently. IB. 1380 calls it šir ḥšk (from Herat). (b) “Guzunbeen”, “the produce of a species of tamarisk called gus” (PC., l.c.), supposed to be a variety of T. gallica growing on Mt. Sinai, and produced also in Laristan and Iraq ‘Ajemi. Frederick (l.c.) says that the gez of Persia “a dew that fell from heaven in autumn” is from a shrub called gavan. (c) “Shukur-almashur”, a sweet exudation from the Calotropis procera, called zuccarium al-husar by Avicenna (PC., l.c.). (d) “Bed khisht”, said to be produced on a willow in Khorassan (PC., l.c.). (e) Manna brigantiaca, or Brainçon manna, from the Larix europaea (PC., l.c.). (f) perhaps the same as (d): “In the valley of the Jordan, Burckhardt found manna like gum on the leaves and branches of the gharrob [willow], which is as large as the olive-tree, having a leaf like the poplar, though somewhat broader. It appears like dew upon the leaves, is of a brown or grey colour, and drops on the ground. When first gathered it is sweet, but in a day or two becomes acid. The Arabs use it like honey or butter, and eat it in their oatmeal gruel. They also use it in cleaning their leather bottles, and making them air-tight. The season for gathering this is May or June” (Smith, DB., l.c.).

With this information we can now discuss the vocabularies.

Consider, first, the equivalents for *supaka⁴, apart from its connection with *qubalum as the tree J. oxycedrus:

(a) šamšami zin “drug of meal”. This, if the correct explanation, would coincide with the meal-like appearance of the manna on the Dwarf Oak (p. 270).

(b) šamšami qaqqari “drug of the ground”. Cf. p. 270, which shows that manna may be collected from sticks and leaves on the ground: or, *wibid., from cloths spread on the ground; or, *wibid., as it drops from the willows (see also under qudrû, p. 274).

(c) šamHalbi esē and šamšami esē. šamEsû occurs in the following quotation from VAT. 9000 (p. 247).

\[
\begin{align*}
\text{šam } & \text{qat-ru-nu} & \text{šam } & \text{hili } \text{(l)-ni} \\
\text{šam } & \text{e-su-ù} & \text{šam } & \text{ia-ar-łu} \\
\text{šam } & \text{ak-la-bu-u} & \text{šam } & \text{ “}
\end{align*}
\]

šamQatranu looks like the Arab. qatirān, exuding “from the tree called abkat [or juniper, or the species of juniper called savin . . .]” (Lane, Dict.
s.v.), the Syr. 'ṣērānā, AYOUT, oć lưới, cedrinum, i.e. our ƃil ʿerini "gum of cedar". ʂam Aklabū is unknown: iarḥu is mentioned in gardens (ʿśćĩrū) in the Sinjar district ("5 לכת of field, usercontent, and bit ͉̃n. kārū", a house in the middle of a garden of ʾaṭ-ar-ḥu alongside the garden of So-and-so," ADD. 444, 7 ff.), and also in the district of the towns Saizīr and Ḥašanū, where "a naḥallu (brook) which flows in the midst of iarḥu" is used as a boundary mark (ADD. 414, 26; cf. r. 2). ʂam iarḥu appears therefore to be a plant grown for its produce, but probably a local North Syrian genus; ʂamerasū is equally unknown, but our Assyrian ʂam ʾalbi esē and ʂam ʿami esē suggest that it produced a gum-like drug.

The important point here, however, is to note the philological connection of the plant ʂam iarḥu with the ordinary Assyrian words ʾarḥu "(copper) scale", ʾaraḥu "(iron) scale, colcothar", and ʾadaḥhu "husk (?)", p. 96 (like ʿeṣris "husk, flake of copper", DACG. 97). If we can see in ʂam iarḥu "flake-plant", we can compare it either to the flaky tragacanth gum from Astragalus gummifer Labill. ("the characteristic of the Syrian Tragacanth is the form of ribbon-like flakes", P. 1216) or (perhaps, as well as) to the product of another Astragalus (A. florentulus, see note on p. 273) from which the gaz-angabin manna of Persia is scraped. ("The best manna is known as Flake Manna," P. 759.) Indeed, the similarity of the depositing of tragacanth and manna is so marked, that we might well admit an Assyrian confusion between the two, or at least, a comparison: "In the hot months of July and August,1 particularly after a dewy or a cloudy night, the branches of A. verus are found encrusted with tragacanth" (PC. xxv, 113, which mentions the "flake or Smyrna tragacanth") with which we have only to compare what is said of manna on p. 271.

Further, the habitat of A. verus, as given by PC., l.c. (North Persia, Armenia, and Asia Minor), confirms the view that ʂam iarḥu coincides with tragacanth, since it grows in the Sinjar district, and is never found in the Assyrian medical texts (I have no recollection of the tragacanth in Mesopotamia). In any case, it should be added, tragacanth is of little use as a drug other than as a demulcent, or mucilage.

We may then perhaps see in ʂam ʾalbi esē, ʂam ʿami esē ʂam iarḥu, and ʂam Aklabū,2 the tragacanth and its gum, perhaps partly confused with manna.

(d) ʂam ʾIN-NU-UŠ (less usually ʂam-NU-UŞ). See p. 39.
(e) ʂam ʾIRIM (parallel to, but distinct from, ʾIRIM or (ʂam)ʾIRIM = tiru, p. 285). The different values for the sign ʾIRIM (šilišu "calyx" (spherical), ʾaḫārī "to collect", and saḫāru "to go round") suggest a spherical mass or drop (like ʾIN-NIN on p. 274 in (h)), comparable to the value ʾIRIM = pagratum "gall" (from the Dwarf Oak, which also provides manna). There is a distinction between even ʂam ʾIRIM and ʂam ʿA-B-A-LAM in KAR. 202, 2, 35, where ʂam ʾIRIM is to be brayed and applied alone, and then followed at once by directions to bind on ʂam ʿA-B-A-LAM.

ʂam ʾIRIM is found in MT. thus:

Int.: Mouth or tooth, etc., bray alone, drink in beer, evacuate, AM. 36, 2, 15 (cf. PRSM. 1936, 65): foul breath, alone in oil and . . . , AM. 23,

1 i.e. the month allānū, p. 249.
2 Hardly a corruption of gaz-angabin?
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1, 5. Stomach, †, drink, AM. 39, 1, 43: tu, bray alone, [drink] in kurunn-beer, KAR. 200, 9: stomach-ache, alone in u-[sa], Kû. i, ii, 4. Loins, etc., strangury, †, AM. 31, 1, 7: strangury, †, drink, AM. 59, 1, 36, 44: some urinary trouble, †, drink, Lutz, AJSI. 1919, 80, i, l. 20. Ḥinsiqi xu-giš ("retention of anus-trouble"), one of 22, uncertain use, AM. 40, 5, 17. For ašši (appetite), †, drink, AM. 16, 4, 4 (see RA. 1929, 70, for dup.). For a woman after childbirth, whose abunnatu is "loosed", pour thereon with four others, KAR. 195, iv, 30.

Quantity: ½ qa, AM. 6, 3, 17: CT. xxiii, 27, 15. Note ı̇mRIM urqi-su tu-la-ša me-šu teliqqi 2 šiqi la-qiš ... , AM. 25, 7, ii, 9, paralleled by i. 13 ... urqi-su tu-la-ša me-šu šur-at 1 kisal la-qiš ... . "Of ı̇mRIM, while it is yet green thou shalt press, take its water, 2 shekels of oil ... ".

Note, in addition, the drug ı̇mRIM ša (?), kalab ın-NI-GI-ZI-BAR-RA zir (?)-tu-ü bi-bi ina kurunni u la-qiš kaimamu i-šat-ti (KAR. 203, ix–vii, 20, paralleled by AM. 19, 7, 4, ı̇mRIM ša kalab ın-GI-[LA] ... ).

To these we may add ı̇mSUPALU:

Ext.: Temples, †, dry ı̇mSUBALAM, pound, apply, CT. xxiii, 40, 7. [Head and breast (?)], ı̇mSUPALU alone in almond oil and rose-water, bind on, ib. 30, 60. Bruise, †, AM. 76, 2, 12. Uncertain diseases, in oil ... , alone, [apply], AM. 2, 7, 7. Supala, dry, †, bray, mix in ṣAR-GA-oil, AM. 87, 3, 8. Poultice, ı̇mSUPALAM, †, Scheil, RT. xxiii, 1901, 134.

(In the form ı̇mZA-BA-LAM, ext.): Bruise (müšittu), †, AM. 77, 2, 1. Baldness (or sim.) with lepidoûm, bind on in yeast, CT. xxiii, 25, 34 + AM. 2, 1, r. 12. Poultice, †, AM. 15, 3, 13. Bind on, AM. 12, 12, 4.

Now Jastrow (Dict. Targ., s.v.) gives the Āram. suphe as "scrappings" (rather than "kernel"), Levy, Neuheb. u. Chald. Wörterb., s.v.), which is not remote from the means of obtaining manna.1 But it must be remarked that, while ı̇mRIM is used chiefly internally (as we should expect manna to be), the prescriptions for ı̇mSUPALU and ı̇mZA-BA-LAM are external, as though they were a turpentine. Hence, while we may readily see "manna" in ı̇mRIM, the ext. use of ı̇mSUPALU in MT., at all events, may compel us to withhold a decision in this latter case.

ı̇mRIM occurs in Langdon, Le Poème sumérien du Paradis, p. 194, l. 20, among a list of plants addressed by the god Enki.

(f) ı̇mNAM-TA-È (also Pl. 38, S. 8, c, 6) and ı̇mNIM-TA-È. Here Ė must be "that which comes forth ", and NIM must be "fly" (cf. zir qaqqaddini, p. 275), the reference being to the insect which causes the secretion of the manna. The NAM has, perhaps, the value "winged " (i.e. NAM = "bird ").

(g) ı̇mKI-dšiš-ki "Earth of the Moon-god ". Comparable to this are ı̇mKI-ZA-BABBAR "Earth of the Sun-god ", and ı̇mKI-dMER "Earth of the Storm (Wind, Rain) -god ", occurring thus (CT. xi, 46, i–iv, 37–8):

1 For the "scraper" of manna cf. EB. xith ed., xvii, 588, on Manna: "the fragments adhering to the stem, after the finest flakes have been removed, are scraped off " and cf. ib. on the gaz-angab is manna of Persia, which is obtained by scraping the stems of Astragalus ferentulus.
restored according to Br. and D., the former confirmed by CT. xii, 23, 93064, 5, and also cf. the following:

Mat. 88, 3, 70–1:

| šamKI-dBABBAR | šam_gud-ra-tum |
| šamKI-dMÉR    | šamKI-dšIS-KI |

OT. xi, 45, i–iv–9, a:

QU-UD-RA | šamKI-dMÉR | šamKI-dšIS-KI | samKI-dBABBAR

(Cf. additional references to šamKI-dšIS-KI as equivalent to ašušimtu, p. 275.)

With šamKI-dMÉR (= gudru) “Earth of the Storm-god”, cf. the following (Ainsworth, in Chesney, Narr. 501) about Kurdish customs near Sulimaniyah: “Two kinds of manna (‘Kudrat halvassi’, divine sweetmeat) are collected—one from the dwarf oak, and another from the rocks, the latter being pure and white. When a night is unusually cool in June, the Kurds say it rains manna, as most is then found.” (Note also that Mr. John Horne, p. 271, says that it is said to be found after lightning.) Qudrat halvā is the name in Persian given by Steingass (Dict., p. 357), for the “manna of the Israelites”, and we may well follow up this clue for our word gudru, šamKI-dMÉR, paralleled by šamKI-dšIS-KI, supalu, manna. It is possible that the Persian kudrat halvāsi, “divine sweetmeat” has its origin in the Assyrian word gudru, and not in the Persian word for “divine”, and if so, we have every right to see “manna” in šamKI-dMÉR, gudru. Similarly, therefore, we may see in the form “Earth of the Moon-god” some form of manna which has exuded in the night, as contrasted with “Earth of the Sun-god”, obtained presumably in the day-time, or at all events, at a later time in the day than the former.

With šamKI-dMÉR, gudru, as the Persian kudrat halvāsi, the manna from the Dwarf Oak, and the other two kinds šamKI-dšIS-KI and šamKI-dBABBAR, we can go on to the important word šakiru, equivalent to šamGURs, and šamKI-dBABBAR. Šakiru has first its connection with the narcotic šamGURs (p. 230): secondly, its equivalence with “manna” suggests at once its connection with the Syro-Persian sekar, saccharum, from the obvious “sweet” use of manna as given in the preceding pages, and this double use of intoxication (šakiru = “intoxicator”) and sweetness indicates that there must be some reference to that fermentation which produces both sugar and an intoxicant. Which has the prior claim of meaning is not easy to say but, at all events, what does arise from this discussion is that our word “sugar” is referable to the Assyrian šakiru, with its meaning both of “manna” and of a narcotic or intoxicant.

(h) šamNIGIN, see (e).

(i) šamGabblulu, strikingly like the late Heb. gablalād “dough”. I doubt whether the word šamEssû, which seems to be “tragacanth” (p. 271) is connected with the late Heb. issâh “dough”, possibly from a flour-like appearance. It is worth noting, however, that a common Persian sweetmeat is wheat-flour kneaded with manna into a thick paste, 1 Unless, of course, gudru represents an ancient form of the Persian.
and also that there are the round cakes made partly from manna from the Astragalus florentulus which are sold in the bazaars (EB. xith ed., xvii, 587).

(j) šamₐ₈AN-ŠIR-LU (not KU, as Deimel and Meissner). Uncertain.

(k) šamₐ₈Si-e(?)-du (var. (?)) šamₐ₈Si-''-du (═ šamₐ₈mal (?)-...), with which cf. (in sound) the Syr. saudâ ‘lime’. šamₐ₈Sèdù, however, is not a certain equivalent for "manna" in the vocabularies, but it is certainly curious that šamₐ₈kakkusₐ₈kku (p. 269) perhaps meaning "pounded chalk" (DACG. 180) is in the šamₐ₈ₐ₈ṣₐ₈umtu-group.

(l) šamₐ₈Šamₐ₈ₐ₈miₐ₈ sirₐ₈pi "drug for dyeing", in connection with oak-manna, might refer to the kermes insect. šamₐ₈Šilₐ₈qi is inexplicable as yet apparently.

(m) Note also the equivalence šₐ₈E-RU-A = supalu (with other equivalences ziqₐ₈pu, niₐ₈ₐ₈lu, šiₐ₈lu, and šiₐ₈ₐ₈lu (D. 367, 126). Leaving šamₐ₈sₐ₈upalₐ₈u as the natural manna directly secreted by the trees, we can examine the following lists which contain words obviously connected.

VAT. 9000:

<table>
<thead>
<tr>
<th>šamₐ₈pi</th>
<th>ZIR</th>
<th>šamₐ₈ṣₐ₈-ₐ₈nu-ₐ₈unu</th>
<th>šamₐ₈ṣₐ₈-ₐ₈miₐ₈ gaggad-a-nu</th>
<th>šamₐ₈pi ZIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>šamₐ₈,</td>
<td>arqu</td>
<td>šamₐ₈DU-DU</td>
<td>šamₐ₈RI-RI</td>
<td>šamₐ₈da-a-a₁</td>
</tr>
</tbody>
</table>

and, further on:

<table>
<thead>
<tr>
<th>šamₐ₈ₐ₈sₐ₈ₐ₈mₐ₈i</th>
<th>GIS-GI</th>
<th>šamₐ₈bₐ₈u-uk-la-nu</th>
<th>šamₐ₈saₐ₈-ₐ₈su₂-ₐ₈nu</th>
<th>šamₐ₈ₐ₈sₐ₈ₐ₈mₐ₈aₐ₈-ₐ₈muₐ₈ bir-bir-ru</th>
</tr>
</thead>
<tbody>
<tr>
<td>šamₐ₈ₐ₈sₐ₈ₐ₈ₐ₈kₐ₈ₐ₈kₐ₈ₕₐ₈ₕₐ₈kₐ₈-ₐ₈yₐ₈ₐ₈kₐ₈ₕₐ₈ₕₐ₈kₐ₈</td>
<td>šamₐ₈sₐ₈ₐ₈ₐ₈mₐ₈aₐ₈-ₐ₈mu₀</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Quotation from Mat. 88, 4, 56, 57:

<table>
<thead>
<tr>
<th>šamₐ₈mₐ₈uₐ₈-ₐ₈mₐ₈aₐ₈ egₐ₈li</th>
<th>šamₐ₈da-a-a₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>šamₐ₈pi ZIR</td>
<td>šamₐ₈</td>
</tr>
</tbody>
</table>

Pl. 38, S. 8, 9-11:

<table>
<thead>
<tr>
<th>šamₐ₈ZIR-ₐ₈ZID-LAL</th>
<th>šamₐ₈zₐ₈rₐ₈qₐ₈aₐ₈-da-nu</th>
<th>šamₐ₈zₐ₈rₐ₈qₐ₈aₐ₈-da-nu</th>
</tr>
</thead>
<tbody>
<tr>
<td>šamₐ₈KIₐ₈-dₐ₈Sₐ₈ₐ₈iₐ₈-ₐ₈KI</td>
<td>šu₂-pₐ₈a-lu</td>
<td>šu₂-pₐ₈a-lu</td>
</tr>
<tr>
<td>šamₐ₈KIₐ₈-dₐ₈Sₐ₈ₐ₈iₐ₈-ₐ₈KI</td>
<td>aₐ₈-ₐ₈Sₐ₈iₐ₈-im-ₐ₈tₐ₈u</td>
<td>aₐ₈-ₐ₈Sₐ₈iₐ₈-im-ₐ₈tₐ₈u</td>
</tr>
</tbody>
</table>

Pl. 28, K. 4345, obv. 1-6:

<table>
<thead>
<tr>
<th>šamₐ₈ₐ₈a(-ₐ₈)ₐ₈-sₐ₈uₐ₈ (-ₐ₈)-ₐ₈tₐ₈u</th>
<th>šamₐ₈pi ZIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>šamₐ₈ₐ₈a(-ₐ₈)ₐ₈-sₐ₈uₐ₈ (-ₐ₈)-ₐ₈tₐ₈u</td>
<td>šamₐ₈sₐ₈ₐ₈ₐ₈mₐ₈aₐ₈-ₐ₈sₐ₈ₐ₈uₐ₈-ₐ₈tₐ₈u</td>
</tr>
</tbody>
</table>

1 Restored from Pl. 38, K. 14087, 1-3, cf. Landsberger, Fauna, no. 335.
Beginning with the group on Pl. 38 (p. 275) which includes ʾām ṣīr qaqqaddānu, along with ʾān-ʾāš-šī ʾāmāʾ “manna”, we can discuss the qaqqaddānu, long supposed to be included among the crickets or locusts, it having been presumed that it was an insect with a large head (Landsberger, Fauna, 124, and following him, my AJSL. 1937, 228). As we saw on p. 270, one of the sources of manna is provided by the puncture of an insect on the tamarisk, the Coccus manni.parus. We can enlarge on this by enumerating these insects:

For instance, the insects on the qavan which produce the gez manna are (a) diminutive red; (b) dark “like the common louse”; (c) a very small fly (Frederick, Trans. Lit. Soc. Bombay, 1819, i, 254 ff.: Ainslie, Materia Indica i, 210, quotes Kinneir for the red kind). The ash-manna of Sicily, gathered in June and July, is supposed to drop in consequence of a puncture made by an insect resembling a locust (Smith, DB. ii, 230). J. G. Myers (Insect Singers 160) says of the cicadas 1 which cause manna to be produced by their punctures, that Donovan, who was responsible “for the charming English popular name applied to a Chinese cicada, namely ‘flea-locust’” writes that cicadas “had been observed to fly among ash-trees, bore many holes in them, and when the manna had oozed out, return and carry it off”. Tancred Robinson (Philos. Trans. Roy. Soc. xxix, 474, quoted ib. 160) says: “coming near Capua, I obser ved a Species of Ash or Ornus on the trunk whereof many Saccharin Concretions were visible. This proved the true Manna, that issues out thro’ the incisions made in this Tree by the Inhabitants of Calabria. Swarms of Cicadas were sucking the Body and Boughs, and perhaps by wounding them made way for fresh Manna.” Usually various kinds of Cicadidae are seen to emit spray or evacuations from the anus while they are feeding (ib. 161). In Australia, the blacks say that the manna produced by Euclyptus viminalis (mannifera) is the excrement of a cicada (ib. 164). In Sinai the manna-producing insects observed by the expedition from the Hebrew University in Jerusalem were (1) Trabutina mannipara Ehrenberg: (2) Najacoccus serpentinus, var. minor, Green: (3) Euscalis decoratus Haupt: and (4) Opsius jacundus Leth. (see Partington, Or. and Dev. of App. Chem., 162-4, a reference which I owe to Colonel Hoysted. Note also the large insect of the locust kind with sword projecting from tail (Rich, Koord. 195).

We are therefore probably on the right track in seeing in qaqqaddānu one of the Cicadae which causes the manna to exude, either by direct puncture, or through its own body, and ʾām ṣīr qaqqaddānu “drug of the seed of the q.” the manna itself, the Assyrians being aware of the peculiar way in which manna might be produced through the body of the insect. This will help us ultimately to an explanation of ʾānmṣuṣītimu.

Lastly, we may trace the meaning of the word qaqqaddānu, relinquishing the theory that it is an insect with a large head or that there is any connection other than phonetic with the word qaqqadu. Professor Hale Carpenter was so good as to show me specimens of C. Mannifera which could certainly not be described as having a large head, and we must seek the explanation elsewhere. It would, therefore, hardly be out of place

1 It is curious that “among English-speaking people the general term is cicada among the better informed, and locust with the masses” (ib. 33). Cf. qaqqaddānu.
to compare the two names *Cicada* and *qaqqadānu* on onomatopoeic grounds, the Assyrians ascribing the same sounds to the manna insect as the Romans and, by a well-known process of folk-etymology, referring the sound to their word for "head" as the nearest philological connection, an exact parallel to the American "katy-did".

We can continue with the words *samāṣuṣintu, samāṣantu*, etc., as they occur in *MT*.

(a) *samāṣuṣintu*: uncertain disease, †, drink, *AM*. 4, 4, 3.


*Int.*: For urinary trouble, one of 37, bray, drink in squeezed grapes, or beer and refined (halṣi) oil, *KAR*. 193, 6. For some anus-trouble or retention, †, bray in oil . . . , and beer, and drink, *KAR*. 157, 41. Uncertain use, against ghostly seizure, *AM*. 97, 6, 12–14.


It is mentioned in *ADD*. 1042 (re-exd.) . . . "PA of pomegranate, PA of grapes (?)", PA of *ti-AM*, PA of mulberry, PA of *samāṣadanu, samāṣantu, samlišan kalbi, samalamū, sam-il-bat, sam-nu-lu-ha, samkasī šar, išeriu, išur-man, išapritu, išgīr (?), qanū ṭābu, ṭimurrī, ṭimūrašu. In *VAT*. 9000 [*samša-mi*] sa-nu-ni = *samša-su-um-tu* (i.e. [a. drug] for scab ).

It occurs in the *VM*:


\[\text{samša-su-um-tu} | \text{ina qaqqad eribi šalmi}\]

i.e. "on the head of a black locust". This suggests our *qaqqadānu*-insect (see p. 276).


\[\text{samšu-si-im-tu}^{1} | \text{ina šarat u₄nU-TIL} \] (preceded by *samšu-uk-[la-nu]*, with which cf. the syllabary p. 275). "On the wool of a virgin ewe" suggests a similarity with the ancient labdanon, which was a gum collected from the beards and thighs of goats which browsed on the cistus in Crete, but such a process appears to have no parallel in Mesopotamia.

*MT*, however, shows that the *samāṣuṣintu*, with its curiously varied forms, is used both into and ext., its outstanding ext. value being against insects, and to drive away supernatural beings, and its int. use (mildly)

\[\text{1 V. samša-su-[um-tu].}\]
for urinary trouble. Its presence in ADD. is important, as showing that it had its use in everyday life. The prescription in MT. "while yet green" parallels izzabur arqu (= izzamī qaggadanu), p. 275.

The first half of the word ażu(su) suggests ażū "go forth", i.e. excreta (as in the instances on p. 276). The second half can hardly contain an original m, because we do not find any form such as ażusīndu (i.e. like sāntu, sāndu): the forms have always mt, nt, or even t, and not nd. If, therefore, we accept ażūtu (not forgetting the possible ażūsitu) as the original, the Syr. sāḏa, inquinavit, sāḏa, immundus, will give us a useful cognate, suggesting then manna which the Coccus ejects through its body.

Continuing with izzamī-GI = izzambuklanu, equally probably a manna, we might infer from p. 255 (where I have suggested that ġīs-GI may have the meaning of thicket) that izzambuklanu is connected with the tamarisk. The tamarisk certainly produces manna (FJ.ii, 3, 40, 3); a cicada of unknown species was found in phenomenal swarms on the tamarisk and "jewassee" bushes of treeless country in Afghanistan (Myers, op. cit., 130, 140, quoting Hay, 1840). But nothing definite can be said about this equivalence. It occurs in MT. as izzamūsa-GI-GI, [drunk] for strangury,†, AM. 59, 1, 56. Cf. also KAR. 185, iii, 9. izzambuklanu is brayed alone and eaten without a meal for lungs (HARpl), KAR. 203, iv, 23 (dup. a new text from Nineveh).

Finally, we can compare the other insects in these sections: VAT. 9000 gives the curious equivalence izzamī-PI-ZIR for izzamsāuntu (i.e. the ejected manna, p. 275), the izzamī-PI-ZIR being taken by Landsberger (Fauna, 25, 334–5) to mean "spider" (Spinner), he having the values izzamī-PISUR, Sūr (“plant-spinner”) and KA-SUR (“mouth-spinner”). These occur in various forms in MT. (see also Landsberger, op. cit., 135):

izzamī-PI-ZIR-DU-DU is one of 16 drugs to be dried, brayed, and mixed in vinegar (and prob. applied ext.) for some form of skin-trouble similar to herpes, pindū, if we may base anything on a recipe two registers lower down in the text AM. 84, 4, iii, 4. izzamī-PI-ZIR is one of several drugs to be brayed and made into a suppository, AM. 53, 1, iv, 3. izzamī-IN-PI-ZIR is one of several mixed in suet of the kidney of a male ox for ext. use on lamṣat hilāti (prob. a skin-disease, AM. 44, 1, ii, 15). Medicinally the Cicadæ are prescribed by Dioscorides (ii, 96, quoted Myers, Insect Singers i, 88) for pains in the bladder; Galen recommends them for colic (ix, 32). Ext. they were used with oil of scorpions for a scorpion sting (Buckton, 1890). Slight vesication appears to have been obtained by experiment (l.c. 190).

izzamī-PI-ZIR-DU-DU must mean "crawling PI-ZIR", just as izzamī-PI-ZIR-RI-RI means "flying PI-ZIR", the latter being equated with izzamī-da-a-a-e, which in its turn = izzamī-mu-ni (rather than ir) eqlī. izzamī-Deie may well, I think, be cognate to the Syr. dāwyāthā, translated "cantharides"; it is less probably connected with izzamī "to spin", as Landsberger suggests. izzamī-MUNI eqlī = "m. of the field"; munu being an insect (Landsberger, 128).

To sum up: izzza-ba-lam, izzabalum is probably the Arab. izzāb, Juniperus excelsa M.B.: its turpentine (izzspalu, and not improbably
(4) "puprapu (Meissner, MVAG. 1913, 2, 17, 24), is or is "puprapu, long identified with the Arab. disfrän, Juniperus drupacea Labill. (M.A. 264), in North Lebanon, Anti-Lebanon, and Mar'ash (F.J. 3 i, 33 : FP. 3 ii, 800), the ancient habitat being Amanus (with cedar, cypress, and pine (Anp. AKA. 373, 89): mentioned with ivory, "sašū (willow), "urkarinnu (box), mulberry, cedar, cypress, and "butū, to build Sargon's palace (Sargon, Oyl. 63). Common in buildings in the late Assyrian empire, but not before the first millennium B.C., which its Sumerian "equivalent," dipra-an (obviously as a word taken from the Assyrian) may confirm. It occurs as dpn in the Ras Shamra texts (Virolleaud, Glecs. 1, iii, 1898, 24). In Indian medicine its fruit and oil are carminative, stimulant, and diuretic (IMP. ii, 1227), emmenagogue, used for dropsy, and the powder rubbed on painful swellings (BMM. 513).

It occurs thus in MT.:

(1) Simply, ext.: Breast and loins, †, prob. poultice ("[dpr][an])], AM. 51, 5, r. 8.

Enema: †, prob. AM. 41, 1, iv, 1 ; †, 1 shekel, "dpranu, AM. 41, i, iv, 12.

(2) Seed: Ears, †, fumigate ("dpr[an])], AM. 33, 1, 26.

(3) Oil, Ears, †, insert ("dpr[an])], AM. 35, 2, 6. Suppository: make a "lam-mar (suppository, p. 247), sprinkle it with oil of dpranu, put it into his anus, KAR. 203, ix-vii, 10. dup. Nin ?

(4) zir (powder): †, [anoint], ("dpranu], KAR. 90, r. 19.

In the mythical figure, Ebeling, Tod. 47, 10, "dpranu represents the kisilla (for kisilla, loins).

E. "šinig, bēnu, Tamarix orientalis Forsk., tamarisk.

The characteristics of "bēnu coincide well with the old identification with the Syr. bēnā "tamarisk" (cf. 'ēsel for bēnā, F.J. ii, 399). It was used for fuel (AM. 37, 10) as in Baghdad to-day (F.J. ii, 399). The length of the poles (in the 3rd dyn. of Ur) measured 6, 5, and 3 cubits, as contrasted with the 12, 11, and 7 of the "ši-kū (fir) (De la Fuye, RA. 1919, 4, 7): 7½ in Shulgi's time (TURk. 35), 10 being worth a shekel); but 20 cubits is once cited (De Genouillac, ITT. v, 3). From the wood could be made dishes or forks, spindle whorls, shepherds' staffs (or crooks) (respectively Ebeling, MAOG. ii, 3, 9, 23: KAR. 223, 2 : Ebeling, ib. 14). It was apparently hollowed or pierced ("šinig ud-da-kud-da = bēnu

1 I see that Herr Ebeling adopts my view about idgurutu (idguru) as "needle" ("fork") (DAOG. 129). But "triš must also mean "dish" (cf. the forms in D. 377), and in AM. 80, 1, 10, 32, drugs are to be drunk in a "triš of tamarisk.
nahir (Meissner, *MAOG*. 1925, 2, 26, ii, 3; cf. Meissner, *Supp*. 64). Even ceremonial daggers might be carved from it (*ina patru *bīnī talapattat), Ebeling, *Tod*. 67, 8, *KAR*. 245). Small figures are fashioned from it, or perhaps from its gum (Maqlū iv, 39: *KAR*. 80, 10, parallel to figures of wax and cedar: *BBR*. 148, 47) and bašme (serpent, *AM*. 101, 2, iii, 4) and suh-ḥa (a kind of fish, ši. 8). The tertienna was drunk in a virility charm (Liebesz. 52, 12, cf. 20).

In *MT*. *bīnī* is prescribed:


**Int.:** Hand of Ghost, †, drink in beer, *AM*. 76, 1, 16 (*iššīnu*): †, . . . in wine drink, 97, 6, 3 (*iššīnu*). Sorcery, one of 32 in wine or beer drink, *AM*. 89, 1, 2 (*iššīnu*).

It is constantly used in ritual washing, the ash probably being intended, e.g. in a virility charm, †, rub on body (Liebesz. 43, r. 3) for a full discussion see sam-naṣṭaku.


**Fumigate:** Eyes and temples, †, *AM*. 12, 4, 7 (*iššīnu*). Ghost, †, *AM*. 95, 2, 1 (*iššīnu*), dup. 99, 3, r. 6 (*ibi-nu*): *AM*. 99, 3, r. 9 (*ibi-nu*), 13 (*ibi-nu*). Uncertain, †, *AM*. 94, 2, 12 (*iššīnu*).

3. PA (tops): ext.: Mouth, poultice, *AM*. 24, 5, 8 (*ibi-nu*). For bubul on feet, alone, bray, apply in cedar-blood, *AM*. 75, 1, iii, 20 (*ibi-nu*). Head, †, *AM*. 1, 2, 19 (*ibi-nu*). Swelling, †, *AM*. 73, 1, 12, 23 (*iššīnu*), bind on, ši. 33 (*ibi-nu*). Venereal, introduced by tube in penis, †, *AM*. 58, 6, 7 (*ibi-nu*). (Cf. *AM*. 52, 1, 12 (ra (?) *iššīnu*.)


**Quantity:** 1/3 qa, *AM*. 53, 4, 4 (*ibi-nu*).

**Fumigate:** "Poison," † (including "seed of šu-nu"), AM. 91, 1, 7 (šu-nu).

(5) **Water:** as medium for other drugs, for temples, drink, AM. 14, 5, 4 (šu-nu). Eyeg., with .datu misi, AM. 14, 3, 8 (šin). According to a line quoted in the colophon of the series URU-AN-NA: mal-ta-kal, the "water" of the šu-nu was called "lion's blood" (see Introd. Note to this book).

(6) **Hilu (gum):** A-DAN šin, wrap in goats-hair, put on neck, KAR. 203, i, 29.

(7) **Isbu (root):** Gurastu (itch, scab, or similar), with root of šambar. HUS, etc., AM. 17, 1, ii, 6.

(8) **Kamunu (lichen) in VM. (JRAS. 1934, 776): šamšamun (šu)bini 
ina abangabi (the var. for šamšamun šu-bini being [šIN]-TIR-sar bi (!)-ni in Mat. 88, 1, 40. Here, the well-known meaning for kamunu "lichen", and its association with alum, suggests its use as a mordanted dye. The lichens in use in dyes grow on various trees, but I have as yet found no mention of one of tamarisk (see JRAS. 1934, 773). On the other hand BRP. iv, 37, 22 (JRAS. 1924, 456) [kamun šu-bini ša ina (?)] isid šu-bini usšu šanš šamšamun šu-bini : abangab (u): "[Lichen of tamarisk which on (?) the root of tamarisk springs forth, or alternatively, kamun šu-bini is alum.] This bears curiously on one of the problems of the Vade Mecum which not infrequently (but by no means always) contains in its right-hand column one of the well-known equivalents for the drug in the left-hand column.

Other mentions of the tamarisk occur in the well-known dialogue between the tamarisk and palm, in which each vaunts its own superiority (Ebeling, MAOG. ii, 3), and there is also the poetical couplet, CT. xv, 27, 42 (Zimmerm, Sum.-Bab. Tammuz-Lieder, 235). "In a šarbatu (willow)-tree he lies, sated with woe, in a šin (tamarisk of the water?) he lies, sated with mourning." The tree is also given as a simile for the hair of the mythological being in Ebeling, Tod. 47, 9, and there is a ritual in which a virgin kid is given it to eat, Ebeling, MVAG. 1918, 27, KAR. 42, 21.

For the problem of hashušu abi "apple of the grove", as probably (tamarisk galls), see p. 255.

In medicine, Pomet (HD. 64) says that the bark, root, leaves, and flowers are all used in physic for obstructions of the spleen, mesentery, dysmenorrhœa, and melancholy humour. The manna 1 is used in India as a mild aperient, expectorant, and detergent (BMM. 168): Diosc. i, cxvi, says that the root is used for feet (and incidentally that cups are made from the trunk).2 LPG. 441 says that a decoction of the bark of tamarisk is prescribed for catarrhal affections, gout, and dropsy. In Syriac medicine (SM. vide Index) tamarisk is used under the name māriqā, †, for eyes (SM. ii, 90, 103), the leaves for mouth and teeth (ib. 184), the seed for spleen and liver (ib. 465), fruit for looseness of the bowels (ib. 487).

The galls of T. gallica L. (Arab. tafâf) are used int. for diarrhœa and dysentery, and locally to ulcers (WPI. 29). In India, the galls of T. orientalis are regarded as highly astringent, and as a tonic, in chronic.

1 A good description of the tamarisk manna is given by Pilter, PSBA. 1917, 156.
2 I.e. the same as orš-š, p. 279 n. 1.
discharges, watery fluxes, and leucorrhoea, and as pessaries (BMM. 168).

The tamarisks which are found in Syria-Palestine are *T. pentandra* Pall. (Heb. 'esel), *T. mannifera* (Ehrenb.) Bunge (T. gall. var. mann. Ehrenb.) (Arab. *hatab ašmar*), and *T. orientalis* F. M. B. (= *T. articulata* Vahl., Arab. *athl*) (the tamarisk of Babylon (FP.2 i, 223 ff.). Ainsworth (Res. in Assyria 124 ff.) remarks that “the common tamarisk [of Mesopotamia], the *Athleh* or *Atle* of Sonnini, is the *Tamarix Orientalis* of *Forskål* (*Flora Ägyptiaco-Arabica* p. 206). The solitary tree of a species altogether strange to this country (Heeren, *Asiatic Nations* vol. ii, p. 158) and which Rich calls *Lignum Vitæ*, found growing upon the ruins of the *Kašr at Babylon*, and which has been supposed to be a last remnant or offspring of the sloping or hanging gardens, that appeared to Quintus Curtius like a forest, is also a tamarisk, but it differs from the *athleh* in its size, being a tree, in having scaly branches and long, slender petioles, which are burdened with leaves, both of which may have been produced by a scanty supply of water and great age”. He mentions that tamarisks began at Balis, coming down the Euphrates (ib. 48), and below Rakkah (ib. 69) he speaks of the “eternal jungle of tamarisk”. The tamarisk grows to 20 feet high in Persia and Arabia (PC. xxiv, 1842, 24), to 25 feet in Mesopotamia (Ainsworth, quoted FJ.2 iii, 399: PC. iii, 1835, 268).


1. (*i*(*i*)*q̲ erin, erinu, Cedrus Libani Barr, Cedar.
2. *išerīn *bad, *šupāhru, an uncertain form of the above.
3. *išerīn-par(-ra), liðru, Juniperus oxycedrus L.

*išerin* has long been equated with the Heb. *šerîn*, usually accepted as cedar (but *FP*.2 ii, 797, *Pinus pinea* L., and *FJ*.2 ii, 121, Lorbeerbaum).

As far back as Naram-Sin: “as far as Bāraḥīs and Subartu, as far as the forest of *šerēn* ” (*Gadd-Legrain, Ur Excav., Texts i, 72 = Amanus, cf. 75). It is to the *qiššu sa išerin* that Gilgamish and Engidu go (GE. v, 1). Gudea speaks of the “Mountain of *erīn-na* ” (*ISA*. 154, 19: cf. *ib*. 200, G, 10). The wood was used for building in the Agade-period (“a house of cedar”, De Genouillac, *ITT*. ii, no. 4, 4582): in late Assyrian times a letter (*ABL*. 464, 3) mentions “beams of *erīnu* for Babylon, Sippur, and Kutha for the roofing (*gallulu*) of the temples”. Nebuchadnezzar boasts of cutting one down in the Lebanon with his own hands (Pognon, *Wadi Brissa* iv, 4), and speaks of bringing *erinim dannūtim* from the same district (1 R. 66, iii, 36). Nabonidus brought beam(s) (“the product of Amanus”) to Harran (V R. 64, ii, 10), and Darius brought the wood from Lebanon (Herzfeld, *Arch. Mit. aus Iran* iii, ii, 39). The height of this tree is no little evidence for the equivalence “cedar”, as mentioned by Gudea “sixty cubits” (“sixty cubits” from the Amanus, *ISA*. 109, 28): “its height [that of the cedar] in this country [England] has seldom equalled the taller of the larches, though it has nearly approached to it.”
Trees and Fruits

(VK. 473). *dippi* (planks or tablets) ša *šerinim* are mentioned on an OB. letter (Kraus, MVAG. 1931, Altbab. Briefe 4, no. 3). *šerinna* is on the Ras Shamra tablets (Thureau-Dangin, Syria, 1931, pl. xlvi).

The gum (less probably the wood) of *šerinu* was also used as a material for small figures in magic (along with others of clay, dough, fat, bitumen, and what must be *šēnu*, tamarisk, KAR. 80, 10). The barū-seer bears a branch of it (rather than a wand, BBR. no. 1–20, 70, 119: no. 11, 4: the crude little picture of a man on the bowl from Nippur with the Hebrew incantation holds an obvious tree-branch in his hand, Hilprecht, Expl. in Bible Lands, 447). *šerinu* was also used for making the pegs of a drum (Thureau-Dangin, R.A. 1920, 66, 27): a *pisannu* of *šerinu*-wood was sent by Amenophis IV to Burnaburiash (TA. i, 111, 17).

Its fragrance was famous, e.g. in V R. 51, b, 15, iā *šerinna = i-ri-š e-ri-ni* 2 (cf. also the lidru, p. 285, and šurmēnu, p. 286). Like mastic, *šerinu* was chewed (iwa'as) by priests to make their breath sweet (BBR. 112, 6, 17), which confirms that the *šerinu* used in making figures for magic, quoted above, must be the gum, not the wood. An omen is drawn from *šerinu* being given as a gift apparently in a dream (TR. ii, 23, 2).

Its value in incense is equally well known. Amounts of cedar-"blood" (Salmaneser iii, KAV. i, 78, 1) are quoted for the Temple of Ashur, and various other gods, and the same king records tribute of logs and "blood" of cedars from *šarinu* "at the foot of the Amanus Mountains" (Mon. ii, 119). 15 mana of *šerinu* was worth 1 1/4 shekel of silver, approximately, in the period of Sargon I, but not later than 1950 B.C. (Gelb, Inscr. from Alishar, 55). Gudea speaks of "oil of *šerinna*" (ISA. 163, xx, 20). In the VM. it is possible that there is an instance of the tree or drug (Pl. 42, K. 4163, 1 and [K. 8807, 1]: Pl. 27, K. 4431, 1: and an unpublished text):

\[
\begin{align*}
\text{šamerinu (†)} & \quad \text{ina zībat šikkī} \\
\text{"Cedar (†)"} & \quad \text{in the tail of a cat} \\
\end{align*}
\]

Presuming šamerinu to be correct, it is difficult to suggest any meaning for this: "tail of a cat" may be an alchemists' synonym.

To-day, the cedar of Lebanon (C. Libani Barr., Pinus Cedrus L., Abies Cedrus Poir.) is found in Libanus, the Cilician Taurus, 1,300–1,828 metres above sea-level, Amanus, and in the Anti-Taurus, up to c. 1,300 metres (MPB. ii, 111: VK. 471: EB. xith ed., v, 595: FJ. ii, 17), so that the modern habitat coincides well with that of the *šerinu*. In addition to our references above, ii R. 51, a–b, 3–4, gives the habitat as Amanus and Ḫaṣur; Ṣurpu ix, 42 ff., also gives its provenance as the Mountain of Ḫaṣur, and says that its fragrance "fills the land". "The wood, bark, cones, and even leaves of the cedar are saturated, so to speak, with resin. The heart has the red cedar colour, but the exterior is whitish . . . for ordinary architectural purposes [the wood] . . . is perhaps the best there is in the country." (LB. 199). The resin is said to be similar to mastic, and the manna is a sweet exudation of the branches (EB. ib).

1 Of *šerinu* which appears to vary with lušku as a sacrificial fragrance in incense, Thureau-Dangin, R. Acc. 119, 21, 27. The fragrance of *šerinu* is compared to that of *šāsuri* by Tlgath-pileser iii, II R. 87, 76.
The following are the uses of *i~eriu in MT.:

1. Simply: ext. Temples, †, CT. xxiii, 44, 2. Ears, †, insert, AM.
2. Simply: ext. Temples, †, CT. xxiii, 44, 2. Ears, †, insert, AM.
3. Simply: ext. Temples, †, CT. xxiii, 44, 2. Ears, †, insert, AM.
4. Simply: ext. Temples, †, CT. xxiii, 44, 2. Ears, †, insert, AM.
5. Simply: ext. Temples, †, CT. xxiii, 44, 2. Ears, †, insert, AM.
6. Simply: ext. Temples, †, CT. xxiii, 44, 2. Ears, †, insert, AM.
7. Simply: ext. Temples, †, CT. xxiii, 44, 2. Ears, †, insert, AM.

Int.: Stone in kidney, †, drink, Lutz, AJSL. 1919, 81, 56 ff.

Quantities: Stomachic (constipation ?), †, mana, †, AM. 43, 5, 9 (dup. AM. 7, 7, 11 ff., and 56, 1, 12, RA. 1929, 73). Uncertain purpose, 4 shekels with small quantities in carats of others, AM. 41, 1, iv, 12.

Fumigate: Ears, †, AM. 33, 1, 31 (dup. AM. 35, 1, 7, and 38, 2, r. 9).

Use uncertain (ext.?): Cough, with mercury (IM-KAL-GUG), †, including kidney-fat of a sheep, AM. 80, 1, 19.

(2) Cedar-"blood": ext.: Ears, mixed with pomegranate-water, inserted, AM. 33, 1, 40: †, inserted, AM. 35, 3, 4: 37, 2, 4. Itch or scabies in head, anoint, and then apply 29 drugs, AM. 1, 2, 16. Temples, AM. 103, 1, 17: Weak hair, reduced in fire with “carobs of the north”, anointed in cypress-oil and cedar-blood, CT. xxiii, 35, 41.


(3) Oil: Itch in head, mix with sulphur and apply, AM. 1, 2, 8. Head, †, AM. 4, 2, 5 (cf. 7, v. himetu-ghee): †, anoint, KAR. 202, ii. 34. To dye hair, mixed with alum and Anthemis, AM. 5, 1, 4. Ears, † (probably), AM. 36. 133: 37, 2, 6, 9: 105, 1, 13 (dup. 35, 5, 5). Eyes, †, AM. 10, 3, 30: †, 14, 1, 2: 16, 1, 24. (Probably) temples, on wool, †, AM. 4, 6, 5. Nostrils, †, AM. 26, 1, 4. Nose, †, AM. 26, 2, 5. Feet, †, AM. 69, 2, 5. Urinary trouble, alone, mixed with vinegar, introduced by bronze tube through urinary passage, Lutz, AJSL. 1919, 81, 48.

Fumigate: Nostrils, after cleansing mouth, alone, AM. 54, 1, r. 9.

(4) ZID (powder): Ears, steeped in beer, AM. 34, 5, 4.

(5) Ash: with “run” honey (dišpu šešlam, i.e. bakêš, D. 544, 2) to apply to feet, AM. 75, 1, 22. For some female disease, bray alone (and put in uterus, l. 28), KAR. 194, iv, 22.

(6) Manna: The manna exuding from the branches is indicated by the value of supalum for *i~ERIN (CT. xviii, 3, 22).

(7) Šamšil *i~erini = šamqatranu, VAT. 9000 (p. 247).

It would be unnecessary to repeat the uses of turpentine and resin in medicine (see p. 259), but in addition to this we can add that IMP. ii, 1337, says that C. Libani Loud is closely allied to C. Deodara Hook, which yields a coarse, very fluid turpentine, prescribed in India for ulcers and skin diseases, and Pliny (NH. xxiv, 11) speaks of an oil extracted from the cedar.

Two words representing parts of the cedar can be discussed here:

1. UKUS *i~erini “capsule of the cedar”, in an amulet for securing

As the Assyrian would be likely to choose black as the colour to dye his hair, the A. tinctoria L., which dyes yellow, would be out of place (PC. s.v. Anthemis); unless, of course, he followed the modern Moslem practice of dyeing reddish-yellow.
the favour of god or goddess, consisting of sāndu-stone, lapis, musū (copper or iron sulphate), lime, iron, male copper, hæmatite, and ukūš  
*šer清新 (KAR. 213, iv, 28-9). Ukūš is the capsule of the poppy or the squiring cucumber (p. 81), and a picture of the cedar-cone, short and squat, and not the elongated cone of the pine, suggests that this may be the meaning of ukūš here.

(2) Kakkultum = *šer清新 dišutum (Von Soden, ZA. 1936, 239). In its relation to cedar this word dišutum might be connected with the Heb. dālīyāṯ “branches”, used in relation to vines or cedars. *Šer清新 dišutum, CT. xviii, 16, Rm. 348, r. 10, is followed by [d]a-al-tum “a door”. Kakkultum is curiously similar in sound to the Greek κόκκαλος, the kernel of the στροβόλος (the pine-cone). On the other hand, the Arab. koklan means juniper-berries in Kurdistan (FJ. iii, 36, quoting Seetzem), or Juniperus oxycedrus (ib. 801), so that we may have to include this under *šer清新-PAR-RA, which is probably the latter (see below).


It occurs in MT. thus:
_Singly: ext.:_ Temples, †, poultice, CT. xxiii, 39, 7, dup. KAR. 188, 4. _Muscles of hands and feet, †, in lotion, AM. 98, 3, 13. _Blains (šiggûtu), †, bind on, AM. 32, 5, 14. In lotion, †, AM. 94, 2, i, 10. _Fumigate: “Poison,” †, AM. 91, 1, 14. _Enema: †, AM. 56, 1, 5: cf., †, Kû. ii, iii, 8. To identify it is difficult, as the Sumerian *šer清新-BAD suggests little: BAD might mean labiru “old”, adaru “be dark”, or imdu “erect” (D. no. 69).

3. *šer清新-PAR(-RA), liₜru, Juniperus oxycedrus L. *šer清新-PAR = ti-ia-lu (Meissner, MVAG. 1913, 2, 21, 42): *šer清新-PAR-RA = ti-ia-ru (CT. xvii, 38, 39) and *šer清新-PAR-û (doubtless the same) = ti-ia-ar (CT. xviii, 3, 24) (*šer清新 itself = ti-ia-rum in l. 23). The form *šer清新-PAR 2 occurs on a brick of Enannatum I, and on Gudea’s Cylinder A, xxii, 4 (ISA. 52 and 164) which Thureau-Dangin considers to be an equivalent of liₜru. As was pointed out on p. 283, liₜru is a fragrant wood from which doors could be made: it does not, so far as I know, occur in MT. (although in incantations, CT. xvii). Liₜru, as the “white cedar” must surely be the Arab. ‘ar’ar, Juniperus oxycedrus L., which grows in the Lebanon and Palestine (FP. ii, 801) and produces “cedar oil”, official in most European pharmacopoeias (EB. xith ed., xv, 557). It occurs in Sennacherib, Luck. 129, 60; 132, 71: Esharh., PE. pl. 16, iii, 27; Ashurb., Streck 503.

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1 With variants ti-ia-š-la : ṭu (Von Soden, ZA. 1936, 165.
2 Cf. *šer清新-PAR-PAR-RA, Langdon, Bab. 1911 (iv), 42.

(Note a tree *ṣe-ra-šum*, quoted near *iššur-maš*, *ISA.* 155 (Gudea, *Cyl.* A, xv, 33).

G. 1. *iššur-maš, šurēmu, Cupressus sempervirens* L., Cypress generally, and thus doubtless *C. horizontalis* (Mill.) Gord.

2. *iššur-maš* (endu), *Cupressus sempervirens* L. (the Cypress of the cemeteries).


The tree produces a resin but no turpentine (*EB.* xiiii, vii, 693); and its leaves an essential oil and *tannin* (Fée, quoted Bostock, *Pliny*, *NH.* xxiv, 10): the nucis, cortex, and lignum Cupressi "waren früber bei Brustleiden und Diarrhoe officinell und sollen noch jetzt in Oriente angewendet werden" (*MPB.* ib.). Pliny’s prescriptions (l.c.) agree with *MT.*: the leaves are drunk in infusion, they stain hair black with vinegar, and are used in poultices for pains in the feet, etc.; the "excrescences" are applied to gatherings, and are drunk for hernia; the root and leaves are drunk in infusion for strangury. The oil was also used (*NH.* xxiii, 45).

Note the mythical text, Ebeling, *Tod* 47, 9, *iššurēmu lan-[šu]" the cypress is [his] stature" (i.e. erect).

It occurs in *MT.* thus:


Incense: *iššur-maš* alone and distinct from *iššubarušu* in a different censer at the same time, *KAR.* 184, 41.

\text{Int.:} Lungs, drink and the patient *iparris*, *AM.* 83, 1, 16.

2 Oil: Hair, †, anoint, *CT.* xxiii, 35, 41. Ears, sprinkle on brayed salt on wool, and insert, *AM.* 34, 1, 3: †, insert, *AM.* 37, 2, 6, 9. *Stomach,*

\footnote{Does this account for the persistent use of "as determinative with SUR-MAN, and not "š, in contrast to "šbarušu"? Note, however, that imdu may have the determinative "š".}
with blood coming into the mouth, †, anoint, AM. 42, 5, 10. Limbs (flesh), †, anoint, AM. 92, 1, 5. Against enmity in charm, anoint with other (pleasant) perfumes, AM. 87, 1, 7. As medium, AM. 90, 1, iii, 6. In suppository, made of various drugs and fat, sprinkled with oil of ʿšūrman, KAR. 157, r. 34.

(3) PA (tops): ext.: Feet, †, apply, AM. 68, 1, 7, 20.

(4) ZID (powder): ext.: Head, for weak hair, †, bind on (10 shekels), CT. xxiii, 33, 10. Blains (ṣiqāti) with 45 others, bind on, KAR. 192, r. 2, 54.

This species of Cypress must be distinguished from the next (b), ʿimdu, which is specially the cypress of the cemeteries, a form of C. sempervirens.

2. (tėth) ṣimdu, endu, a Semitic word, as the forms im-du, im-di, and en-di show, apparently without Sum. equivalent. Ṣimdu suggests the Heb. ʿammūḏh "pillar" i.e. with reference to the erect nature of the tree: the identification as "cypress of the cemeteries" is completed by the Assyrian definition "imdu of the grave". "In Turkish cemeteries the cypress is the most striking feature, the rule being to plant one for each interment": "a tapering flame-shaped tree resembling a Lombardy poplar" (EB. xith ed., vii, 693). It has always been associated with cemeteries (Chesney, Exp. i, 379): cf. PC. viii, 1837, 233: "C. sempervirens, the common upright cypress... the gloomy air it imparts to the situations which it occupies... C. horizontalis, the spreading cypress, is a far handsomer species." Pliny (NH. xvi, 60) says that the cypress is sacred to Pluto, and hence used as a sign of mourning.

(tetra) ṣimdu is used in MT. thus:

(1) Simply: ext. Temples, †, bind on ([10 shekels]), CT. xxiii, 45, 7, dup. KAR. 190. Blow (mišitti), †, poultice, AM. 79, 1, 24. Swelling †, apply, AM. 73, 1, 4. Opening of sore, †, anoint, AM. 40, 5, 7. Int.: Urinary trouble, †, drink, Lutz, AJSL. 1919, 80, 1, 20. (Uncertain part), AM. 75, 1, iv, 15.

Quantities (see above): 1 šū ʿteen-di, AM. 41, 1, 25, as distinct from 1 shekel of ʿteen-di, ib. 14: 2 šū ʿteen-di, Ebeling, Tod 89, 3.

(2) Oil: ʿlā ʿrėndi, AM. 41, 1, 30, as distinct from ʿlā ʿrēndi in l. 7: ʿlā ʿrēndi gabrim ("of the grave"), for grey hair, †, anoint, AM. 4, 1, 5 (cf. ʿlā ʿrēndi gabri, ib. 9).

Note the ritual KAR. 146, i, 18: 3 liš ʿrēndi id-dan (and ii, 8, and r. iv, 10).

For Cypress in medicine see p. 286.

H. ṣharr, kiškanū, Acacia (?)

There are several species of this: ṣharr, the simple kiškanū, ṣharr-par, paša "white", ṣharr-gic, ʿalimu "black", ṣharr-dir, ᵇamu "red", ṣharr-dar, barrumu "two-coloured", ʿsig-ṣig, ar(v. ir)-gu "yellow (or green)", ʿmaš-ḥarr, ʿišh (v. si-ih)-pu, and finally (the same section) ʿiš-gic, ʾissu ʿalimu "black wood" (tree). (Meissner, MVAG. 1913, 2, 14, 7–13: Mat. 1, i, 3–10: ib. 3, 7–13. Cf. the group, Mat. 89, 6–9:...
I was certainly wrong (Devils i, 201) in suggesting "astragalus", and Albright was right to challenge this (AJSL. 1919, 194) on the grounds that the astragalus would not grow in the "swamps near Eridu". Langdon (JRAS. 1928, 843) recapitulated the text of CT. xvi, 46, 183-204, on which I had based my identification, adding a Sumerian text from Susa. He attributed a Sumerian origin to the word (giš-KIN), and finally disposed of its identification with astragalus by showing that a chair was made from the wood (from an unpublished tablet). Meissner (Or. Inst. Univ. Chic. i, iv, 41) tentatively suggested a comparison with the Armenian kask, kasken, chestnut, but chestnuts at Eridu are impossible.

The incantation-text quoted above which describes the kiškanū šalnu “black k.” says that it springs up in Eridu, with a blue appearance, stretching forth to the sea “its chamber is the bed of ʾID (the River),” it casts a shadow like a forest, and none enter. That is to say, it is a tree growing by the waterside in the tidal districts of S. Babylonia at Eridu. Nowadays nothing in the nature of a tree grows at Eridu, since the canals have long since ceased to exist, but it is not unreasonable to say that Basrah admirably represents Eridu topically to-day, and that the tidal canals there are thickly fringed with palms, with Ceratonia (*harubu), and acacias (cf. Ainsworth,1 Res. 124). The question is whether the kiškanū can represent the Acacia.

The Syr. qammūz ukkāmalu “black gum” is supposed to mean that of the acacia, and Bar Bahlul (see FJ. ii, 390) thinks that this is so, because the ripe fruit and the gum are black.

Pliny (NH. xiii, 19) describes the A. Nilotica L.: “No less esteemed, too, in the same country [Egypt], is a kind of thorn, though only the black variety, its wood being imperishable in water even, . . . on the other hand the white kinds will rot very rapidly.” Several species besides this grow in the Near East: e.g. A. tortilis (Nubia, Kordofan, and Arabia, and esp. Mt. Sinai): A. Seyal (Upper Egypt, Nubia, W. Arabia): A. Senegal (Arabia and the interior of Africa): A. Julibrissin (a native of Persia and the Levant, with clusters of lilac flowers) (PC. i, 60). The white might be A. albida Del. (Arab. sunf, FJ.2 ii, 387): there is a variety with yellow flowers, A. Farnesiana (L.) Willd. An acacia with yellow blossoms is very common in Basrah.

The passages hitherto quoted for the use of *kiškanū in MT. are of little value: Kū. iii, 1, 40 (giš-KIN(ΔAK) . . . ) which is thus quite uncertain: and CT. xi, 13, 40, prescribes “snake-skin, bark of *HAR-qīc (black kiškanū), bark of *HA-LU-ŪB (willow) . . . ” to be fried together. The third passage is the incantation text cited above, with very doubtful usage.

1 He speaks of acacias occurring as far north as Hawisah and the Karun, and of A. spinosa in the valley of Gok Irmak (ib. 132, and Roy. Geog. Journal ix, 1839, 258).
I Pisan + gi še 'išHar “a basket of še (grains) of kiškanū” (Pinches, Amh. Tab. 7, r. 1) may be the gum arabic (dry) in pieces, or perhaps the seeds from the pods.

The great objection to identifying 'kiškanū with Acacia is that one of the common products of this latter is gum arabic, and we have no suggestion that any ħāl 'kiškanū exists. Yet it is difficult to find a more suitable equivalence, for, having regard to the locality, the colours of the tree, and the profusion of the Acacia in S. Babylonia, the number of possibilities is very limited. Moreover, ħāl 'u-gīr “gum of thorn”, p. 180, is obviously a proper word for it. IB. 1407 gives many remedies from gum arabic.

I. 'Tu-tubu, 'idulbu, Platanus orientalis L., plane-tree.

'Tu-la-tu-im, Gudea, Cyl. A, xv, 32, ISA. 155; from the mountain of Ibla, ib. v, 57, ISA. 109. Sargon mentions 'idul-bu growing with 'surathu near the city Ulḥu (in Urartu, HC. 35, 206). Rare in MT.: pa 'idul-bi, to bathe flesh, AM. 52, 5, 8. Long identified (Jensen) with Syr. dulbā “plane” (MA. 1161: ISA. 109), Platanus orientalis L. occurs in the wooded mountains of W. and S. Asia Minor, and reaches a great size in Mesopotamia (Pf. iii, 64, 65). It is used for doors in Persia (Sykes, Hist. of Persia, 2nd ed., i, 29).

Meissner, MVAG. 1913, 14, 2 ff., dup. Mat. 3, 2 ff.:

| 'išSI | šIR | ūšu-ū | sa-mu ²lu ³ | ħa⁴lu-up⁵pu⁶ | ša⁸kul⁹lu³ | ta-ra-du-ū |

Mat. 89, 2 ff.:

| ... | ūšu-ū |
| ... | nap-pa-šu |
| ... | sa-mu-lu |
| ... | ħa-lu-up-pu |

Note also K. 165 (Bezold, Cat. i, 44):

'ishku: 'išSI
'shir: 'iša-mul
'miš-mā-kān-na

1 ff. Variants from Meissner’s no. 2, K. 4257, etc. (ib., p. 11) and Mat. 3: ¹ Mat. e.
² M. 2, mul, Mat. mel. ³ M. 2, lum. ⁴ M. 2, šu. ⁵ Mat. omits. ⁶ M. 2, pi. ⁷ Mat. gīr.
⁸ M. 2, šak. ⁹ Mat. ša-ul. ¹⁰ M. 2 omits: Mat. ["ša] ofa ši₃₇-si₃₇ = šar-pu."
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(2) Seed: ext.: Blains (siggati), poultice, AM. 93, 2, 9, dup. AM. 44, 1, 11, 15. For ašši (appetizer) alone, anoint, KAR. 203, 63 (cf. zir itusši of Sargon, Winckler, Keils. 20, 98).

Int.: Strangeur, [drink], AM. 9, 1, 39: urinary trouble, KAR. 193, 5: urinary trouble, alone in rose-water and milk [fill the interior of the penis], AM. 62, 1, 11, ii, 8. Female diseases (prob. menorrhagia), fry, bray alone, insert in uterus on wool, KAR. 194, r. iv, 24.

(3) zid-zid (powder): Ich (kuraru) in head, bathe in rose-water, AM. 5, 5, 7.

1 It occurs thus in MT.:


2) Seed: ext.: Blains (siggati), poultice, AM. 93, 2, 9, dup. AM. 44, 1, 11, 15. For ašši (appetizer) alone, anoint, KAR. 203, 63 (cf. zir itusši of Sargon, Winckler, Keils. 20, 98).

Int.: Strangeur, [drink], AM. 9, 1, 39: urinary trouble, KAR. 193, 5: urinary trouble, alone in rose-water and milk [fill the interior of the penis], AM. 62, 1, 11, ii, 8. Female diseases (prob. menorrhagia), fry, bray alone, insert in uterus on wool, KAR. 194, r. iv, 24.

(3) zid-zid (powder): Ich (kuraru) in head, bathe in rose-water, AM. 5, 5, 7.

1) It occurs thus in MT.:

It occurs perhaps in De Genouillac, ITT. v, 3: mentioned by Gudea as coming from a mountain (Cyl. A, xii, 6, 7: cf. xv, 16): as from the mountain of Meluhja (Stat. B, vi, 26): frequently in Tell el-Amarna tablets (from Karduniyash, Bezold-Budge, Tell el-Amarna, no. 4, 28: from Egypt, T.A. i, 77), from the Mediterranean coast (Anp., AKA. 373, 88: probably also Sargon ii, Khors. 149), and also from Mustaš (between L. Van and L. Urmieh, Sargon, HC. 53, i, 353). Used in building (Sennacherib, Luck. 96, 79): from Sidon (Esarhaddon, PE. ii, 76): used in building (Nebuchadnezzar, usš without det., NBK. 138, 11).

In Tallqvist, Maqši iii, ill. 175 ff., p. 28: (175) eššā kima nāniti-a ina maš-e-a (176) kima šaši ina rušumti-ta (177) kima šamšasakal (v. šam-DIL-BAT) ina usalli (178) kima šamšakal ina aši atabbi (179) kima šiši ina aši tāmmin: "Go forth, (O sorcery) like the fish from my water, like the boar from my marsh, like šamšasakal (soapwort) from the meadow, like šamšakal (grass) from the side of the canal, like the seed of šaš from the side of the sea." In Gudea, Cyl. A, viii, 24, "like the usš tree thou art established," suggests a solid root. As is seen from p. 289 it occurs alongside the trees samu(š)ku, halupp (willow), šal(k)kullu and taradā (or tarpa'), tamarisko: was used in making chairs (Johns, AJSL. 1917, 63: Langdon, PBS. xii, 26, 33), chariots (at an early period, iv R. 12, obv. 23-4), chairs and beds (T.A. i, 77), doors (Neb. ix, 11, in 1 R. 56), and even pegs for a drum (Thureau-Dangin, RA. 1920, 66, 27).

I think I was wrong in AH. in seeing in this tree the maple. Several species of maple do occur in Syria and Palestine (FP. ii, 230, the generic

1 I am not convinced that the scribe was correct here in giving to the sign kal the det. 1 It is true that im-ta-š can also be used of obtaining trees (e.g. Stat. B, v, 36), and yet the "mountain of Meluhja" seems a long distance away from which to bring a wood from which furniture and chariots are made. On the other hand šamši(šuš) diorite, dolerite (DACG. 163) came from Magan, which would coincide with the material for maceheads (dolerite) in Egypt. Jensen thought that šamši was ebony (KB. iii, i, 3), but Thureau-Dangin challenged this (HC. 53) on the grounds that it came from countries which do not produce ebony, e.g. from Syria, although it does not necessarily follow, as he says, that this is an essential.

2 This is the phrase used in early contracts; e.g. Brit. Mus. B. 27, Meissner, Alb. Privatr. no. 97, 12, ina biti kiri šio-sa itelli "he shall leave house, garden, and household furniture".
Arabic name being qaiqâb), and VK. 437 says that Acer pseudo-platanus L. is well adapted for situations near the sea, and is suitable for saddle-trees, wooden dishes, founders' patterns, etc. MPB. ii, 715, says “20–25 Mtr. hoch... Bergwälder des mittleren und südlichen Europa... Holz wie das anderer Arten technisch verwendet, namentlich zu Schnitzereien”. A. creticum is found in Crete, and doubtless would represent the same kind found in Cyprus: C. Ritter (Die Erdkunde vii, 1, 919) includes the Acer among the woods of the Taurus: various kinds, Amanus, Lebanon, Beilan, FP. ii, 715, says”

20-25 Mtr. hoch...

Nevertheless, the varied use in MT. is against the maple, which has practically no medical value. Its mention alongside haluppu, and “at the side of the sea” (i.e. the southern Babylonian marshes) suggest a willow, which is of use in furniture-making like the ṭubû. For the medical uses of the willow see p. 292.

(2) ḫA-LU-ŪB, haluppu, Populus euphratica, Oliv., willow.

It occurs thus in MT.:

(1) Simply: ext.: Feet (cannot walk), †, dry, pound, sift, warm in river-water, bathe, AM. 69, 2, 7. Ritual, BBR. no. 80, 9.

Int.: Stomachic, †, [drink], AM. 64, 2, 19. In Clay, PBS. xiv, No. 69, 48 (Cassite) karpât dallu ḫA-LU-ŪB occurs in a list of vessels containing drugs.

(2) PA (tops): Temples, †, in beer-yeast bind on, CT. xxiii, 41, 15. Head, etc., †, ext., AM. 86, 1, ii, 8. Childbirth, the woman's body being full of berdu, her anus fallen, anoint in oil, drink in beer, KAR. 195, r. 28.

(3) Seed: Uncertain, †, poultrie, Ku. ii, iv, 80. Against an-ta-šub, etc., aš-su (bind on ?), KAR. 186, r. 41. In BM. No. 122654 (Nineveh text) kamzir ḫA-LU-ŪB is a drug for sorcery (šam uḫ-2[u] = kisp[u].

Gudea obtained it from Mt. Gubin (ISA. 111, vi, 44–6), using it for the “lower” construction of a building with ḪN-IŠ-HA-AN (ib. 151, xii, 3–4). še ha-lu-... mentioned in Scheil, RA. 1921, 56, 22, 3rd Dyn. of Ur). About Gudea's time a tree of 3 cubits length and 2 šu-ru-ē thickness mentioned (Thureau-Dangin, RTC. No. 221, r. 2). Chairs, etc., made of ḪA-LU-ŪB (Delaporte, ITT. iv, 7087, 3rd Dyn. of Ur: Langdon, PBS. xii, 1, 26, 34, not later than Cassite). ABL. 566, 9 ff. (late Assyrian) mentions 6 mulberry tree(-trunks), 6 cubits long, and 1 thick, with 1 ḪA-LU-ŪB of 5 cubits long and 1 thick. ḪA-LU-ŪB occurs in omens (“If (in) a field in the middle of a city ḪA-LU-ŪB comes”) other trees in the same class alongside being tamarisk, laurel, pomegranate, fir, Ḫšarbatu (willow) ḪG.BU and palm (DA. 76, 29). Also similarly “If in the muspalu of a city ḪA-LU-ŪB appears”, alongside numerous others (Gadd, CT. xxxix, pl. 12, 23, and part dup., not so full, pl. 11, 51, DA. 84, 38).

ḪA-LU-ŪB, haluppu (v. haluppu, ii R. 45, 50, e) is the Arab. halâf, Syt. ḫâlâphâ, Populus euphratica Oliv. (Meissner, MVAG. 1913, 2, 31) growing in wet places (FP. ii, 535). Note the forms ḫEŠ-HA-LU-ŪB-MUR-RA-NA = dupranu (Meissner, ib. 21, 32) and ḪA-LU-ŪB-MUR-RA-AN-GHâR = dito (i.e. Ḫal-ma-â(e)?)-ru, Meissner, Ass. Forsch. i, 22, 78), and ḪA-LU-ŪB ḪA-M-KAN-NA = ruttu (Meissner, MVAG. 1913, 2, 21, 40).

Rich (Koord. 143) mentions the weeping willow, but Ainsworth (Researches in Ass. 125) says that this is not met with in Babylonia.
Olivier (Voyage vi, 318) says that he found a kind of poplar two days above Hit. Ainsworth (ibid.) says that "occasional groves" of a poplar (gharab) on the river banks have occasionally been mistaken for willows.

Willow-bark is used in powder on ulcers, and baths from a decoction are recommended for weak children (LPG. 411). The bark of the "white willow" is used against purgings and menses (Hill, Useful Fam.-Herb. 387). Pliny (NH. xxiv, 37) prescribes the bark of the upper branches of the willow reduced to ashes for corns, and spots on the face; the juice from wounds in the tree for ears; the bark and leaves boiled in wine as a fomentation for sinews. P. 1035 prescribes salicine (from the bark and leaves of Salix and Populus) int. for rheumatism. Rauwolff (100) gives the differences between the safsaf and other willows, and says that at Aleppo a "precious and sweet water" is derived from the former. This "willow-flower water" is quoted as being made from the sweet-scented flowers of the Oriental willow (ban balaf or balaf, Lane, Thousand and One Nights i, 211).

Of the other words in these groups:

1. (1) S(sam)ullu is found in Scheil, MMAP. ii, 127, 9 (a late Persian text, mentioning Ahuramazda) [epuš abnu taboo isši šamullu ū-...], which shows that it is used in building.

2. Šakullu (from the Sumerian ša-kal, apparently "strong-heart"), is used for making chairs (Johns, AJSL. 1917, 63).

3. Nappašu, evidently a form of the ušu-willow, must surely be connected with Syr. n'phaš, shake, i.e., the quivering aspen or similar tree.

4. Rutitu, the equivalent of the "willow of Magan", is probably cognate with the Syr. rath "tremuit", i.e., Populus tremula L., a tree of Asia Minor (FP. ii, 503) (or, if not this species of Populus, the other species are sufficiently tremulous to claim identification). The Syr. trònblā (= tremula) is P. nigra (FJ. iii, 335).

3. (?)A-TU-GAB-LĪŠ, sarbatu, a willow. ṣamPAR, the nitre therefrom.

Meissner, MVAG. 1923, 2, 26, 62 ff.:

<table>
<thead>
<tr>
<th>ŠA-TU-GAB-LĪŠ</th>
<th>ṣar-ba-tu</th>
</tr>
</thead>
<tbody>
<tr>
<td>ŠA-TU-GAB-LĪŠ-KUR-RA</td>
<td>ditto šadi(ū)</td>
</tr>
<tr>
<td>ŠA-TU-GAB-LĪŠ</td>
<td>ti-ia-a-lu</td>
</tr>
<tr>
<td>ŠA-TU-GAB-LĪŠ-A-ŠAG-GA</td>
<td>ditto</td>
</tr>
<tr>
<td>ŠA-TU-GAB-LĪŠ-LĀL</td>
<td>gīr-gī-šu</td>
</tr>
<tr>
<td>ŠBIL-A-TU-GAB-LĪŠ</td>
<td>kūl-la-ru</td>
</tr>
<tr>
<td>ŠBIL-A-TU-GAB-LĪŠ</td>
<td>kāp-ta-ru</td>
</tr>
<tr>
<td>ŠMĪŠ-A-TU-GAB-LĪŠ</td>
<td>za-an-za-li-qu</td>
</tr>
<tr>
<td>ŠKUL-A-TU-GAB-LĪŠ</td>
<td>ditto</td>
</tr>
<tr>
<td>ŠU</td>
<td>ḫī-lī-šu</td>
</tr>
<tr>
<td>ŠMĪŠ — BU</td>
<td>ŠU-lum ditto</td>
</tr>
</tbody>
</table>

In MT. ṣamPAR and ŠA-TU-GAB-LĪŠ are found thus:
(a) ṣamPAR:

1. Cf. artuttu and ratuttu for the anemone, p. 141.
(1) Simply: ext.: Eyes, frequently: (with 1 shekel of cantharides, etc.), AM. 8, 1, 2 (cf. 6, 3, 7, and 17, 1, 7): †, 8, 2, 1: inflamed eye, etc., apply (with copper gum, etc.), 9, 1, 34: 11, 2, 42: (with cantharides, etc.), 16, 1, 8: eyes "full of growing flesh", ib. 23: †, 19, 6, 12: inflamed eyes, blow in with myrrh and EME-SAL-LIM-salt, 9, 1, 38: (with gum of copper), ib. 39: (with mint), ib. 40.

Ears, blow alone through tube, AM. 36, 1, 12.

Foul breath, AM. 23, 1, 10: †, 25, 6, 11: †, 26, 6, 8.

Toothache, AM. 28, 1, 4. To clean teeth, with Ammi and lye, AM. 54, 1, 12.

Feet, bray and apply alone, AM. 74, 1, iii, 1.

Urinary trouble, (strangury), bray alone, mix in oil, blow up the urinary passage, AM. 59, 1, 23 (cf. KAR. 193, 18). A woman sick of NI-NE, bray alone, mix in oil, pour into the urinary passage, KAR. 194, iv, 12. Itch in head, bray (after other treatment), apply alone, KAR. 202, 52 (cf. AM. 2, 3, 4ff.).

Blains (śīgaṭī), †, bind on, AM. 32, 5, 4. For MA-S-TAB-BA, bray alone, [anoint] in oil, AM. 64, 1, 34.

Suppository: put to anus, †, AM. 94, 2, ii, 7 (cf. 57, 5, r. 8): alone, 57, 1, 3 (probably).

Int.: Alone in refined (ḥalsī) oil, honey, and..., AM. 53, 10, 5.

Stomach, alone, drink, Kū. ii, i, 31, and ii, iii, 61. Jaundice in eyes, alone, drink, Kū. iii, iv, 17. Urinary trouble, †, drink, AM. 66, 7, 15 (one of 37 drugs, drink, KAR. 193, 4. Anus-trouble with dīkṣa (bruise), alone, drink in beer, AM. 58, 2, 5. Cough, alone in kurunnu-beer, honey, and refined (ḥalsī) oil, let his tongue take, etc., AM. 80, 1, 14, and 80, 7, 10: with Ricinus and scammony drink, Kū. iii, iv, 3.

Fumigate: alone for jaundice, Kū. iii, iii, 17.

"Dry" (tablam): Eyes, apply dry, alone, AM. 8, 1, 28. Ears, †, insert, AM. 36, 1, 18.

Quantities: 1 šū, AM. 41, 1, iv, 26: 5 grains brayed alone in oil applied to eyes, followed by (?) cantharides, AM. 8, 1, 30: † shekel, AM. 8, 1, 27, and 17, 4, 7: 2 shekels, AM. 58, 6, 2.

(2) LA (rind, bark): Eyes, 5 grains bray in ḥimetu-ghee, † (?) apply, AM. 92, 8, 8.

(3) Seed: Zir  ṣam-PAR = zir ḫi. ... (CT. xxxvii, 26, ii, 4, dup. Pl. 41, Rm. ii, 497, 4).

(b)  ḫa-TU-GAB-LĪš:

(1) BIL (ash): 1 qa with 1 qa ash of  ṣam-AM-HA-RA in uterus for some female trouble, KAR. 194, iv, 9 (cf. 21) ... BIL  ṣar-ba-te knead in rose-water, bind on head, CT. xxiii, 32, 1.

(2) Seed: "If a man eats seed of  ṣarbatu, his evil will be assuaged " (TR. ii, 36, 1-2).

(3) PA (tops) [TU hurting (?), or sim.], †, poultice, AM. 43, 1, ii, 8. Uncertain, AM. 63, 7, 6. Uncertain, drink, AM. 91, 5, 1.

(4) Ḥil  ṣar-ba-te, 1 of about 40, to [drink] for strangury, AM. 59, 1, 35.  Ḥū-pr-e  ṣar-ba-te, †, for white pindā (skin-trouble) on the body, AM. 84, 4, iii, 11.

sam Ḥil  ḫa-TU-GAB-LĪš, for cough, bray, drink alone in oil and kurunnu-beer, KAR. 203, iv, 32. sam Ḥil  ṣar-ba-ti is a drug for  ḫā[r] (?), lungs (?), Meek, RA. 1920, 179, S. 22, 14. Ḥil  ṣarbatu thus coincides with the prescriptions for sam-PAR.

See RA. xl, 109.
The important equivalence .. ?ampAR šdi a ?a-TU-gab-liš šum-su (AM. 40, 5, iv, 3) .. "?ampAR, of which the name is 'water of šar-ba-tu'" is paralleled by Smith, CT. xxxvii, 32, 108860, 13-14 :

?ampAR ........... | ?ampAR, il?A-TU-gAB-λIš
?ampAR-mu pi-su-u | ?ampAR ditto

?ampAR is thus a white drug which is the water as well as the gum of the šarbatu-tree. In MT. ?ampAR is used ext. for eyes, ears, foul breath, toothache, feet, blains, and as suppository : int. for jaundice, strangury, and cough ; to fumigate : and the rind and seed also exist. Of the šarbatu-tree the gum is used, as well as the ash, seed, and tops. Curious is the use of "?ampAR dry" which shows a difference between this gum and all the others (which are never thus limited), so that presumably it was normally exhibited as fluid.

Gudea planted an ?a-TU-gAB-λIš-tree in his city in Babylonia ("it spread its shade") (ISA. 165, xxii, 18). Mentioned in Shuli's time (TUrK. No. 121). In De Genouillac I.TT. v, 3, one of 7 cubits is mentioned; the diameter might be 2½ cubits ; and the value ½ shekel when 6 cubits long. An OB. letter speaks of 660 ?a-(TU)-gAB-λIš and 60 ?asnu (fr) (to come by boat ?) (Kraus, Alb. Briefe, 2, No. 1, MVAG. xxxvii, 1, 1932).

It grew in groves (V R. 26, g-h, 19). Chairs could be made of it (Johns, AJS.L. 1917, 63). Esarhaddon (CT. xxxiv, 1, iii, 3 ff.) says ušabši-ma GI-SUKPT u ?ašar-ba-ti ina kirbi-su MA-GAL išir-ma ušarriša papallu, which suggests that it needed water when transplanted to his abode.

It is brought into connection with another tree the tamarisk:
"In (under) a šarbatu-tree he lies, sated with woé, in (under) a ušINIGA (tamarisk) he lies, sated with misery" (CT. xv, 27, 42: Zimmerm, Sum.-Bab. Tammuz-Lieder, 235. To the seed is attributed a peculiar virtue: Šumma zer ?ašarbatu škul limuttu-su ippatir "if he eats the seed of the šarbatu-tree, his evil will be loosed" (Boissier, Divin. ii, 36).

In the seventh century glass-texts, while the wood of the ?a-TU-gAB-λIš is specially recommended for the fuel, the ?ampAR is included in the composition of the first glaze (OTC. pl. 1, l. 10, and l. 14). It is this which threw doubt first on my identification of the šarbatu with styrrax. We can first discuss the suggestion: Meissner had thought it was the mulberry, which I think impossible (MVAG. 1913, 2, 61). There seemed to be good reason for styrrax as a possibility: there was the gum: the Arab. libnah, the Heb. libhneh "the white", was the same as ?ampAR ("white"), the Syr. sdrū sounds much like šarbatu, and there is an Arabic srb for a red gum (Lane, Dict. 1674) said to be the gum of the ūluh acacia or the r q t species of mimosa. Indeed, we have also to consider the form ?ašarbatu, ?ulupu, distinct from ?ašarbatu. It is true that "1 qablu ?a-TU-gAB-λIš occurs in the glass-texts (no. 5, viii, 19, cf. no. 20, 10, 1 qablu ša ?ašar . . . , and 1 qablu ?ašar-bi . . . , no. 2, iii, 12). This tree was grown especially in the north-west of Assyria in the Harran district. Johns, DB. no. 3, i, 6, mentions an estate bearing ?ašar-bu-tu,

1 Note that ?ulupu is another value for ?a-TU-gAB-λIš, perhaps a doublet of ?ulupu.
Iūlupu (pistachio?), and qan-ni za-am-ri. Pliny (NH. xii, 40) speaks of a wood imported by the Arabs from Carmania called stobrus or stobus (Lewis and Short, Lat. Dict. 1880, 1767), which they employed in fumigation for promoting sleep, for which they opened a depot at Harran, while in the same chapter he speaks of storax from Syria. Whether he intends any connection between the two is uncertain, but there is certainly an outward appearance of similarity between the words stobrus and išarbatu.

But, on consideration, it will be seen that išarbatu cannot mean styrax or storax. In the glass-receipt mentioned above the ʾamār is to be used thus (OTC. pl. 1, 13 ff.): "If clear glaze is for thee to make, thou shalt crush separately 10 mana of sand, 15 mana of ash of alkali, 1 mana of ʾamār, mix together, and put them down in the furnace," etc. Similarly, 6 shekels of ʾamār is to be added to the ingredients of ʾuqrneklu (OTC. pl. 3, 69).

Now this mixing before firing makes any hope that ʾamār is a gum intended to make the glaze adhere to the brick impossible. Almost equally unattractive, although perhaps possible, is that the ʾamār was introduced thus to prevent too great a proportion of sandiver or scum (DAOG. xxviii). I think that both must be relinquished.

We must turn to some other possibility. The Arab. gharab "willow" coincides philologically with išarbatu (the equivalence with samw.batu was long ago given up). This, as one of the regular sources of fuel at Mosul, at once parallels the use of išaras (sarbatu) laid down as fuel for the glass-furnaces: willow is the easiest firewood obtainable in Mosul (brought in nowadays on donkey-back) and cheaper than the better dwarf oak, which has to be brought in from further afield.

More important than this is the nitrous product of the willow, which will coincide with ʾamār. Ib. 381 says about nitre in general: "le nitre artificiel est celui que l'on appelle chez nous natroun. C'est un sel cristallisé sous forme de fragments brillants. C'est avec ce sel, une dissolution de plomb et de la soude que l'on fabrique le verre en les mélant ensemble et les soumettant au feu. Il (Ibn Ouafed) ajoute: Razès, dans son livre intitulé Introduction théorique dit qu'il y a plusieurs espèces de nitures: celui des orfèvres, qui est blanc, l'écumex zebdi qui est le meilleur de tous et dont le couleur est d'un rouge terneux: un autre provenant du saule et un autre, qui est le tencar, dont on cache la fabrication." Cf. also ib. 1631: "on recueille sur les troncs une sorte de sel blanc, delié, que l'on appelle sel de saule et que s'emploie comme le nitre et les autres sels." Still more striking is the confirmation of this from Rauwolff (ii, 173) when he reports (between Haditha and Feluja) "the Gun-powder is not made from Salt-Peter, as ours is, but out of another Juice, which they take from a Tree that is reckoned to be a kind of Willow, known to the Persians by the name of Fer,1 and to the Arabians by Garb".

Here, obviously, we have a substance, nitre, from the willow, which can be added to glaze (the other two components in the Assyrian text

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1 Curiously similar in sound to our ʾamār.
being sand and alkali); indeed, there are few, if any, other substances which apply so well. Since it appears spontaneously on the trunks, the word ḫilu "gum" is entirely applicable.

With ṣarbatu as the willow-fuel for the furnaces, and its "gum", ᵃḥarrār, as the willow-nitre, and the Arab. word gharab = ṣarbatu, we may accept the identification as certain. In medicine IB. (ib.) says that it is used for wounds; the leaf int. causes sterility, but is useful against hemorrhage, and its juice for bile. It is worth comparing the Indian uses of (a) *Populus nigra* L., with its depurative bark: (b) *P. euphratica* Oliv., with its bark as vermifuge: (c) *P. alba* L., with its bark used for purifying the blood and in skin diseases, and said to be useful in strangury (IMP. ii, 1320 ff.). IB., no. 724, gives the following medical uses of the White Poplar (Arab. ḫawwar): the bark int. against sciatica and strangury: said to prevent conception when used with a mule's kidney, the leaf acting in the same way after menstruation; the juice of the leaf in earache. He also discusses a gum from the Black Poplar (no. 725). I have quoted the poplar alongside the ḡharab-willow in medicine thus, since salicin is the medical product taken from the bark and leaves of various species of *Salix* and of *Populus* (P. 1035). Rich, Koord. ii, 169, mentions the "ghurrab": "Just below Ümm-el-beia (= beidha) we came to a clump of trees on the right bank; the trees were of the species called by the Arabs ghurrab." I think there is no doubt that these trees were there twenty years ago: I well remember a line of magnificent trees, outstanding in a treeless country along the river bank (the east or left bank), such as might well be sacred trees: and it is clear why Gudea planted one with the idea of its shade.

Not much can be said about the remaining tree-names in this group. Tišlüh is given elsewhere (p. 285) as an equivalent of ērin. Girgišu would appear to be the Syr. gargēnasā, *Arbutus unedo* (Holma, Kt. Beitr. 67), a native of the Mediterranean region; cf. my article in PSBA. 1908, 109. Zanzaliqu may be the Pers. zanzalū, *Melia azeder* (Fl. Ixvi), the Persian lilac (PC. xv, 80), as Ruzicka suggested in BA. v, 88: see also Holma, op. cit. 70). Kullāru, I think, must be the Syr. kēnārē, service-tree. Ḥilību (or perhaps ṣargubbī) occurs in AJSL. 36, 157, and MAOG. II, ii, 10. Meissner, Beitr. ii, 85, gives ḫrubu = ḫippatu.

K. (1) (iṣ)ʾēna-a, ʾēnu, *Vitex Agnus-castus* L., "Chaste tree."

(2) ᵃḥarāna, *Vitex negundo* L., or *Vitex Agnus-castus* L., "Chaste tree."

ʾēnu, *Vitex negundo* L., or *Vitex Agnus-castus* L., "Chaste tree."


Int.: (1 ʿu) of ʾēnu-nim [probably for stone], †, prob. [drink], AM. 4,

¹ Küchler's opinion (Kit. 93) must be right. ʾēnu occurs, e.g. AM. 57, 1, 2, and 58, 2, 6, where the water of it is used to bathe the patient, a very common use for the water of ʾēnu also.
4, 3 (cf. dup. 30, 12): Strangury, †, AM. 60, 1, 8 (šamšu-un-), see p. 89),

Enema: †, AM. 56, 1, 5.


Int.: Strangury, †, drink, AM. 59, 1, 38 (zir šamšu-nim). Female ailment, with Asa foetida and turpentine, KAR. 194, iv, 4.

(3) Root: int.: Cough (hātu) alone, drink in lcurunnu-beer, KAR. 203, v, 46: cough (sualim) drink alone in oil and lcurunnu-beer, ib. 31.

(4) ZID (powder): Pregnant woman, †, in uš-sa-beer... , KAR. 195, 3 (ššE-nu).

(5) ššE-ru: for "poison", †, fumigate, AM. 91, 1, 6.

(6) "Water of šumû." For bathing the patient after completion of other treatment: AM. 31, 5, 3: 43, 5, 15: 54, 1, 9, 12: 57, 1, 2 (ššE-nu): 58, 2, 6 (ššE-nu): 61, 1, 8: 91, 1, 6: prob. 53, 1, iii, 2: 101, 1, 10, 16: in warm (bīl) water of šamšu-nim, AM. 83, 1, r. 21: rub in hot (ṣikruti) water of ššE-na-A, AM. 79, 1, 15. To bathe a patient before treatment, AM. 24, 5, 12.

(7) PA (tops): ext.: Lassitude (rimutu), †, bind, AM. 52, 5, 14, (prob. dup. AM. 5, 6, 6). Temples and lassitude (rimutu), alone dry, pound, sift, bray with various flours, steep in rose-water, bind on, CT. xxiii, 40, 6 (dup. AM. 20, 1, 38). Stomachic, alone with sifted flour, in rose-water as poultice, after drinking šamšun-pami in kurunnu-beer, Kū. ii, 1, 18. For... šadani, alone, anoint in oil, KAR. 203, 40. Breast and loins, †, prob. bind on, AM. 51, 12, 6. Lungs, uncertain use, †, AM. 53, 4, 19. Anus-trouble, †, uncertain use, AM. 58, 2, 7. Uncertain, †, poultice, AM. 68, 2, 1: 83, 1, r. 32: bind on, AM. 83, 1, r. 25.

(8) Some part of šumû is used for an uncertain disease in wool on the neck, sim. to some part of laurel (Pl. 23, K. 9283, 20–1).

Meissner, MV AG. 1913, 2, 16, 54, has the equivalence ššE-na-A = šumû, and Kū. (93), correctly compared the Syr. šindūyâ, Vitex Agnus-castus L. But on p. 247 it also = šamšunu, with which Meissner (ZA. 1903, 249) compared the Arab. sinâr "plane",2 which, considering the proximity of ašuḫu, lammu, meḫru, and dulbu (p. 247) is in keeping. The Vitex Agnus-castus, called "chaste willow" (in spite of the use of its seeds in the cure of venereal diseases, as Pomet, HD. 13, points out), is "a native of the south of Europe... forms a shrub of about 12 feet in height. The flowers... have an agreeable fragrance. The fruit is globular... with an acid and aromatic taste... It was well known to the antients... In India the fruits of the species V. triphylla and Negundo... have the same properties ascribed to them... The antients considered the Vitex anti-aphrodisiac... The leaves of the Indian species are mucilaginous and demulcent, and are much employed as cataplasms, emollient fomentations, and medicated baths. The leaves of the European

1 A curious use of PA ššu-nu PA ššE-na-A occurs KAR. 208, 12.
2 The Chinar, the Oriental Plane, grows to an enormous size (Ainsworth, Travels, 36).

It was noted at Sulaimanish (Ainsworth in Chesney, Narr. 501).
species must have similar properties... They were strewed upon beds, and supposed to preserve chastity” (PC. xxvi, 397). Pliny (NH. xxiv, 38) says that there are two kinds, and from these is prepared a liniment against spider-bites: the blossoms and young shoots ext. allay headache: and the seed, drunk, is a febrifuge, diuretic, and emmenagogue, and ext. a sudorific and is used for headache. Pounded with barley meal it brings tumours to a head.

_Vitex Agnus-castus_ is found at Antioch, Mar'ash, and in the Amanus (FP. ii, 322). Rauwolff mentions it (102) at Aleppo.

(2) _šišbānu_, Vitex negundo L., or _V. Agnus-castus_ L.
This is the Arab _sa`isaban_, Dokichos _zesban_ Forsk.: Lane, Dict. 1356, c). In Persian it is given as _sisban_ (ib.), _Vitex negundo_ L., although Herzfeld (Beih. no. 176) gives _sizbān_ (Jebel Hamrin) as the _V. Agnus-castus_. Von Opp. ii, 383, says that _sa`isaban_ spreads over the Hauran and Mesopotamia. _V. pseudo-negundo_ (Haussika.) occurs at Jericho, _FP. ii_, 323. It was sold in Mosul as good for swellings.

It occurs in _MT_. thus:

_Ext._: Some anus-trouble, †, wrap in a cloth, apply to anus, _KAR_. 201, 19 (šamšiš-ba-na). _Int._: for pain, swelling, and overmuch saliva, etc., with heliotrope and gum of Aleppo-pine, to drink in beer, _AM_. 23, 55 + 48, 3, 6 (RA. 1929, 78) (šamšiš-ba-nam). _Stomachic_, drink, † (?) in beer, _Kū_. ii, i, 3 (šamšiš-ba-nam).

_Cf._ the uses of _V. Agnus-castus_ above. The _V. negundo_ L. (Pers. _sīsban_) in India is used as tonic, vermifuge, and expectorant. The leaves are discutient, and are useful in dispersing swellings of joints, and a vapor-bath of this plant is used in febrile, catarrhal, and rheumatic affections. Europeans in Bombay call it “the fomentation shrub” (IMP. ii, 1000; _BMM_. 431).

The medical uses of both species of _Vitex_ coincide well, therefore, with the uses of these two in _MT_.

L. _ša`amnu, ēru_, Laurus nobilis L., laurel. Meissner, _MVAG_. 1913, 2, 19, 79 ff.:

| " | " | giš-kal-ku | šab-bi-ṭu | ḥat-ṭu | hu`-ṭa-ru |

This occurs thus in _MT_.:

Fumigation: Ears, †, AM. 38, 2, r. 1.

(2) Root: fumigation: Ears, †, AM. 33, 1, 35. Ghostly attack, †, anoint, KAR. 56, 10.

(3) Seed: ext.: Eyes, †, AM. 38, 2, r. 1. (2)
Root: fumigation: Ears, †, AM. 33, 1, 35. Ghostly attack, †, anoint, KAR. 56, 10. (3)
Seed: ext.: Eyes, †, AM. 33, 1, 35. Ghostly attack, †, anoint, KAR. 56, 10.

(4) PA (tops): Eyes, †, locally, AM. 13, 6, 2. Temples and "poison", †, bind on, CT. xxiii, 40, 1, 4, dup. KAR. 188, r. 16. Sickness on feet, †, apply, AM. 74, 1, iii, 5.

(5) še.ru: Scorpion-sting (?) , †, ext. in oil, RT. 23, 1901, 134, 3, cf. RT. 22, 1900, 159–160. Perhaps in AM. 92, 6, 6.

(6) Gig. Note. "14 gig iléra on red wool thread", KAR. 223, 4: Ebeling, MAOG. v, 3, l. 4: "7 ḫiṣi ḫa "i1MA-NU" (thread on scarlet wool), CT. xxiii, 4, 13, cf. 11, 30 (presumably gig is not the equivalent of ḫa-ir-ṣe?): cf. also KAR. 194, iv, 40, thread 7 ḫiṣi on scarlet and white wool with minerals to stay fluid in uterus. Other equivalents for "i1MA-NU besides ḫu are: "enitum, "murrānu, iznū (CT. xviii, 3, viii–vii, 28–30: bu(!)-ur-ra-nu (also equated with medlar; Von Soden, ZA. 1936, 239, 151): "erinnu (Br. 6789). Ḫenit is also applied to the fir (p. 263): murrānu, obviously the "bitter product", from the bitter principle in the berries of the laurel ("laurine, an acid and bitter principle contained in the berries of the laurel", PC. xiii, 354). Langdon (PBE. xxxi, 72) was right in comparing the Arab. murrān "dog-wood", IB. 2101 ("fréne, melia").1 Note the omen: "When there is i1MA-NU, Gadd, CT. xxxix, 9, 19. Cf. "the staff from a shepherd's hand", made from the "eru, KAR. 196, r. iv, 4, 8, the latter (dup. AM. 67, 1, iv, 1) with which Jensen (Brock. 194) compared the Syr. mānaštīdā, a shepherd's crook, stick, or spear. The form lam i1MA-NU also occurs.

Iznū and erinnu are not easy to explain.

"I1RA occurs in the Epoch of Agade (Thureau-Dangin, ITT. i, 1988). Gudea dedicates 60 talents of "i1MA-NU (Stat. G, vi, 12: ISA. 130): "i1MA-NU mentioned, De Genouillac, ITT. ii, 1, 631 (Ibi-Sin): TURk. 121, xv, 16, ii, 7 (Bur-Sin). It (or its gum) was used for making small magical

1 The murrān = ash, fraxinus, in the list of Iraq-Arabic words, Weissbach, LSS. 1930, 321 ff. Post (FP. 1, 576) makes it the Laurestinus, Viburnum Tinus L.0
figures (BBR. nos. 46-7, 12 ff.), but apparently the tree was not used in building.

At one time "ÁŠú was identified with the Syr. 'arrá "tamarisk". But the tamarisk group ("bínú, etc.) is kept distinct from "MA·NU (a distinction also in the omens, although in this case not entirely convincing (DA. 76, 22, 23)) and in MT. the two, "bínú and "ÁŠú are mentioned side by side (AM. 4, 6, 10, and probably 13, 6, 2). The word is most suggestively written "ÁŠú·uru (Meissner, MVAG. 1913, 2, 20 ff.), which definitely points to the connection with the Arab. ghūr, Laurus nobilis L., FJ. ii, 119). This shrub is found in the Amanus and Lebanon in thickets and woods (FP. ii, 482) and in Asia Minor (BMP. no. 221).

The medical uses of laurel coincide well enough with MT. The leaves and fruit are aromatic and stimulant, it is a reputed narcotic, and the leaves are said to be diaphoretic. An oil is made from its berries. It was formerly used for colic and amenorrhcea (BMP. no. 221). Pliny (NH. xxiii, 80) says that the leaves, bark, and berries are of a warming nature; the leaves are used int. for the bladder and uterus, and ext. for stings and eyes; the bark of the root for calculi and for the liver, and the berries promote menstruation.1

M. "Elammaku, perhaps Santalum album L., sandal-wood.

This occurs thus in MT.:

(1) ZID-ZID (powder). For head with kuraru (ringworm), †, wash in rose-water, AM. 5, 5, 7 (cf. 9). Uncertain use, AM. 40, 5, 6.

A practice tablet of the 3rd dyne. of Ur gives "el-am-qu = e-la-mak-um (Scheil, RA. 1925, 48). The wood is used for making itkurutu 2 and paššuru (dish): Tushratta sends an itkurum ša elammaki to Amenophis III, iii (TA. no. 22, iv, 6; cf. 25, iv, 64). GE. viii, v, 46, speaks of a paššuru of "elammaqu, which appears to have contained a mixture of honey and himetu-ghee. Sennacherib uses the wood in building his palace (Luck. 119, 21).

It is possible that this is the almug (algum)-tree of the OT. (see AF. 53), usually taken to be Sandal-wood (Santalum album L.) from India, a very hard, close-grained wood used for carving and cabinet work (Guide to the Exhib. of Animals, etc., in the Bible, 24). In Indian medicine the wood, ground to paste with water, is commonly applied to local inflammations, to the temples in fevers, and to skin-irritations to allay heat and puritus (IMP. 1119). This coincides remarkably with the (rare) Assyrian use above, and may give a good indication of the exact meaning of ZID-ZID which must thus mean a very finely ground powder, as would be expected.

N. "GIR, ÁŠu, Myrtus communis L., myrtle.

Long identified with the Syr. dsá "myrtle", Myrtus communis L.

1 The narcotic effect of the laurel may be seen perhaps in the Assyrian charm to secure pleasant dreams (KAR. 55, 7): "Recite the incantation three times over laurel ("ÁŠú·nu), put it on thy head; tie hellebore (šamkum, kurn) in thy headband (šu-siša = šimunu or šissištu, lit. 'hair-cloth'), sleep, and thou shalt see a fair dream." While the laurel is a narcotic, the hellebore was probably used as a brain-stimulant, regarded in the light of its ancient value against madness.

2 Ḥtyuru would appear to mean "needle" (DACG. 120) or perhaps even "fork" (i.e. paradoxically, without prongs), although such a gift would appear trivial.
It grows in the Mediterranean region (EB, xith ed., xix, 115), Palestine, and Syria (FJ. ii, 268, which gives the Arab. names as 'ās, rīḥān, ḥemblās, merosín), also in Fars (Herzfeld, Beih. ii, 34). Rich mentions myrtle carried in bags by Kurds near Hamrun "used, I believe, in the dyeries" (Koord 43). The Talmud says that it was held in the hand by people dancing in front of the bridal procession (FJ. ii, 268), and it decks Mohammedan tombs, as well as being strewn on coffins (ib. 269). Myrtles are common at Aleppo, their roundish berries being regarded as very good to eat, and the plant is put round graves (Rauwolff 65, and at Tripoli also round graves, ib. 46).

In medicine the myrtle is aromatic and astringent, and an infusion of the berries is used for leucorrhoea and prolapsis of the uterus, and a powder from the leaves for eczema, wounds, and ulcers (BMM. 305). It gives a transparent aromatic oil which appears to lessen expectoration (cf. MT., below). Pliny (NH. xxiii, 81) says that the berries are good for blood-sputting and dysentery, and act astringently on the bowels, and are diuretic: they impart an agreeable smell to the breath: and they are used ext. for ulcers, opthalmia, scorpion-stings, and tumours, and impart a black tint to the hair. The dried leaves, powdered and sprinkled on the body, check perspiration, and are used ext. for several diseases, coeliac affections being mentioned (cf. MT. further). In India, the leaves are used for dyspepsia, for stomach and liver, and a decoction as mouth-wash (IMP. i, 531). In Mosul a local chemist gave me the habb el-ās, berries of the myrtle, "from the mountains," as stopping diarrhoea.

8 mana of a-su-wm was worth ½ shekel of silver at a date approximately of Sargon I, and not later than 1950 B.C. (Geb, Insocr. from Alischar, 55), and 4 mana of riiqGIR in Rim-Sin's period (Larsa, Ch.-F. Jean, Bab. xi, 1929-30, 176): 1 talent of riiqGIR, with various drugs in various quantities respectively in ½ qa, ½ qa 15 carats, 10 carats, 13 carats, 7 ᱏ, and 2 carats (total 1 qa 7 ᱏ 70 carats) poultice, AM. 49, 6, r. 2. "Poison," †, poultice, AM. 98, 3, 9.

Int. (?) : "When a man's saliva comes in (from) his mouth," †, AM. 29, 5, 16.

Enema: Strangury, †, KAR. 157, r. 13 : with 4 others in honey and halsa-oil, Kū. 1, ii, 19.

Fumigate: Ears, †, AM. 34, 5, 6. Uncertain, †, KAR. 201, 23.

Quantity : 3 qa a-sa, KAR. 229, 13, cf. 222, 7.

(2) Oil of riiqGIR, in same prescription as . . . riiqGIR, †, AM. 98, 2, 7 (cf. l. 3). As medium, riiqGIR, CT. xxiii, 44, 2.

(3) zID (flour, powder) : ext. : blains (ṣigāti) with 55 others, KAR. 192, iii, 55.

KUS-GIR "bark of ḏsu" is mentioned on VAT. 12625, 11 (D. 10, 9).

The use in MT., although it coincides fairly well with the known medical use of myrtle in ancient times, does not appear to have been very

1 For myrtle used in Assyrian dyeing, see upādī, p. 171.
popular. At the same time the plant would probably have to be brought down from the hills, and consequently would not be commonly known. The oil is mentioned by Pliny, NH. xv, 35, and the fumigation, ib. 36.

O. 1. 𒐉𒀀𒆜𒐋眍, Ficus Carica L., fig.
2. 𒐉𒀀𒆜𒐋𒁹, Ḥašḫuru, Pirus malus L., apple.
3. 𒐉𒀀𒆜𒐋𒆜(150,303),(261,316), armānu, Prunus Armeniaca L., apricot.

Meissner, MVAG. 1913, 2, 15, 34 : Mat. 63, 15–21.

Thureau-Dangin, Syria, 1931, pl. xlvi, gives the Ras Shamra version: 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜 (the last four special kinds of 𒐉𒀀𒆜 from Ma'eri, Subarti, Elam, Syria), 𒐉𒀀𒆜𒊏𒆜 (see p. 304, 𒐉𒀀𒆜𒊏𒆜), 𒐉𒀀𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜 (twice), 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜 (see upper, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜 (see middle, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜), 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜 (see lower, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜𒆜).

Cf. Mat. 89, 10–12 :

1 Mat. (glossed) 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜𒆜 (for GAL ?).
2 Mat. (glossed) 𒐉𒀀𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜 (for GAL ?).
3 Mat. (glossed) 𒐉𒀀𒆜𒆜𒆜𒆜𒆜, 𒐉𒀀𒆜𒆜𒆜𒆜𒆜 (for GAL ?).
4 Mat. i-nu ..
5 Mat. (glossed) 𒐉𒀀𒆜𒆜𒆜𒆜𒆜, 𒐉墒𒆜𒆜𒆜𒆜𒆜 (for GAL ?).
6 Mat. (glossed) 𒐉墒𒆜𒆜𒆜, 𒐉墒𒆜𒆜𒆜 (for GAL ?).
7 Mat. omits this line.
8 Mat. omit the following to end.
9 Mat. omits the following to end.
10 Mat. omits this line.
11 Veritables barbarismes, but, as M. Thureau-Dangin shows, the former gives the correct reading qurdi-lúm, not saddi-lúm.

12 Veritables barbarismes, but, as M. Thureau-Dangin shows, the former gives the correct reading qurdi-lúm, not saddi-lúm.
We have first to make sure of the distinction in meaning between \(i^2\text{MA} \), \(tittu\) (D. 342, 25) and \(i^2\text{MA} + \text{GUNU}\) (both \(\text{haššuru}\) and \(tittu\), D. 146, 3).\(tittu\) has long been known as the fig, the Heb. \(\text{te’enah}\), and \(\text{basburu}\) as the apple, Syr. \(\text{bazz’/ra}\); it remains only to settle which Sumerian sign represents the fig and which the apple, and since \(i^2\text{MA}\) is not given the alternative values and is only \(tittu\), the obvious answer to the problem would be to keep \(i^2\text{MA}\) as \(tittu\) “fig”, and \(i^2\text{MA} + \text{GUNU}\) as \(\text{haššuru}\) “apple”. This can be substantiated from the literature: in the Legend of the Worm (\(\text{PRSM.} 1926, 59\)) Shamash says to the Worm “I will give thee \(i^2\text{MA} \text{basilti, armana} i^2\text{MA} + \text{GUNU}\); and here \(\text{basilti}\) applies (as feminine) to \(titti\) and not to the masculine \(\text{haššuri}\). Moreover, it is the dried figs in which the small white worms are to be found which resemble the mythical worms which are associated with the decay in teeth in so much folklore, being even represented in the demonstrations of charlatans by small pieces of white sinew when they draw aching teeth. Dried apples, of course, are to be had in the bazaars, if I remember rightly, but I do not know of their breeding worms. Certainly the feminine form \(\text{basilti}\) is conclusive.

Another piece of evidence comes from the offerings made by Nebuchadnezzar (\(\text{NBK.} 169, 24\)), where \(\text{titta piš(a)} “dried figs” are mentioned alongside \(\text{munziqû “raisins”}\). Dried apples are unlikely.

By contrast, we have \(i^2\text{MA} + \text{GUNU} \text{GIS-} \text{GI}, \) the \(\text{haššurû ãû} \); the “apple of the thicket”, the gall-apple (p. 255). The Heb. \(\text{tappûâh “apple” is on occasion used for “gall-apple”, tappûûûm,} \) gall-apples from Kürdistán (\(\text{FJ.} 2, 632\)).

Finally, although the text is untrustworthy, note 12 \(\text{ka-ma-na-a-te} \) \(\text{sa} i^2\text{MA} (?) “12 cakes of} \(i^2\text{MA} (?)”\), \(\text{ADD.} 1095, 8 \) (cf. the Heb. \(\text{d’vbhêlêth} i^*ëenuine\)).

\(i^2\text{MA}\) occurs in early Sumerian times (Deimel, \(\text{Ornml.} 16, 55 \text{ff.} \)):\n\(\text{Gudea’s period (\(\text{ISA.} 123, \text{v, 12, Stat. E} \) : 3rd Dyn. of Ur (Allotte de la Fuye, RA. 1919, 7). De Genouillac,} \text{ITT.} \text{v, 3, quotes “wood of 6 cubits} \) from \(i^2\text{MA}\). In the Akkadian text of Sargon I’s expedition to Asia Minor, the Mountain of Galašu affords lapis, gold, \(i^2\text{MA} + \text{GUNU}, i^2\text{MA,} \text{ibimùšatu,} \text{iburùnû (Ficus sycomorus), um (?) karani (?) (Weidner, Boghaz K. Stud. 6, 1922, 64).} \)

Other forms are found, e.g. \(\text{ti-ta, CT. xviii, 2, v–vi, 6, tûn-tûm,} \) Strassmaier, \(\text{Nabonid} 709, 1, \) and cf. Von Soden, \(\text{ZA.} 1936, 238, 123–4 : \)
\(\text{ti (v. BE)-i-nu = tî-[la]-tû} \)
\(\text{tî -nu = ti-it-tû} \)
\(i^2\text{MA} + \text{GU-NU-GIŠ-MA = tinamû (Meissner,} \text{MVAG.} 1913, 2, 16, 50). \)
\(i^2\text{MA}\) occurs thus in \(\text{MT.} , \) only as \(\text{PA (tops)} : \)

\(\text{Ext. : \[Stomach (?)\],} \) mix with oil, poultice, \(\text{AM.} 57, 6, 11. \) \([\text{Lungs} , \) poultice, \(\text{AM.} 85, 1, \) r. 22, 31 + 7, 2, 3. For “poison” and \(\text{rimutu (lassitude),} \) mix, \(\text{bathe, AM.} 52, 5, 9. \) \(\text{Head, alone (?)}, \) \(\frac{1}{4} \) \(\text{ qa steep in milk,} \)
shave (head), bind, AM. 41, 3, 2 + CT. xxiii, 27, 15. Swelling, †, bind on, KAR. 192, 49.

Pliny prescribes the milky juice ext., as well as the leaves and figs still green (the leaves being used for alopecia, and the young shoots of the branches for dog-bites and ulcers (NH. xxiii, 63). SM. uses the fig in plasters (see Index to SM. ii).

For the home of the fig, and the various kinds in the Near East, see Hehn, Kult. 94, 98. The Assyrian texts (Von Soden, ZA. 1936, 238, 126) give one other kind:

\[\text{[i]nu} (v. hé-en, v. hi-in)-zu-re = ḫāš-hu-re\]

which must surely be the Arab. "chonṣur" (Ficus capensis Thbg., FJ. i, 225).

2. \text{ṭa-Ma} + GUNU, ḫāšuru.

With \text{ṭa-Ma}, tittu, settled as "fig" we can turn to \text{ṭa-Ma} + GUNU, ḫāšuru, the Syr. hazzūrā "apple" (Hommel, quoted Boissier, TR. ii, 70).

In the Agade period we find \text{ṭa-Ma} + GUNU TAG-GAL, \text{ṭa-Ma} + GUNU, NI-BAR-DA, \text{ṭa-BAR-DA}, etc. (De Genouillac, ITT. v, no. 9188), and in Bur-Sin's time "5 \text{ṭa-Ma} se-ir-gu" and "5 \text{ṭa-Ma} + GUNU se-ir-gu" (Y. Nakahara, Sum. Tablets, no. 19). The wood of \text{ṭa-Ma} + GUNU appears to have been used in building (De Genouillac, ITT. v, 3).² In Hammurabi's time 8 gur of \text{ṭa-Ma} + GUNU are recorded (Charles-F. Jean, Contrats, no. 148). In the Song of Mama (Old Babylonian) the poet sings "Sweeter than ḫananaābī or(ṣma) ḫasūrīm" is the Song of Mama (King, CT. xv, 1-2, 5, cf. 7: Dhorme, RA. 1909, 13).

\text{ṭa-Ma} + GUNU occurs thus in MT.:

(1) Simply: for a blow (miṣitti), †, AM. 76, 2, 13.
(2) PA (tops): to cleanse mouth, †, wash with warm water, AM. 24, 5, 9.
(3) ḫašhallatu (sour juice): Lungs, †, uncertain use, AM. 55, 4, 10.
It is used in a love-charm (KAR. 61, 8 ff.; Liebesz. 12): "Either a \text{ṭa-Ma} + GUNU (apple) or one (!) \text{ṣu-ūr-Ma} (pomegranate): the incantation three times thou shalt recite, give it to the woman, make her suck their juice; that woman having come, he shall love her." The apple is used in similar connection in Cant. ii, 5. Strabo says (15, 3, 17) that in Persia a bridegroom eats an apple or camel's marrow before the consummation of marriage.

\text{ṭa-Ma} + GUNU occurs in the mythical description in Tod. 31, 3, as a comparison with the being's kišalla (ankle-bones).

3. \text{ṭa-Ma} + GUNU KUR-RA, armānu.

Obviously the Syr. hazzūrā armānāt (= ḫašhuru armannu) (AH. 179), the apricot. The Romans called the fruit Armeniaca, which led to the belief that the fruit came from Armenia, a view satisfactorily combated by M. Regnier on the grounds that snow is fatal to the early-flowering plant (VK. 333). MPB. 853 gives a rather vague "Orient" as

¹ See p. 302.
² Cf. \text{ṭa-Ma} + GUNU for four doors (Allotte de la Fuye, RA. 1919, 7).
³ Tu-šam-zaq-ši. The same root occurs AM. 30, 6, v. 3, ina pi-šu [u-man]-zaq, and AM. 52, 1, 17 [ina pi]-šu [u-man]-zaq (of salt) "in his mouth he shall mazāq." The Worm says lu-un-su-qa "let me mazāq (the blood of the gums)" (CT. xvii, 50, 17: cf. PRSM. 1926, 59). I thought in RA. 1929, 81 that it might be related to the Arab. madaqha "chew": in Assyrian it seems to mean to hold in the mouth, chewing or sucking, and then swallowing.
its habitat or home, which (in spite of its description "Apple of the Mountains") might allow us to see "Aramean" as the base of the word armanu. But whatever the origin of the word, armanu is certainly Prunus Armeniaca L., the apricot. The dried apricots, on which the Worm in the teeth is supposed to feed (sammanard arm + gunu, CT. xvii, 50: PRSM. 1926, 59) are common in Mesopotamian bazaars, and doubtless, like the dried figs, as has already been said, p. 303, will breed small white worms which gave rise to the tradition.  

(d) Other forms of arm + gunu may be cited:

(1) arm + gunu, arganu, may well be the ordinary arganu, the balm of Gilead (p. 359), the fruit being "drupaceous, roundish, oval, opening by four valves, and containing a smooth nut" (VK. 561). Uncertain.

(2) With arm + gunu qurdillu, and arm + gunu damšilu, cf. the forms of gourds, p. 83.

(3) arm + gunu-šiš ("bitter apple") may be the crab-apple.

(4) Tamū "sea-apple", some apple-like fruit growing in the tidal-water district of S. Babylonia.

(5) Pissú, from its Sumerian, suggests a malformed fruit.

(6) Arsuppu, see pp. 96, 104, 302.

P. is dar-ru-uq, dar-ru-qu, Prunus Persica Tourn., Peach (?).

The Syr. dōraqinā, peach, is found in a shorter form darāqān or ḍurrāqā in Arabic (FJ. i, iii, 160). Since the whole genus of Prunus yield a gum (VK. 335) this is a far better comparison than the Syr. ḍūrīghā, lemon.

Q. 1. arm, šalluru, Mespilus germanica L., medlar.

2. arm kur-ra, kameššaru, probably Sorbus domestica L., the Service tree, less probably Pirus communis L., pear.

3. arm kur-ra, marmaḫu.

4. arm kur-ra, supurgillu, Cydonia Vulgos Willd., quince.

5. arm kur-ra, ṣarḫu, plum or peach.

6. kāšu, Cerasus Mahuleb L., the perfumed cherry.

7. ṣalḫumu.

Meissner, MVAG. 1913, 2, 18, gives arm = šalluru: arm kur-ra ("the mountain kib") = kameššaru: arm-gal ("the great kib") = marmarḫu,2 kameššaru: arm-pār = kameššaru: arm kur-ra = marmarḫu. In CT. xvii, 16, Rm. 346, 17, [marmarḫu] = šalluru. Scheil, BT. 1914, 188, 7 ff., gives arm = šal-lu-[ru], arm-gal = ḍa-ah-[ḫu]:

arm kur-ra = ka-meš-šē-[ru]: arm kur-ra = su-pur-g[i-[lu]: arm kur-ra = ar-[ma-[ru] (or ar-[sup-pa]): arm-gal = ar... VAT. 9000 (dupr. Pl. 40, 82-5-22, r. i, 8-9, cf. Pl. 31, K. 8546, r. 21: see for text under arm, p. 247) gives šarm-kur = šamḫa-ah-[ḫu], šarm-kur = šarm, ṣam, rab[u(u). CT. xviii, 3, viii–vii, 21, gives ū-ri-ib-[ḫu] = arm, and Von Soden (ZA. 1936, 239, ll. 149-150) ū-ri-ib-šū (v.-ḫu) = šal-lu-ru, and bu-wa-ra-nu = ū, (i.e. šalluru).

We can discuss:

1 The pa (top) of a arm kur-ra is prescribed for feet in AM. 68, 1, 16, †, prob. ext.

2 Meissner, Suppt. pl. 23, Rm. 367, has mar-maḫ-ḫu.

3 Hardly [ha-ah]-ḫu.
1. *KIB as equivalent to šalluru (= marmaḥu), uriblu (= burrenu), and ḭḥḥḥu.
2. *KIB KUR-RA = kameššaru, kameššē[ru], marmaḥu, supurgi[lu], armānu (or arsuppu), and ḭḥḥḥu rabā.

It is obviously difficult to distinguish these various forms of *KIB without a context.

*KIB-GAL, one of the words for the kameššaru which was with reason compared by Holma (KL.B. 73) to the Arab. kūmaṯṯīraḥ "pear". If this be correct, we may see in the smaller fruit, *KIB, šalluru, the Arab. zaʾrur, a doublet for the medlar and the Corylus Avellana. The latter is probably the Assyrian arzallu (p. 317), but it may well be that we have the other meaning "medlar" in this second word šalluru. This is in keeping with what we know of it: there is a contract for "3 gur of grapes (karami in-bi), 30 qa of *KIB ('medlars') on the tree" (tenth year of Nbn., Peiser, KB. iv, 243, no. 39). Note particularly K. 2918, rev. 1 (RA. xvii, 131), where the flesh (of a new-born infant?) is said to be peeled off (nasīḥ) like šalluru (if the reading be šal-lu-[rī], after *KIB in left column).

*KIB-GAL are his kīšīlā” (some part of the body) (Ebeling, Tod. 47, 11), which may be contrasted with (ib. 31, 3) "*hāšhuru (apples) are his kīšalla (ankle-bones)"). In the text of Sargon of Agade (Weidner, Der Zug Sargons, Boghaz K. Stud. 1922, 69) it is mentioned, along with šalallatu (sour juice) thus:

(1) PA (leaves): Feet,” bind on, AM. 68, 1, 2: ib. 16 (dub. 65, 1, 6; JRAS. 1937, 266): ib., r. 24 (doubtless to bind on: †, bathe, feet, AM. 15, 3, 21 (cf. KAR. 192, 1 ff.; JRAS. ib., 283). Bruises or swellings, †, wash, AM. 52, 5, 9.

(2) Ḥāšḥallatu (sour juice): prob. chest or lungs, †, bind on, AM. 72, 2, r. 4 (in this connection note PC. xv, 126: "the fruit [of the medlar], when first gathered, is extremely austere; but this austerity is changed soon after gathering into an agreeable acidity "). LPG. 313 speaks of the use of the medlar as int. only, and not ext.

Turning to kameššaru, there is a great probability that it should be equated with the Syr. ḫaṣṣāra ḫbarrā “wild apple” = medlar.

*KIB occurs in MT. in the use of its PA (leaves) and ḥāšḥallatu (sour juice) thus:

(1) PA (leaves): Feet, †, bind on, AM. 68, 1, 2 : ib. 16 (dub. 65, 1, 6; JRAS. 1937, 266): ib., r. 24 (doubtless to bind on: †, bathe, feet, AM. 15, 3, 21 (cf. KAR. 192, 1 ff.; JRAS. ib., 283). Bruises or swellings, †, wash, AM. 52, 5, 9.

(2) Ḥāšḥallatu (sour juice): prob. chest or lungs, †, bind on, AM. 72, 2, r. 4 (in this connection note PC. xv, 126: "the fruit [of the medlar], when first gathered, is extremely austere; but this austerity is changed soon after gathering into an agreeable acidity "). LPG. 313 speaks of the use of the medlar as int. only, and not ext.
The reference to the hard wood of Sorbus domestica suggests a possible connection with $^{4}MA + SUNU GIS-DA, kameššaru$ (Meissner, MVAG. 1913, 2, 16, 51). As a matter of fact, I have no recollection of the Service tree as being important in Mesopotamia, but I certainly saw the pears in the Mosul bazaars in October, and Hoefer (Chaldée, 181) also mentions them.

Here, in this connection, we should remember the word $^{16}angāše$ in the letter ABL. 813, which also mentions $^{4}supurgillum$ (quinces) after 2,350 $ibisu$ of $^{4}MA$ (figs) and 450 $ibisu$ of $^{4}KIB$ (medlars), all apparently for Sargon's gardens in Dur-Sarrukin (l. 12 and r., l. 5). Waterman (Letters, No. 813) rightly takes angāše to be the Arab. īrijā, although whether we are to see in it here the meaning “plums” (as Waterman), or its other meaning “pears” $^{1}$ is uncertain. It would certainly suggest a doubt in the meaning “pears” for kameššaru, if we admit the possibility of angāše as meaning the same. IB. 1409 mentions the “gum of īrijās”, i.e. of the plum-tree.

$^{16}Marmahu$ might have its cognate root in the Syr. rumḥā “spear”, with reference to the branches of the wild medlar “armed with stiff spines”, VK. 328.

4. $^{4}KIB-KUR-RA, supurgillu$.

This occurs as a town-name $^{4}Supurgillu$ in the time of Tiglath-pileser iii (iii R. 9, 41), captured by the Assyrian governor of Nairi (north-west of Assyria). As a fruit it occurs along with $^{16}angāše$ (pears, less probably plums), ēgīs, and medlars in the Assyrian letter ABL. 813 (see above). In ADD. it is not uncommon along with āndahāše (p. 89) and sīrdū (bitter almonds), they being contained in karpašqa-ZAG (e.g. 1003, 1007, 1010, 1011, 1013 (written su-par-gil-šu), 1015, 1017, etc.), pots which could also hold oil or honey (BBR. 67, 9, 10; 68, 14), which suggests that a jam or preserve could be made from them.

Obviously, it is the Arab. safarjal “quince” (AH. 130); the modern Palestinian ḥabbūṣ (FJ. iii, 241) does not occur in Assyrian. Cydonia vulgaris Willd. (= Pirus Cydonia L.) is indigenous to Persia (H. C. Greenish, Textbook of Materia Indica, ivth ed. 181): Rich mentions the quince at Beestan (Kurdish Hills) (Koord. i, 178); it is common in the Mosul bazaars, and I have eaten an excellent jam made of it. It apparently was not used in MT., but the medical value lies in the demulcent seeds, the mucilage, and the syrup.

5. $^{4}KIB-KUR-RA, ḡahḥu.$

$^{16}Angāše$ appears, as we have seen (above), to be the equivalent of the Arab. īrijās, but whether as “pears” or “plums” is uncertain. There are three other words for “plums” in Mesopotamia (Hoefer, Chaldée, 181), “azaz,” “hoqūgh,” and “qulb al-tair”; nearer to ḡahḥu than “hoqūgh” (I heard bāhū is the Syr. ḥahḥā “plum” or “peach.” (FJ. ii, 165). $^{4}KIB-KUR-RA “KIB of the mountains” is “the large ḡahḥu” (see AH. 180).

(f) Karw was found in the mountains of Sinaḥulzi and Biruatti, probably E. of Lake Urumiah, by Sargon (HC. 9, 28) along with

1 Hoefer, Chaldée, 181, gives it the meaning “pears”, spelling it nidjaz: so also in N. Africa (see also Lane, Diet. s.v. īrijās).
śumlašu, “a sweet fragrance,” as he says. It would appear to be the Latin cerasus “cherry,” tradition saying that the tree came from Armenia, having been brought by Lucullus to Rome (NH. xv, 30). Inasmuch as Sargon speaks of its fragrance karšu must be the Prunus Mahaleb L., which has a very pleasant, strong scent, and is to be bought in the bazaars of Mosul. FJ. iii, 169, gives the Arabic gurāšād, qaruz for Prunus Cerasus L., and says that the wild cherry is found on the Euphrates and particularly in Mardin (171). “I did also find by the Shop-keepers, the white Seed of Mahaleb, which are in hard shells, which are long and pointed, and covered without with a tender skin, like unto the Pistachio Nut. A great quantity of them are carried from Mecca into Syria, and used to perfume Soap-Balls. The Trees whereon they grow I did not see, yet, as I am informed, they grow hereabout, but chiefly on the Mountains that are by the way to Persia” (Rauwolff ii, 194).

R. 𒅔𒆠𒅕𒅔, gišimmaru, Phœnix dactylifera L., date-palm.

Zû-lûm-ma, suluppû, date.

The date-palm is cultivated from Basrah northwards to Baghdad, its northern limit being practically Tuz Khurmati, on the Tigris, and Anah, on the Euphrates (I did see two or three sporadic palm-trees in Mosul in 1904, but these appeared to have vanished after the War). It demands water, and hence will not grow in the desert without it; in Basrah, where the canals are cut for the intake of tidal waters, the palm-groves are exceedingly thick and beautiful, and within these groves, at the foot of the palms, grow pomegranates and licorice, in contrast to an unnatural appearance in an omen-text where a mention is made of mandrake and figs appearing amid the palms (King, CT. xxix, 49, 30). It is not clear what is intended by the Assyrian phrase “a palm of (?) the north (𒅔𒅕𒅔 ša pān iltāni)”, unless it indicates a peculiar species which does not grow in S. Mesopotamia. At the present time the various species are very numerous (I was given the names of some seventy different kinds: cf. the forty-nine of Pliny, NH. xiii, 9).

The tree provides not only the important fruit, but its top is also eatable (being white and of the consistency of celery, cf. Pliny, NH. xiii, 9). The carpenter uses the fronds, and the builder the trunks (although they are rarely cut down until useless for fruit); the triangular and paddle-like bases of these fronds are used for fuel after the women have trimmed them from the tree, a process which gives it its well-known serrated appearance; the fibres provide cordage, and the date-stones, when ground up, a fodder for cattle, and even a substitute for coffee (MPB. ii, 343). Arrack is another of its products. (See Strabo xvi, 1, 14, etc., quoted Maspero, Dawn of Civilization, 556).

The cuneiform sign for the palm can be found in the Faro-texts (Deimel, Inscr. Fara, i, No. 198, p. 23); dates in the time of Shulgi (De Genouillac, ITT. ii, 1, No. 781). The dwarf-palm, the dum-palm, Hyphaene thebaica (Del.) Mart. (Sinal, FP. ii, 557) occurs in cuneiform as 𒅔𒅕𒅔-(DIR) = ta-a-lum (γναμαρ δοι = θαλ on the tablet with Greek equivalents, Pinches, PSBA. 1902, 108). Tālu is the Aram. tālā, the Iraq-Arabic tāl (AF. 54), and Landsberger (Ana Ittišu, 194) says that this is the young plant of five and six years old.
"GIŠIMMAR-DU₁₃" occurs in a ritual (BBR. 148, 23). A synonym for "G.-DU₁₃-DU₁₃ (DUMU-DUMU) is šá-kin-nu (kinnu in Meissner, MVAG. 1913, 2, 21) (γισιμπαρ δομ = σακων, Pinches, ib., and also for "AMA-GIŠIMMAR, φα γισιμπαρ = σακων). To complete the Greek equivalences there are "G.-LIBIS-BUR-RA" = labbu (γισιμπαρ [sic] ἀλέφ βορ...). Cf. MVAG. ib., where other equivalents for labbu will be found, i.e. "G.-LIBIS-HAB-BA, "G.-L.-GI-A, "G.-L.-UG-GA, "G.-L.-GAZ-ZA, "G.-L.-RI-RI-GA, "G.-L.-GÚ-GAR-RA.

The four year old plant is, according to Landsberger (ib. 194) called ligimu. The wild species (presumably) not properly tended must be the "G.-KUR-RA "mountain palm" (= gurummadu) (MVAG. ib.). Su!aju{;u (="G.-su-usu and "G.-DU₁₃-DU₁₃) apparently a Sumerian loan-word, must be another name for the dwarf-palm.

Various kinds of palms (dates) are mentioned, identified by the locality: Tilm~tnnu "from Tilmun" (see also Ebeling, NB. 0, No. 20), a kind synonymous with asnē (for these see O a m b. 60, 1: LBL. 41, 9), with which AF. 54 compares Arab. 'snin): Makkanā "from Magan": Meluhḫā "from Meluhha".1 Here perhaps we may add Von Soden, ZA. 1936, 239, 127-130:

| mar-ra-tú | gi - šim - ma - rum |
| e-lam-mi-tú | |
| (v. ḫu-la-me-tú) | |
| [a p][l(l(?)]iršiti | |
| ar-ḫa-nu-u | |

The adjectives applied to the "GIŠIMMAR are: mitum ("dead"), bišu ("rotten"), dišu, ša kalmat aklu ("eaten by a worm"), ša kalmat laptum ("touched by a worm"), marru ("bitter"), iškurari (v. ašqulul), nakša ("cut"), urrā (similar), šarmu ("clipped (?)", in reference to the cutting of the branches), naspu, hašlu, dišu, hi, bu, uppu, mūšakripu, tuamu ("twin"), šikšu ("male"), ša nišu (v. šišakhū) "female"), ša qštē ("of the grove"), ša qātī, iṣ-ṣi bilata (v. bil-ṭi), našū ("bearing"), lá našā ("not bearing"), baslu ("ripe"), lá baslu ("unripe"). On the "male" and "female" palm note Schwenzner, MVAG. 1914, 3, 93.

The parts of the palm are: va(ārē)p, used in the Šurpu incantation "as these árē shall not return to their palm" (v/vi, 85). The top of the palm (an edible delicacy, as was mentioned on p. 308) was called saq-GIŠIMMAR "head of the palm", and was used in offerings with dates, figs, etc., in Gudea's time (ISA. 125, 129, vi, 7). In MVAG. 1913, 2, 24, we also find libbi ṣāṣi (the heart), uquru (Syr. qurā, Jensen, ZK. 1885, 26; Meissner, MVAG. 1916, 2, 40). The "feet" of the palm are another part; "12 feet" of great palm trees were sold for 3 shekels in the year after the defeat of Simanum (De Genouillac, ITT. ii, No. 929). Sissinnu (Jensen, l.c.: Meissner, l.c.: sistimn, Torchyn, Tempelrechnungen, 125) = Aram. šisēnā, Dattelrispe, amplified in Von Soden, ZA. 1936, 239, 131) in a group

1 For various instances of these see Meissner, MVAG. 1913, 2, 21 f.: FJ.* ii, 317. Cf. also šum-mu-ju Nin. TUK. 11-e, NBB. No. 200, 5.

We find also *šg.-ud-ḫi-in, uḫīnu, the Aram. *'alīna, Syr. ḫīnā* "green date" (*AF.* 54 : cf. Ana Ittīšu, 206) : note an omen "in Babylonia *šg.-uš uḫīnu itṭasi* "a male palm bore green dates" (King, *OT.* xxix, 48, 8). 20 *gur uḫīnu* are mentioned on a late Bab. letter (Clay, *YOS.* iii, 200, 8, cf. *NBB.* No. 200). Words relative to *uḫīnu* are : *šg.-ud-ḫi-in-šag-žu = šuṣū, šiṣū, Aram. shīšīn"stoneless date" (*AF.* 54) ; *šg.-ud-ḫi-in-ud-da = buṣūl šiti ; and the adjectives applied to *uḫīnu* are *maṣīru* ("sweet"), *daṣ̄py ("honey-sweet"), *ṭābu ("good"), *piṣē ("white"), *salmu ("black"), *sāmu ("red"), *burrumu ("two-coloured"), *irqu, arūq ("green" or "yellow"), cf. *zū. lum-ma ar-qi-e, KAR. 73, 8), *baṣīl ("dry" or "ripe"),† arhānu (cf. Von Soden, *ZA.* 1936, 239, l. 130, with 244, l. 284), ša *išatu aklu ("which the fire (!) has eaten"), ša *kalmatu lapātu ("which the worm has touched") Other words (less easily explained) referring to the palm and its dates will be found in Meissner's list, *MV AG.* 1913, 2, 23.

Deimel (OrntZ. 16, 1925, 55, and *D.* 15, 134) gives the various qualities of dates in the period of Urukagina (*Turk.* 121) : *zū. lum-sīr (sweet, first quality) : zū. lum-uṣ (second quality): zū. lum-ṣīr or zū. lum-ša(g)-ṣīr : zū. lum-śīr.46(g)-da *gir̄-ra-gal-gal," grosse Datteln von Braunbäumen mit (samen von) Schwarzbäumen gir̄-ra (gemischt (?): zū. lum-śi-gal-gal-su-na (" Datteln von Braunbäumen gross an Fleisch ?" or "mit dicker Haut ?") ."

The word for the rope used by the man who climbs the palm to fertilize the dates is *tubalū (Aram. tubhlyā (Jensen, *c.f.* : Meissner, *MV AG.* 1913, 2, 41). I have seen him, carrying the pollen in a little muslin bag, as he climbs the palm with both hands and feet, having the rope in a round loop himself and the tree to support him, exactly as described in Pliny *NH.* xiii, 7. It is noticeable on one of the Tell Halaf sculptures (a district far north above the usual latitude for growing dates) that this simple method of climbing the palm was unknown, for here the climber goes up clumsily on a ladder. Dates are used in *MT.* thus :


*Int.* : *Ears, †, eat for seven days, AM.* 35, 1, 9, cf. 10. *Enema (cf. under quantities) : †, AM.* 56, 1, 6, r. 13 : 94, 2, 8.

Quantities : 10 carats of *zū. lum, †, bind on neck-muscle, AM.* 15, 3, 19 : † go *zū. lum, †, in enema, *AM.* 42, 2, 4, *dup.* 57, 3, r. 4. The special kind *zū. lum-ma-ni-tur-ki "Tilmun-dates" is used for *blains (ṣaqgāt), †, poultice, AM.* 32, 5, 1, 2, 6, 9 (*dup.* 93, 2, rev.),2 and in suppository.

1 The modern Basrah Arabic for "ripe" is from the root *riḥ* "moist". For the colours of dates cf. Pliny, *NH.* xiii, 9.

2 They are offered in a ritual, Thureau-Dangin, *Rituels,* 83.
.write, KAR. 157, r. 37. zú-lum-dir "red dates" for temple-muscle, ext. AM. 19, 1, 2.

(2) šamisid zú-lum "the base of the date", drink with honey and oil against the aḥḥāzu-demon, KAR. 203, iv, 48, dup. Pl. 34, 80–7–19, 356, 6. In Mosul, in order to combat epilepsy, a sheikh comes to the afflicted man, lays a knife on his head (i.e. the "iron" which is of such use in driving demons away) and then dates are fumigated with incense; the sheikh utters various charms, spits on the dates, and then gives them to the patient to eat (see my article, PSBA. 1906, 77). (The little stalk at the base of the date is called in modern Arabic at basmh, guma', but whether we have the šamisid zú-lum here is uncertain.)

(3) Kankaẓ of dates: ext.: Lungs, t, poultice, AM. 49, 6, r. 1, ½ qa : 55, 1, 9. Loins, etc., 2 mana, t, [bind on], AM. 51, 8, 9; for breast and loins, †, [in (?)] hot water bathe the patient, AM. 27, 7, 4. 2 mana, †, AM. 64, 3, 7, dup. 72, 2, 5.

Int.: Cough, with pigs' fat, etc., AM. 80, 7, 4.

Enema (allana): anus-trouble, † (?), AM. 47, 1, 4.

Quantities, besides those given above: 1 mana kankaẓ . . . , AM. 50, 3, r. 5. ½ qa, AM. 17, 8, 4. (Note that gāb dišpi "wax" is given as a variant of kankaẓ suluppi, AM. 98, 2, 7).

(4) "Water of dates": int. ½ qa with ½ qa of rose-water, etc., when stomach cannot retain food, drink, AM. 39, 1, 9. Strangury, †, in milk drink, AM. 59, 1, 21. Uncertain, ½ qa, †, AM. 50, 6, 9. Head, alone (?), with other treatments, drink, AM. 1, 3, 12. Stomach, ½ qa, †, drink, Kū. i, i, 28. To mix im. qū. en. na (yeast (?)), CT. xxiii, 50, 10. In Lane, Thousand and One Nights (new ed., 1859) a nebd (wine) of dates is made with dry dates in water, which are allowed to ferment slightly.

(5) Date-stones: [Swelling], bray alone in pigs' fat, anoint, AM. 73, 1, ii, 6. Temples, thread on bind on, AM. 104, 25. For breach of tabu (?) †, bind on for 3 days, AM. 15, 3, 5.

(6) Zid (powder) of date-stones: Eyes, reduce alone, bray, in rose-water, AM. 8, 1, 12.

In ceremonial or ritual washing in incantations "gimmaru is used in Maqlû i, 21 (Meier), where the tamarisk "cleanses" (elēlu), the palm "frees" (pasāru), the mastakal (soapwort) "brightens" (ebēbu) and the fir-cone ("se-ū-ku) also "frees" (pasāru).

In Syriac medicine the date is used in plaisters (SM. ii, 156, 370), and int. for the chest (ib. 201, 202, 261, etc.), stomach (365), the colon (ib. 504).

The date-harvest was in Marcheswan (i.e. October, Schwenzner, MVAG. 1914, 3, 95). In 1915, on 6th October, I noted a great encampment of date-pickers to the south of Basrah, across the creek, about 1½ miles from Ashar. To my mind these date-pickers had every appearance of being peripatetic, like the Sussex hop-pickers.

(On the subject of the date-palm in general see H. Danthine, Le Palmier-Dattier, 1937: Pruessner, AJSL. 1919–20, 213: V. H. W. Dowson, Dates and Date-Cultivation of the Iraq, 1921: and my article, JRAS. 1923, 233.)
| 59. | ^i_A—AM | šu (i.e. ildaq) -qu | 
| 60. | ^i_A—AM | a-d(t)a-r[u | 
| | ^i_A— Kur-RA | " šad(i)(i) | 
| | ^i_A—Bùr^4-RA | vi—ip-lu | 
| | ^i_A—Bùr^4-RA | ziq—[pu] | 
| | ^i_A—Bùr—RA | šit—[lu] | 
| 65. | ^i_A—Kù-Ga | (?) | 
| | ^i_A—Šita | ra—[a-ti] | 
| | ^i_A—Šita-Ná-A | ša ina ra-ti šu-[nu-lu] (?) | 
| | ^i_A—Kù-IN—Dir | ma-la ... | 
| | ^i_A—DU_{13} | lam— ... | 
| 70. | ^i_A—DU_{13} | ni-ip-[lu] | 
| | ^i_A—DU_{13} | ziq—[pu] | 
| | ^i_A—DU_{13} | šit—[lu] | 
| 75. | ... | ... | 

Mat. 1, ii, 3:

| 3. | ^i_A—AM | i[l-daq-qu] | 
| | ^i_A—AM | a-[d(t)a—ru] | 
| 5. | ^i_A—Kù—RA | " šad[i] | 
| | ^i_A—Kù-Ga | ... | 
| | ^i_A—Kù-Ga | ... | 
| | ^i_A—Šita | a—d(t)[a—ru] | 
| | ^i_A—Šita-Ná-A | a-d(t)a-r[u ša ina ra-a-[ti šu-nu-lu (?)] | 

^i_A—AM occurs tims in MT.: 

(1) Simply: ext.: Feet, † dry, pound, sift, put in river water, bathe continuously, AM. 69, 2, 7. For qī mishitty (bruise), † bathe, AM. 77, 5, 11.

1 Langdon, RA. 1931, šu—u.  
2 Langdon, in. šu.  
3 Langdon, ib. ša-di-i.  
4 Meek, RA. 1920, 166, bùr, adding another ^i_A—Bùr—RA.  
5 Or a—...
(2) **PA (tops):** *Mouth-trouble,* †, anoint tongue with *h*ī*metu-ghee,* put on tongue, *AM.* 23, 10, 4. Uncertain, † (?), boil in water and bathe, *AM.* 61, 7, 4.

(3) **Seed:** uncertain, *KAR.* 185, iii, 16.

(4) **Hashallatu (sour juice):** *ext.:* †, bind on, *AM.* 72, 2, r. 3.

The omens equally with the vocabularies suggest that "A-AM is a well-known tree in Mesopotamia: e.g. Gadd, *CT.* xxxix, 11, 49 (cf. 35), "if an "A-AM appears in the muspalu of a city, that city will conquer" (following an omen for "sarbatu, willow, and preceding one for "BU (cf. *DA.* 84, 22, and 36). The Semitic translation of an interlinear incantation runs (*iv R.* 27, 1–13: Langdon, *Sum. and Bab. Psalms,* 301).

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Rêum bêlim 4Du'uzu ḥamir 4Ištar
(bêl Arali bêl DUL-SUB -BA)
binu ša ina musarē mê la ištā
kimmat-su šâ šeri arta la ibnâ
ildaqqu ša ina raṭi-šu la irišu
(ildaqqu) ša isdanuš innašu
gû ša ina mušarē mê la ištā.
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"Shepherd, lord Tammuz, husband of Ishtar, lord of Aralu, lord of Dul-subba; the tamarisk which hath not drunk water in the musarâ, whereof the branch hath sent forth no shoot in the desert: the ildaqqu which they watered not in its pot, the ildaqqu whereof the root hath been torn up; vegetable which in the musarâ hath not drunk water."

Whether "A-AM-SA-KAL (De Genouillac, *ITT.* v, 2) is to be included here as an indication of its early presence in Mesopotamia is uncertain.

The Sumerian name "A-AM suggests "water + wild ox ", i.e. a strong juice: the tree grows equally with other fruit trees (pomegranate, fig, medlar, apple, *CT.* xxxix, 11, and *DA.* 84, 22). In *MT.* the few occurrences (simply, *PA (tops), sour juice, seeds*) are more for bathing than int. use.

I suggested in *AH.* 182 that it might be the lemon. That it could actually be the lemon is unlikely, but it might perhaps be the Citron: Bonavia (*Bab. and Or. Record,* 1888, 138 ff.) made out a good case for the existence of the latter in Assyria: he says (p. 141): "Theophrastus ... after the death of Alexander ... gives a very accurate description of the Persian and Median apple, which corresponds with that of the citron. The fruit was not eaten, but was used for various other purposes. It was grown from seed and fruited all the year round ... It was common in Persia and Media." *Pliny, NH.* xii, 7, is clear: he says that the citron-tree, called the Assyrian and by some the Median apple, is an antidote against poisons, and the fruit is never eaten, but it is remarkable for its extremely powerful smell. Cf. O. Schrader, *Reallexikon. Indog. Altertums,* 997: "In der That ist es erst Theophrast, [iv, 4, 2], welcher die früheste Kenntnis einer Agrumi-Art verrät ... Der hier gemeinte Baum ist nach allgemeiner Annahme Citrus Medica Cedra 'die Zitronatzitrone', nicht, was wir heute Zitrone (= Limone s.u.) nennen."

1 "Garden " is difficult, as the tamarisk is a wild shrub; at the same time the shrub might have been used as a hedge to a garden.
If this theory about ��A-AM were correct, we might see in adaru the
Heb. ḥāḏhār, traditionally Citrus Medica Cedra (Lōw, Ar. Pf. 46) (but see
FJ. iii, 20), and again in ʿaldaqqu, the word for “lemon”, ethrog (by a
metathesis), the Arab. utryj or ʿurunj (Lane, Thousand and One Nights,
ii, 220) might be a possible comparison.1 The ʾA-AM-DU₂₃ (= lam . . .)
“the small A-AM” might then be the lime (of Persian origin, but hardly
our lam . . .). The lime is planted in Mosul gardens, and the fruit is
brought in fair quantity from Mascat. (For an analysis of the lemons
found at Kish and Ur, see Anthropologie, 41, 27. A lemon-pip was found
at Nippur, Meissner, Bab-Ass. i, 209.)

T. ʾNU-ŪR-MA, nurnū, Punic granatum L., Pomegranate.
Various species of ʾNU-ŪR-MA are given thus (Meissner, MVAG. 1913,
2, 20, 10 ff. : cf. V R. 26, 21, g):

\[\begin{array}{ll}
\text{ʾNU-ŪR-MA} & \text{nu-ur-mu-ū (v. šu-u)} \\
\text{ʾLĀL-DAR (-RA)} & \text{ditto} \\
\text{ʾNU-ŪR-MA-KU₇-KU₇} & \text{a-la (?)-pa-an-nu} \text{²} \\
\text{ʾNU-ŪR-MA-KU₇-KU₇} & \text{ditto} \\
\text{ʾNU-ŪR-MA-ZAG-GA} & \text{ma-al-qu} \\
\text{ʾNU-ŪR-MA-ZAG-GAR-RA} & \text{da-aš-pu} \\
\text{ʾNU-ŪR-MA-BIL-LĀ} & \text{e-mi-iš-tu} \\
\text{ʾNU-ŪR-MA-DUG-GA} & \text{en-šu} \\
\end{array}\]

Cf. [šur]-šā-aš-mu (v. šur-šā-aš-nu, v. šur-šur-ru) = nu-ur-mu-u (Von
Soden, ZA. 1936, 238, 125).

Meissner, l.c. 33, took armūnu to be the equivalent of the Heb.
rimmūn “pomegranate”, but it was Ebeling who first suggested on the
grounds of the Armenian that nurnū was the pomegranate. In AH. 281;
after I had satisfied myself that nurnu actually was the pomegranate.
Mr. C. J. S. Thompson, who was then the Curator of the Wellcome Medical
Museum, showed me a late Babylonian tablet in the Collection (No. 14781),
which was a contract for making a collarette, bearing on the reverse a
roughly-scratched sketch of the ornament to be provided by the metal­
worker, showing it to be composed of pendants of obviously conventional
pomegranates (see my sketch in AH.). The text (l. 2) mentions 41
nurnū ḫurāṣī “41 pomegranates of gold.” In the Tell el-Amarna letters
(TA. No. 25, ii, 4) we find “5 nur[m]d of ṣanš[AG-KAL]”, and in ib., No. 14,
ii, 47, “1 nurimdu ³ of silver”. The pomegranate was, of course, very
popular as an ornament in ancient times (1 Ki. vii, 42 : Ḥdt. vii, 41 : as a bead, Beck, Archaeologia, 1927, 29).

It occurs thus in MT. :

(1) Water : ext. : Eyes, †, in honey, ūmetu-ghee, and castor oil,
[apply], AM. 17, 4, 4. Ears, insert in cedar-blood, AM. 33, 1, 40 : cf.

1 The Skr. for lemon is nimbuka, the Hindustani limbu, limu, or ninhu (FR., 2nd ed.,
115). [See two articles by H. W. Glidden in J.A.O.S. 57, p. 381, and 60, p. 57.]
² V R. 26, 23, g-h, has
\[\begin{array}{l}
\text{23) ʾNU-ŪR-MA-KU₇-KU₇ = ku-tup-pa-nu} \\
\text{24) ʾNU-ŪR [sic]-AL-ḪAB-BA = lag-pa-a-nu} \\
\end{array}\]
³ This form (nu-rim-da) occurs KAR. 182, r. 24 (put on neck against ghost).
KAR. 202, iv, 23. † [apply], AM. 34, i, 18: a shekel, †, blow in by reed, AM. 35, 2, 2 (cf. AM. 36, 1, 16): †, [apply], AM. 37, 10, 5.

Enema: Breast affected, alone, Kü. ii, iii, 61.

(2) Rind (BAR): Eyes, †, apply, Scheil, RA. 1921, 6: “yellow eyes,” prob. alone, [apply], (in contrast to LA of pomegranate, next line), AM. 12, 6, 7. [Swelling], anoint in fish-oil, AM. 73, 1, ii, 9. Head, †, in cedar-oil anoint, CT. xxiii, 50, 16.


(4) Rind (SU): Swelling, feet full of blood, with gazelle-dung bray, bind on in rose-water, AM. 73, 1, 20 (dup. KAR. 192, 15).


(8) Aban *nur[mî (?)] (= KÂ — bîr (bi-îr) — ûâš-[b]îl), CT. xii, 48 vi–v, 1.

(9) *nūrinbi (flour of the fruit): †, apply to the sick place, KAR. 192, r. 2 (right), 17.

(10) Root: uncertain (jaundice), Kü. iii, iii, 27.

(11) Some part, uncertain, alone for woman’s disease, on wool in uterus, KAR. 194, iv, 18.

(Note that the species *NU-UR-MA- KU- KU occurs AM. 105, 1, 8, used with sweet oil.)

The medical use, it will be seen, is similar to that of SM. for the pomegranate, i.e. eyes (SM. ii, 658, juice; ib. 93, rind): ears (ib. 115, rind : 116, extract : 665, juice): abscesses (ib. 175, juice : 359, rind): int., ib., 231, 677. Its use in MT. for “yellow eyes” is paralleled by its employment by Asaf (ed. Ludwig Venetianer, ii, 34) to get rid of gall. In India the flowers and rinds are astringent, used as vermifuge, and for the stomach; the juice a cooling drink, and the acid juice used for ophthalmia; the root-bark is a febrifuge, and is used for tapeworm, leucorrhœa, and passive hæmorrhages; the seed for the stomach (BMM. 304). The use of PA (tops) on swellings or blisters is reminiscent of Diosc. (i, cliii), who says of the Cytinus, the name for the flower or part of the flower of the pomegranate, that it is used for sticking wounds together, in cataplasms, and on the gums and teeth.

*Nurmi forms a group in CT. xviii, 2, 3–5, with *ittu “fig”. In MT. it is prescribed for its “water”, “sour juice”, “rind”, or “skin”, PA (tops), “fruit”, “flour of the fruit”, and “root”. The “stone” makes it clear that it is not a fig (this is probably the large hard seed of the pomegranate): as for the rinds, every visitor to the Near East will remember seeing them in the bazaars. The various epithets matqu (“sweet”), daşpu (“honey-sweet”), emištu1 (presumably a feminine

1 Read thus, instead of simištu, on the grounds of [*NU]-UR-MA e-mi-il-ta, CT. xxiii, 50, 20.
from *enṣu* (*emṣu*) "sour ", *ṭēbu* ("good, sweet "), are all indications of the pomegranate, there being to-day three species in Syria, the sour, the moderately sweet, and the very sweet (*VK*. 355). Pliny, *NH*. xiii, 34, and xxiii, 57 speaks of nine varieties.

*nu-ūr-ma* is found in texts of the 3rd. Dyn. of Ur (the skin, *su*, De Genouillac, *ITT*. v, 3, No. 6905, *pl*. 39 : cf. *Turk*. 121, vi, 10, the rind for dyeing being thus recorded). *nu-ūr-man-sig₆* also occurs (same date, Scheil, *RA*. 1921, 55, 20). There is a mention of *nu-ūr-ma šarrī* ("pomegranates of the King") in Bur-Sin’s time (Myhrman, *BEA*. iii, No. 54). In late Bab. times they are reckoned by numbers : e.g. 500 *nu-ūr-ma*, as ginē for Beltis of Uruk (Ebeling, *Neub. Briefe*, No. C.62, 5). The *ziqqi* are mentioned, *ABL*. 814, r. 16). The trees are designated by *gapnu* (ga-ap-nu), e.g. Strassmaier, *Darius*, No. 193, 8 " 30 ga-ap-nu šā *ṭittī* 20 šā irti-in-du mat-qu (= 30 " vines " of figs, 20 of sweet *turindu*). The forms *ṭurindu*, *ṭurnda*, and even *turinnu* (*Nbn*. 389, 5) appear to have supplanted the older *nurindu* in these texts.

In the *Vade-mecum*, *JRAS*. 1934, 781, *samḥaza(ḥ)unu* is used *ina* *parzillī* *nurma* (" in iron and pomegranate "). If I am right in seeing the Syr. ḫaldznā, *murex*, in *samḥaza(ḥ)unu*, then we may see in this quotation a recipe for dyeing purple with murex, and mordanting with iron and pomegranate-rinds, the latter being well known in dyeing (*CPF*. 910). At Basrah I was told that the pomegranate rinds were ground up and mixed with water (probably the *ziḏ insī* of *MT*., p. 315) and used for dyeing yellow (cf. Olivier, *Travels*, i, 229, for a mention of pomegranate rinds for dyeing : and also cf. Pliny, *NH*. xxiii, 57). In Mesopotamia, pounded pomegranate skins are used as a preservative rubbed on kelek-skins (on which the keleks or rafts float) to prevent them from rotting (Layard, *Nin. and its Remains*, ii, 98).

In an Assyrian love-charm the suitor is advised to recite a charm over an apple or a pomegranate, and then give it to the lady of his choice (see *ḥasḥuru*, p. 304). Hehn (235) thinks that the apple of Paris was the pomegranate. *Nurma* obviously contains the consonants of the Heb. rimmôn.

U. *miš-mā-kan-na*, *musu(k)ēnu*, *Morus alba* or *nigra* *L.*, mulberry.

D. 314, 57, still quotes Haupt (OLZ. 1913, 489) = *Acacia Nilotica*, but I think the evidence is in favour of the mulberry.

In Samasu-iluna’s time *giṣ-uk-a-na* and *ga*n were cut down in Yadiḥabu and Guti (Scheil, *RT*. 1897, 57). Tigglat-pileser iii (ii R. 67, 24) says that he cut down the *šārī* *musukkanī* so šī ḫarišu (of Kin-zir) at Sāpī, i.e. mulberry plantations, planted against the wall, with which cf. *VK*. 344 : " Some trials have been made of mulberries trained against a south wall, and the result has been a great improvement in the fruit." Sennacherib obtained the tree from the town of *Ḥarrāt* in Babylonia, as tribute (*Lucck*., 26, 55) and Darius ([*miš*-]*mā-kan-na*) from the land of Gandari (*MMAP*. xxii, 8, 25). 6 *miš-mā-kan-na* are mentioned in *ABL*. 566, 9, of 6 cubits’ length and 1 nakubu (thickness) each.

From Anp. onwards it was constantly used in Assyrian and Babylonian buildings (see *MA*. s.v.): it was the material for chairs (*Johns*, *AJSL*. 1917, 63), spindle-whorls (see further), and even pegs for
a drum (Thureau-Dangin, RA. 1920, 66, 27). Actually Layard (Nin. and its Remains, ii, 37) mentions a beam, probably of mulberry, discovered in his excavations at Nimroud.

In *MT.* it is rare: *KAR.* 208, 9, gives *PA ^miš-má-kán-[na]* among many others, use uncertain: *CT.* xxiii, 33, 17, prescribes the *PA,* .foundation beam, to bind on head. In a ritual (*KAR.* 223, Ebeling, *MAOG.* v, 3, 5), 30 spindle-heads of *tamarisk*, and 30 of *^miš-má-kán-na* are to be threaded on a two-coloured cloth, and then 60 knots are to be tied between them: these knots, of course, correspond to the sixty days of the two months of Nisan and Iyyar in l. 6. Then 30 *șe* of *^miš-má-kán-na* are to be threaded on red wool, and 30 knots tied; then 14 *gig* of laurel are to be threaded on red wool. In *ADD.* 1042 (re-exd.) a group occurs containing *PA* of *^miš-má-kán-na* and various other fruits, as well as certain plant-drugs not defined by *PA,* presumably an apothecary's list.

In *AH.* 181 I suggested the mulberry as an equivalent, and I think that the evidence is satisfactory. The mulberry was cultivated very early in W. Asia, and is believed to be native to Persia, Armenia, and the Caucasus (*BMP.* No. 229: *VK.* 343). Black and white mulberries grow in Palestine (*FP.* ii, 514) and Mesopotamia (Ainsworth, *Assyria,* 35). The wood is admirable for carpentry.

The Sumerian name "Měsu-tree of Magan" suggests a belief in its origin as further south than Mesopotamia. A Semitic form of the word is given as *šamsukannu* in *VAT.* 9000, dup. of *Pt.* 40, 82–5–22, 576, r. i, 11. *Musukannu* has all the appearance of being the original of the Greek *ovkámworos* "mulberry". Zimmern identified the Heb. *nasna* of Is. 40, 20, with it (*ZA.* 1894, 111) and consequently we have here the Hebrew for mulberry.

V. 1. *iamEL,* *iamakkullaku,* perhaps a *Zizyphus.*

2. *iamArzallu,* *Crataegus Azarolus* L.

3. *iamKalá,* *iamnaniqu,* *Zizyphus Spina-Christi* L.

The difficulty is to distinguish between the three plants. Meissner (*SAl.* 8547), from the equivalence of the stone *abamEL* = *abamar-zal-lu,* very reasonably thought that *iamEL* might be the equivalent of *iamarzallu.* How far this may be correct depends on the Assyrian view of the similarity between the fruit of the *Crataegus* and that of the *Zizyphus* (jujube). Indeed, it is possible too, that *iamEL* represents the Syr. *'elá,* *'alá,* *rubus,* *palívrus.* Such an equivalence is, however, contra-indicated by *Mat.* 88, 4, 6 ff.:

| [TI]M (?)-GAL | *iamZIP-pa-[tu]* |
| *iam*TI| *iam* |
| *iamBIL* (?). . . -GAR | *iam* |
| *iam*EN- . . . . . . | *iam* |
| *iamZIP- pa-lu | *iamAK-kul-la-[ku]* |

Some of these can be augmented from *Mat.* 86, 12–10, 14:

**TIM-GI-ŠAR** | **ZIP-pa-tum** | **AK-kul-la-ku**
and CT. xi, 45, i–iv, 15:

ú-šu-úš | ı̈am[tim-gi] | ...-ga-ku | mi-id-ru

and CT. xiv, 33 (K. 9182) + xviii, 21 (79–7–8, 188), joined by Langdon, RA. 1910, 33:

ı̈am-tim-gi | mid-r[um] | ...-kit (?) ...

Cf. Meissner, MAOG. ii, 3, 1929, 8, 135, and 16:

hu-ul-pat (?) | Ḥul-ki (?)-gar | mi-id-ru

In the VM. (K. 4152, Pl. 44, 33, K. 4140B, Pl. 42, 9, and “K. 11386” (prob. K. 11368), Pl. 42, 9, and Mat. 88, 1, 58), we have:

ı̈arzallu | ina kibši maš-da

“Arzallu in relation to the footprints (track) of a gazelle”.

ı̈am-EL occurs in the same text (83–1–18, 692, prob. same tablet as S. 1701, Meek, RA. 1920, 181, dup. of K. 4103, Pl. 42, 4, and K. 8807, ib. 3):

ı̈am-EL | ina lipî šir qi(n)ni

“ı̈am-EL in relation to the fat of a ‘snake of the nest’”.

The presence of these two, ı̈am-EL and ı̈arzallu, in different parts of the same text would also compel us to see a distinction between the two. Moreover, there is a contrast shown between ı̈am-EL and ı̈amarzallu by the simultaneous appearance (apparently) of both in the same prescription (containing more than 40 drugs) (AM. 59, 1, 37 and 39), but, apart from the fact that the det. of arzallu is uncertain, the presence of both might be due to an error, owing to the large number of drugs in the prescription. Such an error occurs in AM. 98, 3, 9, and 10, where ka ı̈am-tim is repeated in the form KA-A-AB-BA, there being altogether 23 drugs prescribed.

Taking the group (c) first (ı̈amkalû, ı̈amnanigu), we get in K. 8249 (Pl. 31) + 82–5–22, 576 (Pl. 40), iii–iv, dup. VAT. 9000:

11. ı̈amna-ni-qu
12. ı̈amka-lu-u ut-liš iv-GIR
    ka-zi ري la iši inbi-šú kima tar-ma-ni

In DACG. 112, I tried to show that the translation of this text indicated that we had in ı̈amnanigu the Arabic nabq, Zizyphus Spinacea-Christi L.：“the ı̈amnanigu = the ı̈amkalû, in the common speech ‘thorn’, not having juice, its fruit like a sling-bolt.” This exactly describes the Arabic nabq, which has a drupe ovate-globular (i.e. approximating to the tarmanu, the sling-stone shape),2 as large as a hazel-nut, with a rather dry

1 See Landsberger, Fauna, 4, 42. It is difficult to explain either of these two.
2 Tarmanu = ə̄bə̄nasaggitum, the thunderbolt, the small nodule of iron sulphide (DACG. 111): the root is rāmā “to throw”, the word itself being equated with belû (V R. 41, a–b, 8 + ii, R. 31, No. 3, 8), a weapon at one time considered “arrow (?)”. Zamarum sa belû, SAl. 2847, i, is the whizzing or hissing of the missile. Kālû, as a mineral, has the meaning “yellow ochre” (DACG. 31) but whether this has any relation to the yellow colour of the nabq is doubtful.
astringent pulp (FP. 2 i, 289), "oblong, about the size of a sloe, and much eaten in Egypt and Arabia" (PC. xxvii, 789). The lack of juice is very noticeable, as anyone who has eaten this fruit will remember.

Hence we may consider the equivalence of ʕammaniqu with the nabq as certain. Indeed, there is every probability of the two words being the same, through some variation of n and b, paralleled perhaps by ʕNannaru for ʕNanmaru.

2. Next, in continuance of this value for naniqu, we can discuss the ʕamarrallu, which has every probability, as will be seen, of being similar.

In AH. 54 I suggested that the nearest Semitic equivalent to arzallu was the Heb. 'ázrār, Crataegus Azarolus, the Syr. 'אצרדית, the Arab. zu'rūr,1 the origin of the word Azarolus. C. Azarolus, the azarolier of the French, is the Neapolitan medlar with a fruit like a little red cherry; but we have to consider certain variations in the meanings of zu'rūr as used by the Arabs. Lane (Dict., s.v.) describes the zu'rūr as the fruit of a well-known tree of two species, red and yellow, with a round hard stone, resembling the nabq, now applied to the medlar; BFO. ii, 663, gives sarrour, Crataegus Sinaica Boiss., or C. Azarolus L. in Mesopotamia (see FJ. iii, 249 ff.). The zu'rūr of Mesopotamia has a yellow, juiceless fruit, about the size of cherries, which ripens in winter. FJ. iii, 141, 250, gives also as values Rhamnus disperma Ehrbg.: R. Palestina Boiss.: and Prunus insititia L.

In MT. ʕamarrallu occurs thus:

Simply: ext.: Hand of Ghost, anoint in oil, †, and put on neck in leather bag, AM. 95, 2, ii, 10 (dup. KAR. 184, 20): anoint in cedar-blood, ditto, KAR. 182, r. 20. For ghostly attack on neck-muscle, †, anoint temples in oil of cedar, AM. 97, 4, 23. Anoint temples, †, in oil of cedar, CT. xxiii, 43, 5.

Int.: Strangury, drink, †, in wine or beer, AM. 57, 1, 33. Hand of Ghost seizing him and ʕās-ʕūs-ʕūs pursuing (?) him, drink, †, AM. 76, 1, 26 (or does the ʕūs represent some venereal trouble?).

Obviously from these instances it is not of much medical value.

In finally deciding about its exact meaning, it should be noted (a) that in the N. Semitic districts the nabq is actually used for the Z. Lotus L., in place of Z. Spina-Christi, already mentioned (FJ. iii, 135): (b) there is another equivalence for nebq, 'āzirān (FJ. iii, 138) which suggests a doublet of zu'rūr: and (c) there is an undoubted confusion in zu'rūr for Mespilus and Crataegus (FJ. iii, 244 ff.). There would appear, however, to be no such confusion between the ʕammaniqu and the ʕamarrallu, so that I think we may accept the ʕammaniqu as the nabq in its meaning of Zizyphus Spina-Christi (particularly since one of the vulgar names for it is simply "thorn"), and the ʕamarrallu as the C. Azarolus.

(a) Leaving ʕammaniqu as the nabq, and ʕamarrallu as the Azarolus, we can go on with ʕamarru. . which occurs thus in MT.:

(1) Simply: ext.: Neck, exact (ext.) use uncertain, †, AM. 14, 8, 5. Temples, bind, †, AM. 14, 2, 6. Swelling, †, anoint, AM. 75, 1, iv, 10 (+ AM. 18, 5): with cannabis in petroleum anoint, AM. 73, 1, ii, 8. For a woman in childbirth, her abunnatu (sexual part) being loosed, (but

1 For an amusing parallel to the confusion in liquids in ʕamarrallu and 'אצרדית, cf. the Arabic wirrwir "revolver".
it does not stop her walking), dry and bray, †, mix with geodes, anoint and bind on, KAR. 195, r. 30. In purifying stables, to rub on all the horses, KAR. 9i, r. 11. In an ointment of ZID-ZID (powder) of ℡i�펼 (willow) and of ℡adapanni (juniper), in oil, KAR. 90, r. 19 (cf. 17).

"(2) (Green) ‘sアンEL while it is yet green’. Head (?) †, AM. 5, 2, 2. Stomachic, mixed with pig-fat, alone, drink, Kii. ii, 19: drink alone, ib. i, ii, 9.

(3) Seed : ext.: Feet, apply locally with seed of daisy, AM. 74, 1, ii, 36: bind on with seed of daisy in rose-water, ib. iii, 8. Swelling, bind on. AM. 75, iv, 5, 6 (+ 18, 5). Lu气 trouble or cough, poultice, AM. 49, 2, r. iv, 6.

Int.: after drinking beer and a result (uncertain) follows, drink this in wine, Kii. ii, 49.

(4) PA (tops). After cleansing mouth, †, in fat (uncertain trouble), poultice, AM. 24, 5, 8. Of  따른EL ... , for teeth, †, AM. 28, 1, 8.

Now although  따른EL and  따른arzall у are not interchangeable, the clue given by the two minerals of the same names, which are one and the same (DACG. 108) may help us. There are other forms of Zizyphus, distinct from our Z. Spina-Christi, e.g. the Z. Lotus L. (“Brustbeerbaum”), which is the Syr. ‘alah, which is conceivably the same as our  따른EL. If we follow this line up, we may see in the word  따른zippatu (the equivalent for  따른EL) a cognate of the actual word Zizyphus, which appears in Arabic in the forms zィzィf, zィzィf, in IB. anzujaija, and in the Syr. zィzィp (FJ. 3 ii, 138 ff.).1 The resemblance is certainly striking.

Again, the occurrences of  따른EL in MT. are certainly more numerous than those of  따른arzall у, and there is certainly some similarity between the medical use of it and the Z. vulgaris in medicine. The red, oblong fruit of the Zizyphus is used in India in decoction as an aperient, suppurative, and expectorant, and in habitual constipation, rheumatism, and chronic skin diseases. The Z. jujuba Lamk. (the bark, leaves, and lac being the parts used) is prescribed as: (a) a paste, as poultice to promote suppurations of boils; (b) decoction, as astringent, and is used to check haemorrhagic fluxes (BMM. 220–221). Watt (EPI. vi, 367) amplifies this by saying that the fruit is said to purify the blood, the bark and seeds for diarrhoea, the root in decoction in fever and delirium and, when powdered, as dressing for wounds, while the tender leaves and twigs are used in the form of paste for boils.

To sum up the distinctions: in (c)  따른maniqu we may see the Arab. nepq in its meaning of Zizyphus Spina-Christi, its fruit described by the Assyrian scribe “in the words of the common people, ‘thorn,’ without juice, its fruit like a sling-bolt”: in (b) we have  따른arzall у, by its name the same as the Astarus, the Arab. zaʔrăr and the Heb. ʷzɛʔrăr, the Crataegus Astarus: and in (a) the  따른EL, which from a comparison with

1 Note ... ことがありますいうぶ まな ばす ... , apparently from the Amanu ... (Nabonidus, BA. ii, 217, 11).
the two similar words for stones abanEL and al'zallu, should have something in common. Here we may perhaps see in the EL the Syr. 'ald, Z. Lotus, and in its Semitic equivalent zippulu a cognate for the Arabic forms of Zizyphus.

W. Şamru, Zizyphus vulgaris L., jujube.

Şallu şamri "a basket of şamru" occurs in the Assyrian "contracts", ADD. 1003, 1005 (1007), 1010, etc., frequently with other fruits. More important is it that gardens of şamri urqi existed in and around Harran (Johns, Domesday, 3, i, 6 ; ii, 5 ; iii, 5, iii, 3) with 300 qanni (i, 8) ("slips", Johs correctly "shoots") along with 150 şarbatu (which, I think, may be storax, distinct from šarbatu "willow"), which is here perhaps unlikely, and šulmu (ulubu), probably the Pistacia vera (p. 247). The Arabic şamr is the Heb. şamir the Paliurus aculeatus L. (= P. Spina-Christi Mill, FP. i, 288), common in Asia Minor, having a broad, brown fruit (i, 228 ; PC. xvii, 168). But this Paliurus immediately precedes the various species of Zizyphus in FP. (i, 288, 289), and it would surely not be a serious transference to see in the şamru (as the presumed equivalent of the Arab. şamr) one of the Zizyphes which produces the common jujube. Z. officinarum Medik is the jujube, the Arab. being innab, with a drupe the shape and size of an olive (FP. i, 289). It is a native of Syria, with a fruit blood-red or saffron in colour, sold in great quantities in Constantinople; a syrup is made of it, and when dried the fruit forms an agreeable sweetmeat. It is easily propagated by cuttings of roots or by suckers, and it grows to a height of 20 or 30 feet (PC. xxvii, 789). The jujube, according to Pliny (NH. xv, 14) was introduced into Italy in the reign of Augustus, produced from slips: "the fruit of the jujube more nearly resembles a berry than an apple." The şamru is apparently not prescribed in MT., although the jujube (Z. vulgaris) has certain mild virtues (BMM. 219).

X. (a) (šam) (Urzi(n)nu, probably the same as (b).

(b) (šam) (Mus(n)leu, Ficus sycomorus L.

The equivalence of these two will be seen on p. 247, where a group includes "plum", "mulberry", "almond", and even "fig". Urzi(n)nu occurs in MT.:

(1) Simply: Int. (??) : Diarrhea (prob.), with the astringent rinds of pomegranate, [drink (?)], AM. 95, 3, 12.

(2) PA (tops): Swelling, †, slit and apply locally, AM. 74, 1, 18, dup. KAR. 192, ii, 45. Poultice (disease uncertain), †, AM. 43, 1, ii, 8. Urzinru was found in the Mountain of Galašu (where lapis and gold occur) along with ḫašhuru (apple), ḫittu (fig), ḫišisalu, Weidner, Boghaz K. Stud. 6, Zug Sargons, 1922, 64, 29.

Mus-ki [sic] occurs in ABL. 467, r. 17: "In regard to the musk, trees, the trunks of which the ráb kāri will bring to the land of the Itai for

1 According to Abu’l fa’l, cited by Celsius (Hierob. ii, 188) the sumr of the Arabs is a thorny tree; it is a species of Sidra which does not produce fruit." (Smith, DB. iii, 1492). Forskal (P. Ae. iii) speaks of a sumr es-sultan called so by the Aleppines, but obscure.

2 ka-la-a nu-20, "he does not know how to retain ..., " the recipe ending libbāt ša ik-ka-šu "his stomach(s) will be bound ...". A sumr(s)-ni-wu-nu occurs, Epoch of Ur, Scheil ("arbusete"), R.A. 1921, 55, 21.
(šā) Ikšš, in this way has he spoken, saying ‘there are none, we have had none found’.” Here it is undoubtedly a tree (written with š for š).

In AH. 180 I suggested as a comparison the Heb. šiqmîm, Ficus Sycomorus L., by a not uncommon metathesis when there is an ṣ in the word (just as musakkanu is sukâčânos). In the text quoted from p. 247 it immediately precedes “mulberry” which, since the Ficus Sycomorus receives its name from its resemblance to the mulberry, bears out this meaning. (Bostock, Pliny, NH. xiii, 14, note 65). The tree, of which the Arab. name is jummai, is found in Syria and Palestine (FP. 2 ii, 516), and has a somewhat sweet fruit.

$^\text{š}\text{Gî6-PâR}$, $\text{lu} (?)$. . . .

$^\text{š}\text{Gî6-PâR-KUR-RA}$, $\text{ù} (?)$. . . .

These occur in the same group in the vocabulary Mat. 1, ii, 19–20, along with $^\text{š}\text{A-AM-KI-IN-DAR}$ see p. 312):

$^\text{š}\text{Gî6-PâR}$

$^\text{š}\text{Gî6-PâR-KUR-RA}$

The presumption will therefore be that it is something in the nature of the $^\text{š}\text{A-AM}$, which I have taken to be Citrus, but probably, since its connection is remote in the list, not closely allied to it.

$^\text{š}\text{Gî6-PâR}$ (or $\text{PâR} = \text{TâR}$) occurs in MT. thus:

(1) Simply: ext.: Feet, $\uparrow$, bathe continuously, AM. 69, 2, 7. It is described as śammu (šammi) TâR UD-DA (“a drug for the heat of the day”, probably) ($\text{mêru}$ ina tû sirkí bâ-ra, i.e. for bathing).

(2) Pâ (tops); ext.: Feet, with Pâ of licorice, Pâ of laurel, pine-turpentine, fir-turpentine, apply locally, AM. 74, 1, iii, 5: with chamomile and Pâ of fennel (šamranî) bray, apply, ib. 12: $\uparrow$, bind on, AM. 15, 3, 21. Stomach, $\uparrow$, poultice, Kû. 1, 1, 24: ii, ii, 42, 59, 63: ii, iii, 14, 60: ii, iv, 17, 53. Anus-trouble, $\uparrow$, uncertain use, AM. 58, 2, 7: $\uparrow$, poultice, AM. 57, 6, 10 (probably). Venereal, $\uparrow$, bind on end of penis continuously, mixed with fat, KAR. 193, 20 (dup. AM. 58, 6, 5). After cleansing mouth, $\uparrow$, boiled in water, and bathe, AM. 24, 5, 9. Swelling, $\uparrow$, apply, AM. 75, 1, iv, 10 ($+18, 5, r$). Doubtful parts: Ears, reduce . . . $^\text{š}\text{Gî6-PâR}$ alone, bray, blow into ears, AM. 36, 1, 8.

Note the omen: “if in the mušpâlu of a town $^\text{š}\text{Gî6-PâR}$ appears” (the other and following omens containing a similar protasis for the fruits (etc.), pomegranate, laurel, fig, vine, medlar, and palm (DA. 31, 1).

The plant would appear perhaps to be poisonous, since it is never used internally: it may appear with various fruits or laurel near a town. The best suggestion I can make for its identification is the Oleander, Nerium Oleander L., a native of the Near East, or Nerium odorum Sol. The N. Oleander is used in France to make a solution (of the leaves), to wash the head (LPG. 272). N. odorum Sol. (Herzfeld at Fars, Beth. ii, 34: Ascherson, in Löw. 422, not N. oleander in Persia, but N. odorum) is used in India, the root being for skin diseases, inflammations, and chancres; the root-bark and sweet-smelling leaves ext., a decoction of the leaves for swellings, and fresh juice of the young leaves for eyes (IMP. ii, 800).

$^1$ Sometimes written $^\text{š}\text{Gî6-TâR}$, AM. 58, 2, 7: 74, 1, iii, 6 and 12.
The oleander is certainly one of the most striking plants in the Kurdish hills, and I remember having seen it near Basrah.

šē-mur.

It occurs thus in MT.:

(1) PA (tops): Ext. Stomachic, alone, boil one mana in rose-water, cool, bind on, Kū. ii, 1, 9.

Int.: Stomach, with PA (tops) of licorice, etc., drink, AM. 39, 1, 6.

(2) Ḥašḥallatu (sour juice), AM. 72, 2, r. 2.

sam šē-mur, KAR. 203, r. 1, i-iii, 16. A šamšē-mur occurs (the PA used), Stomachic, poultice, Kū. i, i, 24. Cf. šamšē-mur or šamšē-mur-tu, AM. 61, 4, 6.

I can suggest only that as šē-mur = tumru "ashes", a possible line of research would be towards such a plant as the Dead Sea Fruit, Calotropis procera, RBr., which is said to grow also in Persia, Arabia, and tropical Africa (MPB. 1065). The description is given in Murray’s Handbook, Syria, Palestine, ed. 1903, 37, which, if it does not apply to the šē-mur, may be of use to future investigators: "On the Plain of Engedi the traveller will be able to illustrate for himself a remarkable passage of Josephus relative to the fruit called Apples of Sodom: ‘... There are still to be seen ashes reproduced in fruits, which resemble eatable fruits in colour, but on being plucked by the hands, are dissolved into smoke and ashes’ (Wars, iv, 8, 4). Here, beside the rivulet, a tree still grows with a singular fruit. Its Arabic name is 'Osher, and botanists call it Calotropis procera. The stem is 6 inches or 8 inches in diameter, and the height of the tree is from 10 feet to 15 feet. It has a greyish cork-like bark, and long oval leaves, which when broken off discharge a milky fluid. The fruit resembles a large smooth apple, hanging in clusters of two or three, and having a fresh, blooming appearance; when ripe it is of a rich yellow colour. But on being pressed or struck it explodes like a puff-ball. It is chiefly filled with air. In the centre a slender pod runs through it from the stem, and is connected by delicate filaments with the rind. The pod contains a small quantity of fine silk with seeds. The Arabs collect the silk and twist it into matches for their guns, preferring it to the common match, because it burns freely without sulphur. Thomson (LB. 617) says that at 'Ain es-Sultān, near the Dead Sea: ‘On the margin of this delightful brook grow great numbers of bushes, bearing a yellow apple, about the size and having very much the appearance of a small apricot, beautiful to the eye, but nauseous to the taste and said to be poisonous.’"
XV

VINES
(GRAPE, BRAMBLE, AUBERGINE)
VINES
(Grape, Bramble, Aubergine)

A. 1. **i*GESTIN, kararu.**
2. **i*GESTIN. GIR (-RA), murdinu, amurdinnu.
3. **i*GESTIN. KA (v. PIL), pil(l)lu.
4. **i*GESTIN. LUL. A, karan šelabe (v. šelibi) (see under Poisonous Plants, p. 142).
5. **i*GESTIN. SU. UŠ. (v. šū) RA (v. RU), šušrā.**

Meissner, MVAG. 1913, 2, 14, ll. 14 ff.: Mat. 1, i–ii, 11 ff. (= a) and 63, l ff. (= b): Ras Shamra (Thureau-Dangin, Syria, 1931, pl. xlvii):

<table>
<thead>
<tr>
<th>i*GE†IN</th>
<th>ka-ra-nu</th>
</tr>
</thead>
<tbody>
<tr>
<td>i*GESTIN-IGI-GUD (v. DUK !)</td>
<td>mur-di-nu (v. a-mur-din-nu)</td>
</tr>
<tr>
<td>i*GE†IN-ŠUR-RA</td>
<td>pil-lum (v. pil-lum)</td>
</tr>
<tr>
<td>i*GE†IN-HA-PAR-A 2</td>
<td>ka-ra-an še-la-be (v. še-li-bi)</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>i(e)-ni alpi (v. al-pi)</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>sa-ah-tu (v. ta)</td>
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<tr>
<td>i*GE†IN-GAM-ME</td>
<td>mu-zi-qu</td>
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<tr>
<td>i*GE†IN-IGI-GUD (v. DUK !)</td>
<td>i(e)-ni alpi (v. al-pi)</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>sa-ah-tu (v. ta)</td>
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<tr>
<td>i*GE†IN-GAM-ME</td>
<td>mu-zi-qu</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>ka-ra-la-nu (v. (kül(pil)-bi-nu) 3</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>ta-ra-la (?)-nu (v. ki-li-la-nu)</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>kip-pat (i*)karani (v. ka-ra-ni)</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>dil-lat (v. la-at) (i*)karani (v., )</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>iš-šu-na-tu (v. is-šu-un-na-tum)</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>ditto (v., )</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>ditto (v., )</td>
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<tr>
<td>i*GE†IN-GAM-ME</td>
<td>dil-la-lu (v. tum)</td>
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<td>i*GE†IN-GAM-ME</td>
<td>&quot;</td>
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<tr>
<td>i*GE†IN-GAM-ME</td>
<td>pa-pa-al[l]-hum</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>Š[i] (i?)-lu 6</td>
</tr>
<tr>
<td>i*GE†IN-GAM-ME</td>
<td>um-mu . . 7</td>
</tr>
</tbody>
</table>

(Ras Shamra gives the list, without Akkadian equivalents) in this order: **i*GE†IN, i*GE†IN-GIR-RI-A, i*GE†IN-KA, i*GE†IN-LUL-A, i*GE†IN-GA-RA-AN, i*GE†IN-GAM-MA, i*GE†IN-ŠUR-RA, i*GE†IN-IGI-GUD, i*ELLAT-GE†IN, i*GAM-MA — GE†IN, i*GA-RA-AN-GE†IN. Thureau-Dangin draws attention, p. 227, to certain differences from Meissner’s publication.)

1 Mat. (a) and II R. 45, 4, omit.
2 Mat. (a) i*GESTIN-?A, II R. 45, 4, omits this line and l. 24.
3 II R. 45, e-f, 63-4, gives ka-ra-an li-es and . . . (ka-ra-an) la-a-ni as values for **GE†IN-GAM-MA and omits horizontal line after dil-lat i*karani.
4 Mat. (a) has an additional line. . . -GE†IN = . . .
5 Mat. (b) has a horizontal line here.
6 Mat. (b) si (?)-hum . .
7 Meissner u[ṃ]-mi. For the continuation of this text see p. 302, after i*MA.
DICTIONARY OF ASSYRIAN BOTANY

(a) "Geštin, karānu, the grape-vine, wine: cf. Schrader, quoted Meissner, MVAG. 1913, 2, 32, on κάτωνος):

It occurs in MT.

(1) Geštin (without det.): As medium for drugs: varying with kurrunu-beer, AM. 39, 9, 4: varying with beer, AM. 48, 4, r. 11: 58, 4, 14: 59, 1, 34: 60, 1, 8: 89, 1, 9: no alternative, AM. 66, 7, 13: 72, 2, 4: 76, 1, 10: 88, 3, 7: 97, 6, 4.

(2) Geštin: As medium for drugs: varying with kurrunu-beer, AM. 87, 1, 12.

(3) "Geštin: As medium in which to steep drugs, AM. 96, 1, 13 (cf. 56, 1, 6).

(4) "Geštin, †, AM. 43, 1, 25.

(5) Geštin- kalag-ga "strong wine": AM. 66, 1, 5: as medium, 66, 7, 9: with alternative (unknown), AM. 59, 1, 42.

(6) Geštin-dug-ga "sweet wine", apparently as medium (without alternative), AM. 2, 7, 7: as drink, simply, AM. 21, 4, 5: 49, 6, 8: 80, 1, 16.

(7) Geštin-bil-lā (without a at beginning), AM. 37, 10, 9: 84, 4, iii, 5.

(8) ("Geštin- šur-(ra) (= šaḫtu) "squeezed grapes" (Meissner, MVAG. 1913, 2, 33): drink, †, AM. 40, 4, 9, dup. 54, 3, 12 ff.: 60, 1, 20. Used as medium, AM. 43, 6, 8: 48, 2, 5: 59, 1, 26: 63, 1, 13: 69, 3, 12: 82, 2, r. 11. Let stand with beer (etc. (?)), AM. 50, 5, 3: with bil... , AM. 55, 6, 6. As enema (or sim.) AM. 57, 1, 1: in rose-water, AM. 58, 2, 6. As simple šaḫtu, Waschow, MVAG. x, 1, 35, l. 23.


Note also the following words:

"Geštin(-na)—far-a, mu(n)ziqi, D. 211, 19, dried grapes, raisins as Ebeling (Neub. Briefe, 310) suggests, for Meissner’s ‘‘Mischwein’’ (MVAG. 1913, 2, 33). Mentioned along with dried figs (tutta pišā) among

1 The root šaḫtu "to press" is well known: it occurs in MT., AM. 14, 5, 7...ar longevity of Mēšu šu šur-āl "while it is yet green thou shalt hay, squeeze its water", and AM. 25, 6, ii, 13...[arju-su-šu-ša-sa mēšu šu šur-āl, the same. It is applied to eye-troubles: if a man’s eyes ši-šu-šu-ša (bulge ?), AM. 13, 3, 4, cf. šudāšu šu-ša-ša, V R. 31, c. 69). Note ka-ra-an ša-ah to as the translation for "Geštin-šur-ra, KAR. 42, r. 12-13. and Geštin-šor-ra = šahū karānu (MA. 873) is the grape-presser.

2 On this as perhaps "mother of vinegar", see Bab. 1934, 124, and RA. 1929, 49.
offering made by Nebuchadnezzar (Pognon, Wady Brissa, vii, 24: Langdon, NBK. 169, vii, 24). I found red dried grapes from the mountains at Mosul eaten for cough.

Kililanu must be connected with the late Heb. kulhā “crown”, like kānškilili, associated with the convolvulus, Scammony (p. 13), and consequently the tendril of the vine. Equally dillatu will be the Syr. dālīhā, brachia, palmites (FJ. i, 68; Meissner rightly “Weinranke”, MVAG. 1913, 2, 33, as also kippatu, from the root knp, which must have the same meaning).

Iṣ (v. is) bus(m)atu is applied apparently to other trees than the vine (GE. ix, v, 49, if this be not the vine). On ummi ... “die Mutterpflanz”, see Meissner, MVAG. 1913, 2, 33. (For a word for a grape-cluster, cf. šiskilatu = Heb. 'eskōl, DACG. 103.)

The word for “wine” can be geštin, geštin, gestinpl, or gestinpl, in ADD. (tablets of the later Sargonic period). But “vine” may also be geštin, since it grows in an aššar “orchard” (ADD. 773, r. 2). In late Bab. times special wines came from māt'izzallam, māt'Tu'immu, māt'Sinnim, māt'Hilbunim, māt'Aranobantim, māt'Sāham, māt'Bit (?)-bubatim, and māt'Bildtim (Nbk., Grotefeld Cyl., 1 R. 65, 22). māt'izzallam may be the māt'Nizalli of ADD. 1000, 1, and 1001, 1, and māt'Hilbunim is, of course, Helbon. šiK'a-ra-nu is definitely the grape-vine (often defined by the addition of gapnu, while ka-ra-nu is “grapes” (Nbn. 606).

On the question of inu as meaning “wine”, I am in doubt (see Jensen, ZA. i, 186, and literature in MA.). It depended first on the equivalence mu-tin = i-nu (ii, R. 25, a, 38). From Br. 1322-1324 mu-tin certainly has the value karanu “wine”; but it also has the value bēltu “lady” (SAI. 773), and it might be that inu is merely a variation of enu “lord”.

Nor can I think the passage quoted by Zehnpfund as convincing (BA. 1890, 524). Hehn has translated (BA. 1906, 310, 28) the passage saddurru gug ganē gurini niqnaqqa iš-ši ina sa-am-me-e u iš-ši... , but he does not offer a translation or commentary for iš-imu. Equally, I am in doubt about the passage adduced from a letter by Scheil (RA. 1917, 185), mentioning also karanu, and Tilmun-dates:

2-ta šab (= pa + iš) ši-mēš nunuz
ša sadīti

Here be transliterates ši-mēš nunuz as inēšlpiš-u, and translates “deux shappu de vins, cru, de la montagne”.

I think, therefore, that it is uncertain whether we are to see the origin of our word “wine” in Assyria, although perhaps the equivalence mu-tin = inu may be academically an indication. I do not believe that inu was

1 Of. Mat. 88, 4, 22 ... [z]· ka-ra-ni | ūku-ar dil-ta-tin (?).
2 There is a difference between gapnu and gupnu, although they might excusably be confused, since the sign often used for the first syllable may read both gap and gup. This was pointed out by Thureau-Dangin (HC. 43), gapnu being the Heb. gēphnē for “vine”, and gupnu meaning the trunk of a tree. In Harper, Bd. 1894, 423, 27, gu-up-nu is spelled out, in a grove of gēphnē: in Camb. No. 192, 23, gù-gap-uu is mentioned, ina šap-lu ina gù-ap-nu u šikšmaru ina šar. Anp, binds the decapitated heads of warriors ina gup-ni ša kēd(e) (A.KA. 308, 43), ina gup-ni ša tarbas akallī-ša (ib. 320, 71), and ina gup-ni ina li-me -i ili-ša-nu (ib. 295, 118). gù-gup-ni ina li-me -i ili-ša-nu (ib. 320, 71). In Syriac it is guphne (plur.) which is the vine.
in any general use as wine. The probability is that Delitzsch (Wörterbuch 350) is correct in referring it to a similar word (inqu) ša škāri (following ša mē₂, Lesestücke 3, p. 85).

Inbu, long known as "fruit" (MA. 68, and a full list of examples, HWB. 97). In Nbn. 369, 1 [in]-bi-i-ti describes vines of grapes, "vines" of figs, "vines" of pomegranates, and vines not bearing: in Nbn. 606, in-bi-i-ti similarly describes various grape vines and "vines" ("ngup-pu!") of pomegranates. At the same time in-bi-e must surely have a more definite and special meaning than merely "fruit" in the contract, Cyr. 97 mentioning ... mana, 5½ shekels of gold delivered to goldsmiths to make into 35 in-bi-e. What, too, is "20 (or) 30 gur of en-bi for the bit alpē (house of oxen)" (Ebeling, Neub. Briefe, No. C. 113)?

2. "Geštin- Gir(-Ra), (a)murdi(n)nu, Rubus, bramble, rose.

In addition to the references in D. 210, 9, cf. the following in a broken vocabulary from Nineveh:

| [inam-nu ina Sū-ri | -tū |
| [išam-mur-din-nu ina Sū-ri | |
| [išam-mur-din-nu ina Sū-ri | |
| [iša (?)-mur-din-nu | |
| sama (?)-mur-din-nu | |
| -ra-nu | |
| -ra-nu | |
| -u (?) | |

See also Mat. 88, 5, 31-2.

Jensen, KB. vi, 516, took this to be the Arabic warad "rose", probably rightly, the Sumerian group "vine + thorn" bearing this out (cf. AF. 55). Meissner (Beitr. ii, 6) mentions the form išmu-ur-ti-in-nu ("seven hours of išm."). Weidner, Boghaz Stud., vi, 1922, 64, 30, and compares the forms amurriqtinu, murriqtinu (MV AG. 1913, 2, 32). It would appear to have its origin in the Assyrian šamamardīwa = ašagu, thorn.

That it means the wild rose may perhaps be apparent in a line from Reisner's Hymnen, No. 60, 16:

[ina]bī-bī-šu irt-ti-tu ša-di-i mur-din-na in-ta-na
"[There] in the mountain-thorn produced the rose."

Another quotation, however, certainly suggests that the scribe had the teasel in mind, where Bēlit answers:

a (?)-ta-al-la ge-su a-šab-bīr-na a-mur-din-nu a-na ni-ip-ši a-nap-pa-aš
"I will arise (?), I will break the gešu-thorn, I will card the bramble to wool."

(Craig, Rel. Texts, i, r. 1: Martin, Textes Rel., 1903, 101). FJ.2.i, 587, however, says that the Dipsacus fullonum Mill. or teasel for carding wool

1 For gešu "thorn", cf. amatu anšītu ša gešu ina libbītum lu ndefa "let this word be fixed in your minds like a gešu" (Von Soden, ZA. 1936, 18, 68). Cf. also Abp., Rassam Cyl. viii, 84, "between great trees, gi-ip-ši (and) Geštin-Gir (brambles), a way of gi-if-ti-ti (thorns)".
is unknown in Arabic lands. It is, of course, possible that some other similar plant, perhaps a thorn, was used to card wool, but it must be noted that the peculiar virtue of the teazle is the little hook at the end of the spine. I am indebted to Mrs. Crowfoot for the following valuable remarks on the teazle. A teazle, she tells me, does grow wild in Syria-Lebanon and, like our own wild teazle, is near the cultivated Fuller’s teazle, *Dipsacus fullonum*, the “tame teazle” of Gerarde, but it does not grow in Palestine, and Mrs. Crowfoot never heard of its use. The teazle, she says, is used to tease cloth, the heads being fixed on the rim of a wheel, or on a cylinder, which is made to revolve against the surface of the cloth to be “fleeced,” thus raising the nap, the great value of the teazle being that it will raise the nap without tearing the cloth, as a comb might do, because the spines are hooked.

The *pa* (leaves) of *Geštin* (?)-*Gir* are a drug for *Tab-ud-da* (bray, anoint in oil alone), *Kar.* 203, 52. It occurs also in *Kar.* 208, 7.

*Murdinnu* is also the name of a disease connected with the head or eyes (*CT.* xxiii, 23, 2, *ēndā-śu bīrurat̄u iḫatu ištatu murdinnu guqana ašā u āmnu mulḏaḥu*). This must be the *wardiți* (warad with the termination -nj), “fongus hématoide de l’œil,” a kind of ophthalmia, *Dozy*, ii, 796.


*Pillū* is also the word for “Mandrake” (p. 217), it being the equivalent of the Arab. *luftā* by a common metathesis (perhaps the word *pīlū* recognized as meaning “egg”) is to be seen in the Syr. *pāghelāthā* “testicles.” The Syr. description of the mandrake (the *kalēnā*-plant must, I think, be this) in *Sm.* ii, 708: “on the top thereof two little balls which are like the testicles of a man”). Yet the Arab. *luftā* has a second meaning, that of a species of aubergine or egg-plant (*Solanum Melongena L.*, resembling the *bādiṭnān = šāmām*, Lane, *Dict. s.v.*), and this may give us the explanation.

*Geštin-ka*, so far as I know, is found only in vocabularies. The meaning of *Geštin* here may be paralleled by its meaning of the grape, i.e. an egg-shaped fruit, and if we accept the possibility of *pillū*, like *luftā*, having two meanings, “mandrake” and “egg-plant,” the comparison with the grape will be apt. The “egg-plant” is found in the warmer parts of Africa, Asia, and America; it is an annual; rises to the height of about 2 feet; bears light violet flowers, which are followed by large fleshy berries, having the size and shape and, in the white varieties, very much the colour and resemblance of eggs (*V.K.* 380); the fruits are white, yellowish, or purple (see *F.J.* iii, 367: *E.B.* xith ed. s.v. “Aubergine”). It is said to come from the East Indies (*MPB.* i, 979) and Arabia (*PC.* xxii, 196). Whether the *ka* in the second half of the word represents the same colour as in the mineral *̲ab̲an̲ka* “iron oxide” is, of course, a matter for conjecture.

5. *Suṣu* may perhaps be the Syr. *šaḥšūrā*, the mandrake (*F.J.* ii, 367), since *pillū* (*Geštin-ka*) may be both mandrake and egg-plant.

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1 If so, should we refer the meaning of *ka(zū)-lūm* “date” to this *ka* “brown” (*lūm = ēmmündu “bear fruit”), or *samka-a-aṣ-ha* “sea-weed (?)”, similarly as the “brown” of the sea?
XVI

GUMS, GUM-RESINS
MYRRH, LIQUID AMBER (OR STYRAX), STORAX, GALBANUM, OLibanum (?), ASA FOETIDA, ABSINTHE, SAGAPENUM, BALM OF MECCA, EUPHORBIA
RESINS, OLEO-RESINS, GUMS, AND GUM-RESINS

Before discussing the different drugs in this section, I should like to quote A. Lucas's excellent definitions (Notes on Myrrh and Stacte, J.B.A. 1937, 27), with a few additions from EC.:

“When first exuded, these materials are all liquid; but with a few exceptions, such as balsams and the oleo-resins from certain trees... they soon harden and eventually become solid.”

“Resins are solid bodies, insoluble in water, but usually wholly or largely soluble in alcohol, examples being... colophony (rosin),... ladanum, mastic, and coniferous resins that have hardened naturally on the tree.” (“Nearly all dissolve, either wholly or partially, in alcohol, ether, the essences, fat oils, and sulphuret of carbon,” EC. 856.)

“Oleo-resins and balsams are usually thick syrupy liquids, examples being Chios turpentine,..., Mecca balsam (Balm of Gilead), and storax.” (“Balsams are insoluble in water,” EC. ib.).

“Gums are solid bodies (‘concrete in transparent or translucent drops’, E.C. 702), insoluble in alcohol, but either soluble in water or capable of taking up sufficient water to form a mucilage, the best example being gum arabic (gum acacia).

“Gum-resins are solid bodies, consisting... essentially of a mixture of gum and resin, with which is associated a small proportion of volatile oil, examples being myrrh and frankincense.” (“The emulsion which they form with water is owing to the solution of the gum, and the subsequent suspension of the other components in the mucilage,” EC. 703.)

It is useful to consider the main substances of this nature as used in ancient times:

“The formula for the ‘regal ointment’ made for the Parthian Kings included myrobalanus, costus, amomum, cinnamon, comacum, cardamom, spikenard, marum, myrrh, cassia, storax, ladanum, opobalsamum, Syrian calamus and Syrian sweet-rush, cananthum, malthabrum, serichatum, cypress, aspralathus, panax, saffron, cyprurus, sweet marjoram, lotus, honey, and wine” (Schoff, Periplus, 112).

“The Mendesian ointment included resin and myrrh, oil of balanus, metopion (Egyptian oil of bitter almonds), omphacium, cardamom, sweet-rush, honey, wine, myrrh, seed of balsamum, galbanum, and resin of terebinth” (ib.).

“Another included oils (the common kinds), sampsuchon, lilies, fenugreek, myrrh, cassia, nard, sweet-rush, and cinnamon” (ib.).

With this information about the various excretions we can examine such trees and plants as are defined by the prefix ḫari (i.e. ḫigu, ḫiqqu), which has been translated to mean “aromatic”, “pleasant scent”, and similar terms.

’huiqu is distinct from šammu: “25 šammēt-i-a šimbīt-i-annūtīt-i, these 25 šammē and ḫiqqu” (AM. 84, 1, 4): ḫiqqu-t-i-a is a word which covers all the group (šimbīt-a KAL-A-Bī šu-nu, “ḫiqqu, all of them,” CT. xxiii 46,7); but it may also have a special use in early times (42 qa šimbīt-i-a, C. F.-Jean, RA. 1927, 66, 16, reign of Rim-Sin). Actually the definition is given, Ṣat. 88, 4, 19-21.”


The meaning of urqitu, from Luck. 46, 9, pāgri quradi-šunu kīna urqiti umallu šeri "with the bodies of their warriors like grass I filled the desert " , is clear, and has nothing to do with "gums" or "resins" ; the special use in the vocabulary from Mat. above (burasū) is the pine-gum, doubtless translating the text of Rim-Sin's date : šam...-[a]r-du might be lārdū, nard-grass, but doubtful. It is not impossible that the Assyrian philologist has associated the two roots of riq and urqitu (from the application of the two meanings to šim), and has, somewhat irresponsibly perhaps, ascribed urqitu thus also to šim.

Sargon (Hkrs. 142 ff.) is also indicative : (**turkānu * *erinu * *urman kala riqqī bibli māšu af Batina ša eriṣiš tāba "all riqqē, the product of the Amanus, whereof the scent is pleasant" : cf. also Esarhaddon (PE. 27, 30, 31) * * ĕrāmu šamūšu māšu Hamanim ša kala riqqē-t-sa u inbi ḫurrusū "a great park like the Amanus, which luxuriates in all riqqē and fruit".

Instructive are the indications in the Babylonian explanatory text, BTP. pl. 37, JRAS. 1924, 455, 13 ff. : a-dan riq głal šūlu ana ṣamašu umu-nuppūš : a-dan li-tūr : kīna epiši asurē : riqšim : turi : inšarā : ḫābīšī : riqgam-gam ša ṣappē łūbī : riqbulug ṣamēš-la ṣa-lū-lū : riqmuš ṭiqšal šībīšī ša ina šippā ud-k₂-u šim-b₃-a : uru₃amānu : labanašum : "Gum of ṭiqšul (galbanum) which is made for medicine : gum (-resin) of li-tūr (scammony), (which is) like the dust of walls : riqšim : turi (Aleppo pine) : sup : resin of riqgam-gam (fir-turpentine), wherein there are cones (or, could it be, "of the cones, in the midst," i.e. from the middle of fir-cones?) : balukku (Ferula communis), šīmēššalu (p. 303) : kukku (fir-turpentine) (the three latter explaining the three preceding), resin which comes forth for incantations. šim-b₃-a = urb (šamāru) incense."

But riq as a determinative is also found in certain mineral chemicals, e.g. šim di₂.zi₂.da, kohl, šim di₂.guškin, realgar, šim di₂.dir, ferric oxide (see DACG. 258) (there are many others), so that the word riqqu cannot be confined to vegetable gums, or vegetable products. Moreover, amšim (probably a form of ṭirappiru, which is the sign šim + garm) means "a brewer."

Hitherto the suggestion that riqqu = the Heb. rōqēhā has found no little favour, and yet it is not satisfactory, since the sign šim (D. 215, 3) has the value ri-i-q[u] or ri-qu, which does not suggest the root rōqāh.

If we look at the sign šim (Thureau-Dangin, REC. No. 393) it may be, as Deimel (No. 215) says, "ein Gefass mit Fuss," but I am inclined to think that the "foot", which is rather obscure, is another vase in which the upper, larger, vase (with a pointed end) is placed. This suggests the ordinary arrangement of a porous water-jar (although more usually set in a wooden stand) which allows its muddy fluid to trickle filtered into the pot beneath. Our Assyrian word riqqu is at once referable to the
Arabic rawwaqa “to clarify”, and its derivatives räwüq “filter” and raiq “the best part of a thing”, so that if we pursue this meaning in the determinative šim(r’i), we should get an indication of a fluid filtering from another substance, which will admirably suit the gum-resins which it makes. This again coincides with the equivalence šimb i -a = urū (šamru), the latter word (if urū) probably coming from the root arū “to throw, shoot, evacuate (the body)”. Riqqu (riqu), then, represents the substances which have oozed or filtered forth from trees.

So much for riq as determinative to the obvious gum-resins. Equally, we might see riq as a reasonable determinative with “myrtle”, which has a volatile oil obtained from every part of the plant, while dapranu “juniper” may well provide sandarach, a resin from incisions. In the case of the arsenic groups, where the determinative riq(šim) plays so large a part (DACG. 45 ff.), we can note that both orpiment and realgar are described as “resinous” in some measure (BC. 819, 856). How far we are to explain the eye-paints and rouge as similarly connected with clay or arsenic, or alternatively as drugs to be “smeared” on the face is uncertain, but the association seems similar.

The word, therefore, which would appear to cover riqqu (riqu), the evacuations or filterings of trees, is, I suggest, “essence”, with all its comprehensive English implications, and I think that the Heb. root raqi(J, although tempting with its ideas of “perfume”, “ointments”, is philologically unsatisfactory.

The plants and trees characterized by the det. riq, and their different uses in medicine are as follow:

- riqqu, myrtle (simple, powder, oil: int., ext., fumigation, enema).
- riqarganu, balm of Mecca (simple, powder: int., ext., fumigation (probably), enema).
- riqbaluJLu, galbanum (simple, hīlu-gum, oil: int., ext., fumigation, enema).
- riqbaluJkuth, probably storax (simple, oil: ext., fumigation).
- riqbariratu, sagapenum (simple, powder: int., ext., fumigation, enema).
- riqbursu, pine (simple, powder, oil, water, seed: int., ext., fumigation, enema).
- riqdapranu, juniper (probably sandarach) (simple, ZID-ZID-powder, oil, seed: ext., fumigation, enema).
- riqdurruqi, probably peach-gum, not in MT.
- riqerunu, cedar (simple, hīlu-gum (once), powder, oil: int., ext., fumigation, enema).
- riqimdu, cypress of the cemeteries (simple, oil: int., ext., fumigation, enema).
- riqiJru, fir-gum (simple: int., ext., fumigation, enema).
- riqkanaktu, probably opopanax (simple, powder, oil, seed, fat: int., ext., fumigation, enema).
- riqkirkiran buraši (ŠR-LI-PAR), probably gum from pine-cones, Pinus halepensis (simple: int., ext., fumigation).
- riqkuru, fir (simple, powder, water, oil, seed: int., ext., fumigation, enema).
- riqmargusu, see p. 364.

If šamru is correct, the root is probably cognate to the Syr. šummar “made to flow”, the same as šimru “fennel”...
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*riqmarru*, myrrh (simple, powder, oil (stakte): int., ext., fumigation, enema).

*riqmesribtu*, "male and female", *Euphorbia Antiquorum* L. (simple, oil of *hilu*-gum once: int., ext., enema).

*riqmersibtu*, wormwood (simple, powder: int., ext., fumigation, enema).

*riqmesappandu*, *riqEš-HA-RA*, not in *MT*.

*riqmesdadu*, unknown (simple, powder, oil, seed: int., ext., enema).

*riqmesnašalu*, unknown (simple: int., ext., enema).

*riqmesušalu*, unknown (simple: int., ext., enema).

*riqmesurnu*, cypress (simple, powder, oil: int., ext., enema).

*riqmesurru*, perhaps broom (simple: ext.).

It will be noted that the *hilu*-gum occurs only with one of the above (*riqbaladi* to any serious extent (*riqerini* and *riqmesribtu* have one instance each). On the other hand the following (not marked with *riq*) all have a *hilu*-gum (*A-DAN* "strong water", which, as I think will be obvious, is a gum soluble in water):

*šamarubakatu*, scammony (simple: int., ext., fumigation, enema).

*šamaššrunu*, tamarisk (simple, water, seed, root: int., ext., fumigation).

*šamnušurru*, *Asa fēšidin* (simple, powder, water, seed, root: int., ext., enema).

*šamsarbatu*, willow (the *hilu*-gum is called especially *šamfar* "the white", "clear"): (simple, seed: int., ext., fumigation, suppository, but not enema).

*šanmisiradu*, *Asa fēšidin* (simple: int., pessary, enema).

(To these gums may be added *šamširru*, tragacanth, p. 272.)

Note also *šil* (*A-DAN*) *erí* "gum of copper", used with *šamfar* (the nitre from willows), brayed and blown into the eye, *AM*. 9, 1, 39. This must be very near the *Lapis Divinus*: "Copper Sulphate, Potassium Nitrate, and Alum, of each equal paris, in powder, fused in a glazed earthen crucible," camphor then being added, the whole being used as an eye-wash in distilled water (P. 468).

Of the above list of plants marked by *šam* scammony provides a gum-resin which, when powdered and triturated with water, affords an emulsion: *Asa fēšidin*, when triturated with water, does the same: the fruit of *Ecballium Elaterium* provides a sediment which, according to Pliny (*NH*. xx, 2), is collected in rain-water, in which it falls to the bottom, after which it is thickened in the sun; but the active principle (according to P. 481) is insoluble in water. Tamarisk-bark provides a decoction in water which can be used against gout and dropsy (*LPG*. 441), so that presumably we might consider this a gum soluble in water. Gum Arabic is, of course, soluble in water, and the willow-nitre (*šil* *šarbatu*) will have the same property.

While, therefore, we can translate *A-DAN* as "gum", we can base...

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1 Also with the value *ziša* (*D*. 579, 280), hardly "Schakal" as Deimel tentatively suggests, but probably connected with a cognate to the Heb. *zibā* "flow".
little presumption on its being necessarily soluble in water, although in every case given above, there is some reason to see such a connection.

At the same time it is not unreasonable to draw some conclusion from the absence, on the other hand, of a use of ḫīlu with practically all but one of the plants determined by ḫīl, and this would suggest that where ḫīlu is used we should suspect at least a gum-resin which will give an emulsion in water.

In conclusion of this brief summary, it might be added that of the (gum-resins) marked by ḫīl we have still to identify one fairly common, ḫīlu, and three rarer, ḫīlu, ḫīlu, and ḫīlu. The other identifications are certain, or at least reasonable.

The commonest gum-resins not yet attributed to Assyrian words are Ammoniac (Dorema Ammoniacum Don, from Persia, allied to Opopanax), and one or other of the two, Opopanax or Olibanum (dependent on the meaning of ḫīlkanaktu), and the resin, Labdanum (from Crete, not probable in Assyria). There would appear to be no plant identifiable with mastich (the Pistacia lentiscus) unless we should see it in one of the LAM-group of trees (see p. 248).

|rasiš, maruru, Balsamodendron myrrha Nees, myrrh.

This has long been identified, ṣiš here meaning "the bitter (gum)". Myrrh, as at present known, is the Balsamodendron myrrha Nees from Arabia, and it is used in India as an emmenagogue, expectorant, detergent, and astrigent; int. for fever, flatulence, constipation, hysteria, chronic bronchitis, leucorrhoea, and epilepsy, while ext. it is used for eyes, and as dentifrice and gargle for spongy gums, and as a fumigatory for sores. It is said to prevent hair falling off (BMM. 209). (Described in Schoff, Periplus, 112).

It occurs thus in MT.1:


Int.: Strangury, ṭ, [drink], AM. 59, 1, 39, 45: alone, drink in beer, anoint in oil, introduce into the penis by a tube, KAR. 203, i, 22. Simple ḫiniqti (retention), ṭ, [drink]. AM. 60, 1, 7, 9: ṭ, drink, ib. 19: mentioned as one of seven for ḫiniqti, AM. 89, 4, 9, of six, ib. 12, of nine, ib. 5. Urinary, alone in a sud-beer and LÚ-TIN-NA-beer drink, KAR. 155, ii, 6. Enema: ṭ, AM. 56, 1, r. 6: ṭ, AM. 94, 2, 9: ṭ, KAR. 157, r. 4. (2 shekels).

Fumigate: Ears, ṭ, AM. 33, 1, 31, dup. 35, 1, 7, and 38, 2, r. 9. Quantities (besides those given above): 1 šú, AM. 41, 1, 1, 24 (one of 3 masqādi): ½ pūti, ṭ, in enema, ib. 16; 1 shekel, AM. 31, 1, 2.

(2) Seed: ūsamūn ṭasiš = ūsamūn guštin-[gir-ra], PL. 30, 79–7–8, 19, 14. Ūsamūn-ru mentioned KAR. 185, iii, 16. (3) Zīd (powder): Blains (šēḏāt), ṭ, bind on, KAR. 192, iii, 55.

1 It is possibly a gloss or a variant to ḫiniqti, KAR. 182, r. 26.
Oil (undoubtedly stakte, described by Lucas, *JEA*. 1937, 29: "Theophrastus, who was a botanist, states that 'from the myrrh when it is bruised flows an oil': it is, in fact, called stakte (in drops) because it comes in drops slowly’. He then explains that ‘some indeed say that this is only the simple un compounded perfume and that all the others are compound... but others declare that the manufacture of stakte (myrrh-oil) is as follows: having bruised the myrrh and dissolved it in oil of balamos over a gentle fire, they pour hot water on it: and the myrrh and oil sink to the bottom like a deposit: and, as soon as this has occurred, they strain off the water and squeeze the sediment in a press’.

*(Concerning Odours, trans. Sir A. Hort, 29)*...

"Dioscorides... states that ‘stacte is the name given to the fat of fresh myrrh, crushed with a little water and pressed out’ (i, 73)’ (Lucas discusses this at length admirably). The oil of myrrh was one of the gifts of Tushratta (TAs. 25, iv, 51), coming from Mitanni, N. of Syria; from him also came riṣBur = baṣmu, the Arab. baṣām (ib. 22, iii, 33).

In *MT*. the oil is used thus:


(5) GA riṣšīša "milk (of (?)) myrrh", described as one of 18 šammēt ("oils"), *KAR*. 187, r. 3.

(6) Note riṣšīša ša šadii "myrrh of the mountains", for anus-trouble, alone with fat of the left kidney of a male sheep (?), put on anus, *KAR*. 203, ix, 12 (note Pliny’s "wild myrrh" (NH. xii, 35)). Whether šammur-ra riṣadii brayed and drunk alone in beer for some form of jaundice, Kū. iii, iii, 9, is to be included here is doubtful. *(Cf. also AM*. 1, 2, 5... ud-ma tu-uq-ta ma-li šammur-ta mu-ni... "and full of tuqtu, its name is šammurru"). In the description of the mythological being (*Tod*. 47, 12) šammurri lepi-[šu] "myrrh is [his] fat".

Myrrh was used as incense in Assyria, a censer of it being placed at the head of a patient’s bed and a censer of bursašu at the foot (Ebeling *MVAG*. 1918, 8, 12 ff.: *cf. KAR*. 72, r. 3, *NGA* ša riṣšīš riṣli).

(*i*) riṣBal, (*ii*) riṣMuk, bal(l)u(k)ku, *Liquidambar orientalis* Mill. (or *Styrax officinalis* L.), *Storax* (esp. *Calamite storax*):

| iṣ riṣMuk | bal-lu-(uk)-ku |
| iṣ riṣBal | ditto |

(Meissner, *MVAG*. 1913, 2, 17, 26–7).

Von Soden (*ZA*. 1936, 239, 146–8) gives the values:

| bal-lu-uk-ku | šil-lu-u |
| hi-iš-šā-ku |
| me-di-du |

It occurs in *MT*. thus:

(1) Simply: ext.: *Temples*, †, poultice, *CT*. xxiii, 39, 7 (riṣMuk). *Eyes*, † (?), uncertain use, *AM*. 13, 3, 10 (riṣBal): †, bind on, 12, 6, 1 (iṣBal). *Feet*, †, steaming hot, [apply], *AM*. 69, 2, 10 (riṣBal). *Breast* and

1 iṣ-du-du = "fish oil" (*D*. 231, 14, b), but the other is possible here.
loins, †, poultice, AM. 49, 1, 8 (riaBal). Lungs, †, mix in oil, anoint, AM. 45, 1, 12, 13 (riaBal). For the muscle of the "middle" (pelvis), †, uncertain application, AM. 69, 8, 17 (riaBal). Cough, †, rub, AM. 50, 1, 8 (riaBal): uncertain use, †, AM. 80, 1, 19 (riaBal). Bruise (dikši), †, bandage, AM. 96, 1, 3 (riaMUK).

Fumigate: By nostrils, with gum of riqBal (galbanum), AM. 64, 1, 20 (riaBal). Against Ghost, with fir- and pine-turpentine and roses (probably fumigate), AM. 99, 3, 16 (riaBal). Ears, †, AM. 33, 1, 31 (riaMUK), dub. 38, 1, iv, 10 (cf. 34, 5, 6, riaBal).

Enema: AM. 94, 2, 4 (riaMUK), †, KAR. 157, 4, and r. 13 (both riaBal): †, AM. 56, 1, r. 6 (riaBal): †, 13 (riaBal) (cf. †, obv. 4, riaMUK): †, KU. 1, ii, 15 (riaMUK), šB. 18, † (riaBal). Probably enema, †, AM. 41, 1, iv, 2 (riaBal) (cf. 13).

Quantities: enema, 2 shekels, †, AM. 41, 1, iv, 13 (riaBal): 10 shekels (stomachic), †, AM. 79, 5, 6 (riaBal).

(2) Oil: Oil of riqBal, ears, †, AM. 37, 2, 9. Head, apply alone, AM. 105, 9 (riaBal).

It is used in incense: 8 mana riqge ši-a (= urā, šamrā) 1 mana riqballukku (riaBal-lu-uk-ku) 18 qa riqhuruši ana kinuru ša ṣamnu elšaša Isšaršulul. Gula ilānī4 Sippāri (to So-and-so, the smith) followed by 2 (?) mana riqge ši-a (urā, šamrā) ana matu ša kisru (to So-and-so) (Cumb. No. 128). Also used in a ritual for incense, contrasted with hurasu in a second censer (Tod. 50, 20–21). It may be found, perhaps, as far back as the 3rd Dyn. of Ur (riaBal), Scheil, RA. 1921, 54, 27.

A striking expression occurring in BBR. 75–8, 7 (ganē ballukku “reeds of ballukku”) suggests at once the Calamite storax of the ancients. This is an invitation to Shamash and Adad in: mēpī Ḥamānu ellūtī pī hibbišu ḫaṣur šad šerīmī bišši terīmī tišurmeni tišiqīti tišupāli ganē ballukku ḫuṣu šubat . . . šad(e) ellūtī pī “pure water of Amanus, gum of the Hasur mountains, the mount of cedar, the product of the cedar, cypress, almond, manna, ganē ballukki, from the dwelling of the pure mountains” . Pliny himself says that the best Storax, which comes from Mt. Amanus, is highly esteemed for medical purposes (NH. xii, 55). With these clues we can follow up the evidence for this identification of ballukku with Storax.

Storax issues in a fluid state from incisions made in the bark of the Styrax officinalis, a native of the Levant, growing about 20 feet high: “as it was formerly the custom to collect and export this gum resin [Styrax officinalis] in reeds, it obtained the name of calamite storax” (VK. 559). I might add that when I was supplied with various gums as specimens, Styrax was the only one put up in a small bottle, the others being solid gums in envelopes, and it is obvious that in the offerings to Shamash and Adad quoted above, the storax is presented in its calamite receptacles. The modern description of Styrax Calamita (in this case from Liquidambar orientalis) is given in P. 1170: it “usually consists of sawdust impregnated with liquid Storax or, more rarely, of powdered Storax bark 3 parts beaten with Storax 2 parts to cause it to form a mass”. Its modern use (ib.) is similar to that of the Balsams of Peru and Tolu (i.e. ib. 214 and 217), stimulant and disinfectant expectorant: useful in chronic bronchitis: ext. for chronic indolent ulcers, sore nipples, scabies, pediculi, and parasitic skin diseases, and to relieve itching in urticaria.
It will be seen that there are two closely-allied plants considered as storax: note MPB. ii, 952, of Styrax officinalis "Lieferte früher Storax, der jetzt allein von Liquidambar orientalis gewonnen wird".

The obvious Semitic comparison for "balukku" is the Syr. ballikâ (PS. 535), given as Ferula communis L., growing in waste fields and dry hills in Palestine (FP. i, 547). But FJ. iii, 456, gives the Syr. balika as galbanum, and its Arabic equivalent as qinna. Ib. 458 gives qinbil as the Arabic for F. communis, which might represent G(N) rîgBal (= qanê ballukku).

It will be noted that balukku is used externally or in fumigation, and that it has an oil. The ext. use corresponds with the modern habit, but Pliny (NH. xxiv, 15) prescribes it (in this case the Amygdalite storax according to Fée, Bostock ib.) internally and as a pessary, as well as externally.

Besides its medicinal use it was employed by the Assyrians as incense, contrasted once with pine-gum. Although frankincense and olibanum are the most likely gums for incense, Pliny says "from Syria they bring back storax, which, burnt upon the hearth, by its powerful smell dispels that loathing of their own perfumes with which these people are affected" (NH. xii, 40). Evidently this must have been the bark: P. 1170 says that occasionally the bark of Liquidambar orientalis Mill. is used in the preparation of "fumigating pastilles and incense".


This drug has a marked peculiarity in connection with other drugs indicated by the determinative rîg; both in the syllabaries (Meissner, MVAG. 1913, 2, 17, 23-9) and in the MT., the simple rîgBal and the more elaborate hîl rîgBal "gum of rîgBal" 1 are given, together in the same text, in contrast to the others, which are never duplicated exactly in this way. Obviously the two are sharply distinguished.

The Sum. hîl, with its Semitic value gørârû "run", "roll", and nuhuru "slit" (cf. nûhrutu, Asa foxtida), shows that this plant must either give a gum exuding naturally or is slit for the purpose of obtaining it. The obvious equivalent would be the Heb. helbûnâh, χαλβδύργ, the equivalent of galbanum, the inversion of h and b in the Assyrian word being to a certain extent paralleled by the Heb. râhel, the Assy. lâhrû. Galbanum is either Ferula Galbaniflora Boiss. et Buhse, growing in Demavend and certain high parts of Persia (FH. 321) or F. rubricaulis Boiss., in Persia (ib.). In modern medicine there are two kinds, Levant and Persian, although both are the produce of Persia (P. 549). The specimen which I possess is yellowish-brown, of rather a disagreeable smell, burning easily with a small amount of blackish smoke, without any very pronounced smell.

The following are the uses in MT.:

(1) Simply (i.e. simple rîgbaluûhû (hîl)) ext.: Tooth, . . . rîgBal, 1 apply, AM. 28, 1, 7. Temples, 1, bind on, CT. xxxii, 39, 5, 8. Stomach (with hîl rîgBal, 1), anoint, AM. 42, 2, 1. Sickness coming out on body, 1, poultice (AM. 52, 3, 3 (ba-luû-ha). To ease affected muscles (sinews) of

1 KAR. 157, r. 4, shows that myrrh and hîl baluûhû are soluble in water.
2 Perhaps [hîl] rîgBal "[gum of] baluûhû".
hands and feet, †, poultice, AM. 98, 3, 13. For blains (ṣiggati), †, bind on, AM. 32, 5, 4, 12, 14 (all with ḥil ṭiḡ mogul): poultice, AM. 51, 4, 7 + 32, 5, 1. For [Hand of Ghost], †, bath, AM. 94, 2, ii, 10.

Int.: Sorcery, †, drink, AM. 85, 1, ii, 3 (ba-lu-ḥa). Excessive saliva, †, prob. drink, AM. 31, 4, 19.

Enema: †, AM. 91, 2, 7: †, including ḥil ṭiḡeb., AM. 94, 2, 4: †, KAR. 157, r. 16, 22.

Quantities: 10 carats, †, prob. ext., AM. 98, 2, 13 (along with 10 carats of ḥil ṭiḡ mogul): ½ qa, †, ext., AM. 50, 3, r. 3: 5 shekels, †, poultice, AM. 17, 8, 5.

(2) Ḥil ṭiḡalabulḥi (ḥal) “gum of b.”: ext.: Toothache, apply, AM. 28, 1, 4: right tooth, after procedure with one other drug, put in left ear, AM. 105, 1, 16: left tooth, after procedure, put in ears alone, ib. 20. For decayed (unnusate) teeth alone, Pl. 23, K. 259, 15, dup. KAR. 203, i, 14 (probably without medium). As a drug for a aši (pain), wrap in wool alone, apply to throat, KAR. 203, i, 66 (cf. Pl. 29, K. 4566, 22): after procedure, introduce alone into nostrils, KAR. 202, 43.

Int.: Strangury, alone in beer, drink, AM. 59, 1, 33: †, drink, ib. 41: †, pour into penis, ib. 11: with refined oil (iḷa BĀR-ĠA) alone, blow up urinary passage, ib. 22.

Enema: KAR. 157, r. 4: suppository, AM. 40, 5, 10: 53, 9, 11: KAR. 157, r. 35.

Fumigate: Nostrils, †, AM. 64, 1, 21 (dup. 55, 8, 1): cf. ib. 20. Prolapsus ani (miqit irri), †, over a fire of thorns, AM. 62, 1, 5.

Quantities: 5i, AM. 41, 1, iv, 24: 3 grains, AM. 15, 3, r. 8 (ba-lu-ḥa): 10 carats, AM. 49, 6, r. 2: 2 (or perhaps 3) shekels, AM. 66, 7, 19: 2 shekels, KAR. 157, r. 4: 5 shekels, AM. 5, 2, 3.

(3) Oil of ṭiḡ mogul: Ears, with ... and frog’s gall apply, AM. 36, 1, 4.

Now the modern use of Galbanum is similar to that of Aṣa ḏiṭida internally, but less energetic, while externally it is used as a plaster in chronic inflammatory swellings (P. 548: FH.🚧 324); Aṣa ḏiṭida is a nervous stimulant, expectorant, laxative, and carminative, useful for flatulence, hysteria, and bronchitis, and in enemata (P. 196), much of which is obvious in MT. Pliny, NH. xxiv, 13, says the galbanum (from Syria) is used for toothache, suppurations of the ears, tumours, boils, and ulcerations of the head: as a pessary, or in fumigations to bring away the foetus; to drive away serpents in fumigation. He says, curiously enough, that it is thought to be productive of strangury, but IB. 184 prescribes it for obstructions of the reins and stone (as well as for hemorrhoids). Orībase ii, x, 36, prescribes galbanum for toothache, like Pliny.

What is important to note is that the gum of ṭiḡ mogul would appear to be soluble in water: “When a man is sick of retention of the passage (presumably constipation), 2 shekels of myrrh, 2 shekels of ḥil ṭiḡ mogul, water of šamḥar-ḥar (mustard), water of šamnu-luh-ḥa (Aṣa ḏiṭida), water of salt, the water of their (i.e. these) ṭiḡge, of their water thou shalt take half a qa each, heat up (GAZ) boil, strain, cool; mix 6 qa (MAŠ) of oil with them, 7 ṣe (grains) of opium (šamnam-ti-la) bray, put therein the waters up to three times thou shalt divide, and once, twice, thrice thou shalt pour into his anus: his constipation (esilī libbi-su) shall be
healed” (KAR. 157, r. 4 ff.). This coincides with galbanum, which yields about 50 per cent of substances soluble in alcohol (90 per cent), and if a portion is heated to redness in a dry test-tube the residue, when cooled and boiled with water, yields a solution (etc., P. 549). V.K. 565 says that galbanum is almost entirely diffusible in water.

P. 549 offers an explanation for the use of the *rahaluḫḫu* and its gum side by side together: the Levant galbanum occurs (1) as small yellowish-brown tears, probably obtained from the stem; and (2) as a tough pasty mass, evidently obtained from the root. This would allow us (as on p. 342) to see *hal* as *garātu* “trickle” in the former (i.e. from the stem), and *hal* as *nuḫuru* “slit” (i.e. of the root) in the latter. There is, of course, the possibility that we are to make the distinction, as in Asa festida, of leaves as distinct from gum (IMP. i, 629).

We must presumably distinguish between this and bdellium, since we find a word *budulju* on Pl. 33, S. 796, 11 (noted by Meissner, Bab.-Ass. i, 243), preceded by *ra*bal (storax) and followed by what must be read *ladunu* (ladanum, cf. Meissner, tib.). Neither *budulju* nor *ladunu* occur in MT. Some of the forms given by Diosc. (i, 80) and Pliny (NH. xii, 19) for bdellium (i.e. brochon, malacha, maladakon, medelkon, bolhon) bear a resemblance to *haluḫḫu*, and yet I doubt if *baluḫḫu* can be the same as *budulju*. It may be added that bdellium has some similarity in medical use as galbanum, it being prescribed for opening the womb, stone, urine, cough, and the bite of mad beasts (Diosc. tib.).

To sum up: philologically *baluḫḫu* is cognate to the Heb. ḫelbenah, and the medicinal use of the Assyrian drug coincides well with that of galbanum. Moreover, the indications that *baluḫḫu* is soluble in water, and that it has a ḫilu-gum, has a clear bearing on the identification.

(**) *riqgi, kanaktu, perhaps Boswellia sp., Olibanum.*

(A). Pl. 34, K. 4169:

<table>
<thead>
<tr>
<th>5.</th>
<th><em>sam</em></th>
<th>-</th>
<th><em>ruq-lu</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>sam</em></td>
<td><em>ruq</em></td>
<td><em>ru</em></td>
</tr>
<tr>
<td>10.</td>
<td><em>ziŋ</em></td>
<td><em>riqgi</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>riqšalu</em></td>
<td>-</td>
<td><em>šalu</em></td>
</tr>
<tr>
<td></td>
<td><em>kiŋ</em></td>
<td>-</td>
<td><em>ili</em></td>
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<tr>
<td></td>
<td><em>šampl</em></td>
<td>-</td>
<td><em>pl</em></td>
</tr>
<tr>
<td>15.</td>
<td><em>šamu</em></td>
<td>-</td>
<td><em>ma</em></td>
</tr>
</tbody>
</table>

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1 I cannot help thinking that *šumal-pa-nu-um* applied to eyes in KUB. iv, 50, 6, must be a mistake for *šumal-dap-pa-nu-um*, mustard.

2 Restored from text on p. 247, ll. 13, 14.
(B) Cf. VAT. 9006 in the \( ^{15} \text{sam} \text{hu-ud-hu-um} \) group:

<table>
<thead>
<tr>
<th>( ^{15} \text{sam} \text{hu-ud-hu-um} )</th>
<th>( ^{15} \text{sam} \text{isu} \text{eriu} \text{ku} \text{riiri} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( ^{15} \text{sam} \text{hu-ud-hu-um} )</td>
<td>( ^{15} \text{sam} \text{isu} \text{eriu} \text{ku} \text{riiri} )</td>
</tr>
<tr>
<td>( ^{15} \text{sam} \text{isu} \text{eriu} \text{ku} \text{riiri} )</td>
<td>( ^{15} \text{sam} \text{isu} \text{eriu} \text{ku} \text{riiri} )</td>
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<td>( ^{15} \text{sam} \text{isu} \text{eriu} \text{ku} \text{riiri} )</td>
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<td>( ^{15} \text{sam} \text{isu} \text{eriu} \text{ku} \text{riiri} )</td>
<td>( ^{15} \text{sam} \text{isu} \text{eriu} \text{ku} \text{riiri} )</td>
</tr>
</tbody>
</table>

(C) K. 8846, r. 17 (Pl. 31), together with K. 5974 (Meek, RA. 1920, 150), and 82–5–22, 576, r. 1, 15–17 (Pl. 40) continue the text thus after l. 11:

\[
\begin{align*}
\text{sam} \text{hu-ud-hu-um} & \quad \text{au-ri-ri} \\
\text{sam} \text{hu-ud-hu-um} & \quad \text{au-ri-ri} \\
\text{sam} \text{hu-ud-hu-um} & \quad \text{au-ri-ri} \\
\text{sam} \text{hu-ud-hu-um} & \quad \text{au-ri-ri} \\
\text{sam} \text{hu-ud-hu-um} & \quad \text{au-ri-ri} \\
\end{align*}
\]

\( ^{15} \text{sam} \text{hu-ud-hu-um} \) is given the values \( ^{15} \text{ta-ni-it-tim} \) and \( ^{15} \text{ti-ik-ni-tim} \), CT. xviii, 3, viii–vii, 26, 27; and \( ^{15} \text{ti-ka-ni-tum} \), Von Soden, ZA. 1936, 240, 164.

\( ^{15} \text{sam} \text{pi-ri} \) is a drug for \( ^{15} \text{sa-sa} \text{-ti} \) (an ulcer of some kind) KAR. 203, r. iv, 23, parallel to \( ^{15} \text{sam} \text{riamuru} \) \( ^{15} \text{sa} \) \( ^{15} \text{a-du-du} \), mix in beer, bind on (\( ^{15} \text{sa[R]} \)) (ib. 22).

\( ^{15} \text{riqGIG} \) occurs thus in \( ^{15} \text{MT} \):

(1) Simply: ext.: Eves, \( ^{15} \), AM. 16, 1, 23. Breast and loins, \( ^{15} \), poultice, AM. 49, 1, 8. Lungs, \( ^{15} \), bind on, AM. 49, 6, r. 2 (13 carats). Blains (\( ^{15} \text{siggiati} \)), \( ^{15} \), AM. 51, 4, 7.

Suppository: \( ^{15} \), AM. 43, 1, 3: KAR. 157, r. 32. Enema: \( ^{15} \), AM. 56, 1, 11: \( ^{15} \), AM. 41, 1, iv, 15 (2 shekels).

Int.: Urinary, alone (?) with oil, beaten up and drunk for three days without a meal, AM. 66, 7, 17 (Bab. 1934, 111).

(2) Water: Ears, sprinkle a cloth with “water” of pomegranate, insert, KAR. 202, iv, 28.

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1 From a tablet from our excavations at Nineveh (S.W. IV, Dump, 4), preceding the \( ^{15} \text{sumun-dar} \) group.

2 Is this \( ^{15} \text{ar} \), i.e. \( ^{15} \text{ar-ti} \)? It might be so, from the copy.

3 \( ^{15} \text{a-du-du} \) = “fish oil”, D. 231, 14, b., but it might mean here “of which the oil runs”, or similar.
Oil: Ears, sprinkle on wool (after prescription), [apply], AM. 35, 4, 6. Mentioned ABL. 570, 13. Also in a ritual against hatred, etc., †, anoint, AM. 87, 1, 8, and 13.

Lipâ (fat): ext.: Eyes, †, apply, AM. 8, 1, 17: 13, 3, 7: 19, 6, 5. Temples, †, KAR. 202, iii, 13. Head, †, CT. xxiii, 26, 4.

ZID (powder): ext.: Bruise (qi mištti), †, 1 (?) qa, AM. 77, 5, 18, Blains (šiqati), †, bind on, KAR. 192, iii, 55.

riqGIG occurs as far back as the time of Shulgi (TUrk. 13, No. 122). riqPI-FI occurs as far back as the Dyn. of Agade, among various drugs marked with the det. riq, along with riqGIG-GAL and riqGIG-DU13 (Legrain, MMAP. xiv, No. 89, p. 122-2).

It is not easy to decide whether riqkanaktu is a gum-yielding plant or a gum-yielding tree; the list in Meissner MVAG. 1913, 2, 17 15, which defines the drugs by the double determinative is riq, includes under this denomination both trees and plants (myrtle, pine, myrrh). In MT. the riq class has frequently no other determinative than this, whether trees or plants (vide riq pine, riqGAM-GAM fir, riqšš myrrh): in the case of kanaktu which, like the remainder, is usually prescribed simply as riqGIG in MT., an instance occurs (Kü. ii, 3, 68) of riq; we also find in (A) its synonyms (riku-šu, ištanittim, šikktum) similarly indicated, while išanGIG does not, I think, appear. The probability is therefore that we have a tree in riqGIG, kanaktu, and not an umbellifer, which would then rule out the identification in AH. 145 of opopanax.¹

If then the suggestion is entertained that išanšhilumu is “chestnut”, should we not infer from its association with kanaktu that the latter is also a nut-bearing tree? It is obvious from the frequency of its use and the number of its synonyms that it is a very important drug; it is peculiar in having a lipâ “fat”: its meaning would appear to be “the healer” since riqGIG means “drug for sickness”, and the Assyrian word kanaktu is comparable to the Syr. kannek “healed”. We have as yet no satisfactory equivalent for the very common “frankincense” of the ancients which is generally accepted to be one of the species of the Boswellia, probably B. serrata Stackh., which provides the Olibanum of commerce.

Olibanum (frankincense) was certainly an Arabian gum-resin, Theophrastus saying that frankincense was produced in the country of the Sabaeans (FHP. 136): “as a medicine olibanum is nearly obsolete.” CPI. 174 considers that all that has been written about the medicinal properties of Boswellia serrata refer to the imported olibanum, from which olibanum must be carefully distinguished.

In India the B. papyrisera, a form of olibanum is applied to indolent swellings, is a local astringent, detergent, fumigatory, and detersive, and is used int. and ext. for lungs, and as an astringent is used in gonorrhoea. Native women take it to promote menstruation (BMM. 210). In commerce there are two kinds of olibanum, the E. Indian and the Arabian, but the latter is said to be now seldom met with; there are two varieties of the former, one occurring in pieces the size of a hazel-nut to that of a walnut (PC. v, 1836, 242). Olibanum “occurs in commerce in

¹ Note, however, PHP. 327, “the gum-resin of the nearly allied Opopanax persicum Boiss., as collected by Loftus at Kirrind, in Western Persia, in 1851, has neither the appearance nor the characteristic odour of officinal opopanax.”
semi-opaque, round, ovate, or oblong tears or irregular lumps, which are covered externally with a white dust" (perhaps the Assyrian zu) (BC. 11th ed., xi, 22) "as a medicine it was in former times in high repute . . . Avicenna . . . recommends it for tumours, ulcers of the head and ears, affections of the breast, vomiting, dysentery, and fevers. In the East frankincense has been found efficacious as an external application in carbuncles, blind boils, and gangrenous sores, and as an internal agent is given in gonorrhoea " (ib. 23).

samhuthumu, curiously included in a group with rišikanaktu and even "raisins", has the value "sticks (wood) for trees of the orchard" (amplified by samhū-ud-hu-um gis-šar with the same value). This, coupled with its association with almonds and other nuts (in the text continuing p. 404) is, as far as I know, the only evidence we have for its meaning which, I suggest, might perhaps be "chestnut". "In a young state . . . the [sweet] chestnut is found to make durable hoops for casks and props for vines, and of a larger size it makes good hop poles" (EB. 11th ed., vi, 113). But this can be only a suggestion, as samhuthumu is not marked as a tree.

On p. 344 šuqul would appear to be from the original meaning of šaqalu, apparently "to hand" and so "weigh" and, if so, it would be the pendent gum (i.e. l. 8, "drug from the middle of rišikanaktu,") l. 7, "drug from the middle of the rišē-li-par," i.e. Aleppo pine, l. 6, "drug from the middle of flesh," i.e. adeps, followed in l. 9 with samkipū "fat", as a special synonym of "seed of rišikanaktu". At the same time the Arab. šakala is "to ripen" (of grapes), which finds a parallel in lam(?)-muzigu "raisins" (B 5). As for lamA-AB-BA particularly "drug of the sea", presumably it is some gum brought from the sea-land of S. Mesopotamia.

(1) rišgam-ma, šumlalū, Nerium odorum L. (?).

This is a rišqu which can be powdered, and its use appears to be entirely ext., or in enemata.

Sargon (HC. 9, 28) mentions seeing it in the mountains of Sinaḫulzi and Biruatti, probably E. of Lake Urumiah, along with the karšu, Prunus Mahaleb. "A sweet fragrance," as he says.

The Nerium odorum has fragrant leaves (IMP. ii, 802), but this is hardly enough, since as in Nebuchadnezzar's time 15 mana of rišu-la-li-e are worth 5 shekels of silver (Scheil, RA. 1921, 97, from Keiser, Letters, No. 162) mentioned along with rišbarušu and riškuku, it should be a gum.

rišgam-ma occurs thus in MT.:

(1) Simply: Mouth, †, bray in fat, poultice, AM. 24, 5, 7, 12. Temples, 10 shekels, †, bind on, CT. xxiii, 45, 8: †, baldness, or scab on head, CT. xxiii, 26, 4. (Breast and loins), †, poultice, AM. 49, 1, iv, 8. Cough, rub with cedar oil, †, bind on, AM. 50, 3, 8. Constiction of lungs, †, [ext.], AM. 55, 4, 14+63, 6, 10. "When a man in his weakness," inflammation (dryness) spreads to his imši (belly), bray with samlišan kalbi, boil in beer, and bind on, KAR. 202, iv, 7. For "poison" (of

---

1 is rišgam — ME in Meissner, MVAG. 1913, 2, 18, 35.

†Énema †, *AM. 94, 2, ii, 5: †, KAR. 157, 4, and 25 (10 shekels) and r. 14. Probably, †, *AM. 41, 1, iv, 2, although described as one of 3 mašqišti.


(2) zīd (flour, powder): Ext. †, KAR. 192, iii, 55.

Having regard to a mention by Ainsworth (T. ii, 315) that he saw jasmine, honeysuckle, and cercis (Judas-tree) near Noumieh, we might almost be led to see in sumšal a borrowed word from Sumerian, of which the latter half would be from lal “honey”. But honeysuckle has little or no medicinal value (nor have jasmine nor cercis), so that these would seem to be out of the question. Nerium odorum L., a poison used externally as a drug might be a possible identification, and yet it hardly complies with the need in the Nebuchadnezzar contract quoted above. Its pleasant scent and its habitat, however, coincide with Sargon’s quotation.

(1)*šiمشšal, šimšalâ, šimeššalâ, perhaps Buxus longifolia Boiss., box.

The equivalence occurs (Meissner, *MVAG. 1913, 2, 17, 17) with the forms *šiمشšal, *šiššal-meš-li (v. la), šimeššalâ, šimšalâ.

It is rare in *MT., and occurs simply only:

Ext.: Head, †, CT. xxiii, 37, 2. Temples, †, bind, ib. 45, 7 (10 shekels), dup. KAR. 190, 3. A prescription (?), †, includes 1 shekel, *ADD. 1074, 5. Cf. Thureau-Dangin, *RA. 1920, 70, 4, in a ritual for the ilissu-instrument.

Int.: Stomach (bil libbi), as taḫittum, †, 1 shekel, in 1 qa of strong beer, *AM. 40, 1, 63.

†Énema †, KAR. 157, r. 14.

The more usual word for the “box” is accepted to be *turkarinna, the Syr. ‘eskārā. Holma, KL.B. 85, took the Syr. semšarā to be the equivalent of šimeššalâ, i.e. Buxus longifolia Boiss. This is the box-tree of Palestine (mountain regions of Antioch and Amaran, *FP. ii, 509), growing about 20 feet high (FJ. i, 318). It is closely allied to B. sempervirens L. (Guide to Exhib. of animals, etc., in the Bible, 318) which is the Indian species, the wood being diaphoretic, the leaves bitter, purgative and diaphoretic, useful in rheumatism and syphilis. A tincture from the bark is used as a febrifuge (*IMP. 1134). *PC. vii, 75, says that great quantities of boxwood are imported from Turkey, and that the leaves have been employed as a tonic. How far the medicinal use corresponds with that in *MT. is difficult to say.

In Weidner’s *Boghaz K. Stud. vi, 64, 28–9, we find a mention of the mountain of Galasu which provided lapis and gold, bearing *šašḫuru (apple), *šiditu (fig), *ši-ša-la-ša-la-ša-la-in-wu, which may well correspond to what FJ. ii, 318, says of the box: “auf den Bergen des pontischen Kleinasiens wucherte der Baum in unermesslicher Fülle.”


1 “*rišbuluo” is unknown.
GUMS, GUM-RESINS

Pl. 31, K. 8249, 8-11 + Pl. 40, 82-5-22, 576, 13-16:

<table>
<thead>
<tr>
<th>šan riqMAN-DU</th>
<th>šam Su — a — du</th>
</tr>
</thead>
<tbody>
<tr>
<td>šam NIM</td>
<td>šam Su — a — du</td>
</tr>
<tr>
<td>šam NU — GI</td>
<td>šam Su — a — du</td>
</tr>
<tr>
<td>GI — ŠI — ŠAR</td>
<td>šam Su — a — du</td>
</tr>
</tbody>
</table>

VAT. 9000:

<table>
<thead>
<tr>
<th>šam riqMAN-DU</th>
<th>šam Su-a-du</th>
</tr>
</thead>
<tbody>
<tr>
<td>šam NIM</td>
<td>šam</td>
</tr>
<tr>
<td>šam NU — GI</td>
<td>šam (vir-gi-si)</td>
</tr>
<tr>
<td>šam Su-a-du</td>
<td>šam isat libbi nasahi (ŠUR)</td>
</tr>
</tbody>
</table>

Meissner, MVAG. 1913, 2, 18, 37, 43, gives also š iqEN — DÙ = suadu. Cf. riqMAN-DA urqit-su, KAR. 203, iv, 8.

(4) šiqMAN-DU occurs thus in MT.:

(a) šiqMAN-DU:

(1) Simply: Lungs, †, poultice, AM. 56, 1, 8.
(2) ZID (powder): one of 56 for blains (siggati), bind on, KAR. 192, iii, 56: 10 shekels, for head, †, bind, CT. xxiii, 33, 10.

(b) riqMAN-DU:

Int. (?) : Too much salvea, †, AM. 29, 5, 16.


(2) Oil: in a prescription to bring popularity, † (oil of pine, of myrrh, of Acorus calamus, of . . . , of riqkanaktu, of . . . ), to anoint, AM. 87, 13, 13.

(3) Seed: Enema, †, boiled in beer and oil, AM. 56, 1, r. 5 (dup. AM. 69, 8, 11). (Similar, AM. 56, 1, r. 10, dup. AM. 69, 8, 15.)

(4) ZID (powder): Blow (qi mišitti), 1 ga, †, AM. 77, 5, 13.

(c) šan riqMAN-DA “while green” with šit-gÁN “drugs for a sick anus”, mix with fat, apply, KAR. 203, r. iv, 8, restored from Pl. 30, 8, 698, 13, and a new Nineveh text.

(d) riqMAN-DA: Stomach (?), †, drink in beer, Kii. iii, i, 60.

Temples, †, poultice, riqMAN-DI, CT. xxiii, 41, 15.

Fumigate: prob. migit irri (“fall of entrails”) (or sim.), †, AM. 62, 1, i, 5.

(e) Su-a-di: to anoint white hair that it become black, . . su-a-di, with gall of a black ox, gall of a scorpion, gall of a mouse (sik + tin), and punpul[i], in oil of cypress of the cemetery, AM. 4, 1, 4.

Quantity: 2 (?) carats, †, uncertain use, AM. 42, 1, 2 (su-a-di).

Note TR. ii, 60, K. 2882, r. 8, šumma ud šamIM-MAN-DU ittabsi eqbu šuwatu (hiba).
riqDU occurs on a tablet of Bur-Sin’s date (TUrK. 267, 3): Gimil-Sin, Myhrman, PBE. “A”, iii, Nos. 116, 10.

Much of this points to it being Sambucus nigra L.

(1) Its name suadu, which might be cognate to the Arabic ‘aswad “black”, with reference to its black berries (which are indicated in the adjective nigra).

(2) Its name šamNIM, i.e. “drug against flies”, coincides with HS. 165: “The leaves [of the Elder] when bruised, if worn in the hat, or rubbed on the face, will prevent flies from settling on the person,” and BMP. No. 137: “Fresh Elder leaves are also commonly supposed to be offensive to most insects, hence a decoction of them is sometimes used by gardeners to keep off caterpillars from delicate plants.”

(3) šamNU-GI, either “Not-reed” or “Image-of-reed” would coincide with the property of that Elder, where the bark is easily separated from the pith, in making pop-guns. (“Every boy that plays with a pop-gun will not mistake another tree instead of the Elder,” Culpeper, Eng. Phys., 1814, 119.) “The light pith is cut into balls and used in electrical experiments” (BMP. No. 137). “It is now called Bone tree in Scotland, from the central pith in the younger branches” HS. 169. Doubtless GI-SI-SAR contains a similar indication. The Latin name Sambucus suggests this also.

(4) The gloss šurriš suggests the word gîrgîšu, Arbutus unedo (p. 296). It is conceivable that the Elder-tree with its white flowers was compared to the “tall shrubs or trees, with persistent, leathery leaves, and small, panicked racemes of white waxy flowers, resembling Lilies of the Valley” (FP. 117 of the Arbutus).

(5) “Drug to remove fire of the stomach,” and its use in MT., ext. (twice “when green”) for lungs, blains, bruises, eyes, saliva, and haemorrhoids, and int. for stomach, are paralleled by the use of the fresh leaves used in the preparation of a cooling ointment (BMP. No. 137), and the flowers particularly in easing the pains of haemorrhoids (HS. 168, 169): “The juice of the green leaves applied to the hot inflammations of the eyes assuageth them” (Culpeper, Eng. Phys. 1814, 120): the distilled water of the flowers cleans the skin (ib.) and the leaves or flowers distilled in the month of May are good for ulcers on the legs, for eyes, and palsy of the hands.

(6) The very mention of the berry (seed) oil, and “when green”, are other indications.

(7) Its use in dyeing the hair black is exactly one of its properties: the Romans used the black elder juice for this (HS. 168: cf. Culpeper, ib., 20).

(8) The use of the oil of riqMAN-du for popularity is to be seen in the use of Elder flower oil, the flowers yielding a very small percentage of an essential oil. The Elder flowers are used in making an aromatic distilled water and for communicating a pleasant odour to lard (Unguentum Sambuci), FHP. 334.

Sambucus nigra L. occurs cultivated in Syria FP. 576. FHP. ib. says it is indigenous to W. Asia.

šamTILLA (rarely š riqTILLA), šamurî, irtû (Retama Rastam Forsk., broom, suggested, but not probable).
351 GUMS, GUM-RESINS

Add to this Pl. 30, 79-7-8, 19, ll. 8-10:

The similarity with the KU-LI-LA-AN-NA = kulilitu (Landsberger, Fauna, 26, No. 347, “Libelle”), [KU-LI-L]AN-NA = kulilatu, ib. 44, No. 5, and kulilânu = šam-ur-ku(tu ?)-[u (?)], ib. 40, No. 23, should be noted. The ku-li-li-. . . of KAR. 194, iv, 37 (given with others to drink to a woman who has been given noxious drugs) is probably not the plant.


In identifying this plant the possibility of it being the broom, Cytisus, Retama, must not be ignored. From the variation in its spellings it may well be a foreign word: ʾšGIRAN suggests a highland origin. Culpeper (English Physician, 1814, 57) says that “the continual use of the powder of the leaves and seed doth cure the black jaundice”, and the juice of the young branches “boiled in oil is the safest and surest medicine to kill lice in the head and body”. Retama Retam Forsk. grows in Palestine on hills and in sandy places (FP. 3, 301).

On the other hand although the description that it is “like tamarisk” is possible, the addition “and red” is not so easy; and the instance of its determinative in one case, ʾšGIRAN, indicating a gum, does not confirm the possibility of broom. At the same time the appearance of ur-tu-u in the list of dyes or dyed cloths in CT. xviii, 17 (both K. 4211 and K. 9892) K. 4211, obv. 5 ff, must be considered:

\[\text{šam}-ur - \text{tu} - \text{u}\]
\[\text{šam}-\text{e-di}-\text{na}-\text{a}\]
\[\text{šam}-\text{gir}-\text{a}-\text{nu}\]
\[\text{šam}-\text{išid} \text{ šá}-\text{dù}-\text{šá}-\text{tu}\]

\[\text{šam}-\text{šá} - \text{šá} - \text{u}\]
\[\text{šam}-\text{di}-\text{e}-\text{na}\]

\[\text{šam}-\text{pat}-\text{r[a]} \ldots 1\]
\[\text{šam}-\text{gir} - \text{[a-nu]}\]
\[\text{šam} [,, ]\]
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uq-na-a-tum | in-zu-ri-[tum] | ar-ga-na-nu | ar-qu

...-ra-tum
...-[z]i (?) mept
[uu(?)-tu (?)-u] | ur-tu-ú | mi- til

and K. 9892, 7-12:

ur-tu-ú | kut-
hi-za-ri-bi | kut-
uq-na | uq-na-a-[tum]
uq-na-a- tum | uq-na-a-[tum]
si-pal šir-pi | uq-na-a-[tum]
ZA-GIN-NA | uq-na-a-[tum]

If this urtú be the same as, or allied to, the plant of this section and we have to see a dye in it, the Genista tinctoria L., or Dyer's Broom, would coincide with it, with its well-known yellow dye (VK. 519, which mentions its use in the Mediterranean, i.e. Samos), which is also used as a diuretic and the seeds as a mild purgative (ib). But here again we are challenged by the description "red" given above by the Babylonian scribe; the flowers of this broom and the dye are yellow.

At the same time urtú occurs in MT., in one case along with various materials to be plaited or spun and knotted (AM. 3, 2, 7, dup. of KAR. 202, ii, 24, translated PRSM. 1924, 11) for a woman with weak hair, and in another as ur-tim (AM. 94, 2, ii, 16), as one of a large number of drugs, chiefly vegetable, but including sulphur and human bone. In this latter a cloth is not indicated, however much the former might demand such a material.

1. The Aš-groups:

108860 (CT. xxxvii, pl. 30), iii, 21-5:

šamšá-mi DINGIR (?)-LUGAL (?)-GAL | šam [Aš]
šamia — bu — ūtu | šamšá-mi Ašpt
šamka-an-zu-ū | šamšá-mi [ina Aš]-la-m[i]
šamšá-mi Ašpt | šamšá-mi [Aš] ina Šú-ba-rim
25. šamGIR-PAD-DU LÚ-[GÁ]L-[L]U | šam Aš
šam Aš
It is curious that the same name šamaš should be treated again in the same tablet, pl. 32, iv, 20–4:

<table>
<thead>
<tr>
<th>Col. vi</th>
<th>Col. v</th>
</tr>
</thead>
<tbody>
<tr>
<td>ša-mu sāmu</td>
<td>ša-m ū hatti re‘i</td>
</tr>
<tr>
<td>ša AŠ</td>
<td>ša ū hatti re‘i</td>
</tr>
<tr>
<td>ša PA</td>
<td>ša ū hatti re‘i</td>
</tr>
<tr>
<td>LAL</td>
<td>ša ū hatti re‘i</td>
</tr>
<tr>
<td>ša-GU-LAL</td>
<td>ša ū hatti re‘i</td>
</tr>
<tr>
<td>ša . . . (a) RIM</td>
<td>ša ū hatti re‘i</td>
</tr>
</tbody>
</table>

K. 4182 (Pl. 34), r. 3 ff., properly the bottom of K. 267 (Pl. 32),Cols. vi–v, continued by the join K. 4180, B (Pl. 32) to K. 267 (Pl. 21), Col. vii:

<table>
<thead>
<tr>
<th>Col. vii</th>
<th>Col. viii</th>
</tr>
</thead>
<tbody>
<tr>
<td>ū . . . . . . . . . . . .</td>
<td>ša ū hatti re‘i</td>
</tr>
<tr>
<td>UZU . . . . . . . . . . . .</td>
<td>ša ū hatti re‘i</td>
</tr>
<tr>
<td>li . . . . . . . . . . . .</td>
<td>ša ū hatti re‘i</td>
</tr>
<tr>
<td>NIM . . . . . . . . . . . .</td>
<td>ša mu sāmu</td>
</tr>
</tbody>
</table>

šamaš (never Ḡ) is found in M.T. thus:


Int.: for AŠpi (= tanuqati “screaming”, hysteria (?), see p. 357), 108860, iii, 24. With šanu-luḫ-ha and root of šanu-luḫ-ha, †, drink in wine or beer, AM. 89, 1, 1. Šammu ša šamaš = ša-hul-la (ḫul liḇba “joy of heart”) = ḫul ḫa-ah-hu-u (gum for coughing), Langdon, RA. 1916, 31, 14.

(2) Seed: Ext.: Temples, †, bind, CT. xxiii, 39, 2.

Int.: Strangury, †, in strong wine drink, AM. 59, i, 38: †, [drink], ib. 43. Gonorrhoea, †, drink, KAR. 193, 4.

Enema (?): 1 šu, †, enema (?), AM. 41, 1, iv, 25.
(3) Root: doubtful, to remove AN-TA-SUB-BA,\(^1\) KAR. 186, r. 24. samša-pa, a synonym, occurs thus: for some stomach trouble it is drunk alone in beer, Kü. iii, iii, 21: †, in a remedy for weak hair, rub on, CT. xxiii, 34, 28, varying with KAR. 202, ii, 16, where it is written samša-pa-sib which, since it is synonymous with samḫatti re'ı, shows that we must see in samša-pa an equivalent for simple pa = ḫatti.\(^2\)

2. The samnu-luḫ, samnu-luḫ-ha-group:

Pl. 29, S. 387, "obv." 13: Pl. 31, K. 4581, r. vii, 3–7:

<table>
<thead>
<tr>
<th>[nu-luḫ-ha-šar]</th>
<th>[nu-ḫu-ur-ti]</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>[ti]-ia-a-tu</td>
</tr>
<tr>
<td>...</td>
<td>...-ra-tu</td>
</tr>
<tr>
<td>...</td>
<td>...-nu-ši</td>
</tr>
</tbody>
</table>

81–7–27, 56 (Meissner, Suppt. pl. 26).

3. KA-GA-ḫa-šar nu-hur-tum

nu-luḫ-ha šar

The various forms of samnuḫurtu occur thus in MT.:

1. (a) samnu-luḫ and samnu-luḫ-ha together:

Int.: Lungs, †, [drink (?)], AM. 55, 2, 6: [drink], AM. 83, 1, 7. Spitting blood and coughing, †, ib. r. 18.

(b) Tiyatu, with nuḫurtu tiritu \(^3\) adamuti, with mustard, 1 shekel, for sorcery, drink, AM. 85, 1, 5.

(c) samnu-luḫ-ha with samtiyatu: Stomach (no others), drink, Kü. ii, i, 34 (cf. the association of the two also in AM. 52, 1, 8). Hand of Ghost, †, drink, AM. 76, 1, 9, 13, cf. 3. With root of samnu-luḫ-ha, see Root.

2. samnu-luḫ without samnu-luḫ-ha:

Int.: Lungs, alone, Meek, RA. 1920, 179. Sm. 22, 12: Strangury, †, drink samnu-luḫ tiritu, AM. 60, 1, 15. Sorcery, †, probably drink, AM. 87, 5, 12.

Note gum of nu-luḫ, uncertain use, †, eyes, AM. 92, 8, 6.

(3) samnu-luḫ-ha, without samnu-luḫ:

(a) Simply: ext.: Eyes, †, apply, boiled in oil and white wax, AM. 19, 6, 7. Teeth, †, pour into cavity ([ina nuḫurti], AM. 30, 13, 3. Cleanse mouth, †, AM. 78, 1, 13 (AJSL 1929, 4). “Poison” ([šimmat], †, poultice, AM. 98, 3, 9. Sore or blister (umšati), to remove, †, prob. ext. AM. 17, 5, 7.

Int.: Excessive saliva, †, drink, AM. 31, 4, 12. Jaundiced eyes, alone, drink in beer, Kü. iii, iv, 23. Cough, drink alone, in oil and kurunnu-beer, KAR. 203, iv, 29: †, drink, AM. 81, 8, 5. Lungs, alone, drink, AM. 54, 1, 4: anoint and also [drink] hot, †, ib. 6. Retention, strangury (ḫiniqtı), †, drink, AM. 60, 1, 5, 21: 89, 4, 8. Menorrhagia, drink alone in beer, KAR. 194, 1, 32: prob. the same trouble, with beer, licorice, and

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1 Described in BRP. iv, 37 (JBAB. 1924, 452).

2 Note also D. 597, 239, \(^{2}ŠA.\ FA.\ ŠAB.\ NU.\ NA = ḫatti ḫubaru.\)

3 I translated this in Bab. 1934, xiv, 121, "crushed," from Syr. ttrā, percussit. I am not sure, however, whether this word “crushed” may not be redundant; and I suggest as an alternative the Arab. tary “fresh, still moist”. Actually, according to BMM. 336, alliacea must be fried before use as a medicine, inasmuch as raw hīniga causes vomiting. Adamuti must surely be "red", in reference to the colour of the gum (a dark red), but the form of the word is peculiar.
pine-gum, *ib.* iv, 4: for *ni-NE* (some menstruating trouble), dry, drink alone in beer, *ib.* iv, 13. Limbs "poured out", 5 shekels 1 of *samNU-LUH-HA tiritu* with 1 (?) shekel of yellow ochre and 1 shekel of pine gum, [drink], *AM.* 31, 1, 2.

**Enema:** †, *AM.* 56, 1, 7: 94, 2, 5, 9.

(b) Root: (1) *išdu*: sore or blister (*umšatu*), prob. alone ext., *AM.* 17, 5, 7. Soreery, † (with simple *samNU-LUH-HA*), drink, *AM.* 89, 1, 6. Suppository, in fat, *KAR.* 201, r. 24. (2) ūr: Hand of Ghost, †, in beer drink, *AM.* 74, 1, 21.

(c) Seed: Ears alone, ext., *AM.* 38, 4, ii, 10 (paralleled by seed of fir, and by roasted roses, in the two subsequent lines).


(e) Water: Enema, †, for strangury, *KAR.* 157, r. 5.


The gum (*hīlu*) is applied to eyes, †, *AM.* 17, 4, 9. A sack (*naruqu*, Meissner, *Beitr.* ii, 52) of *hi-il ti-ia-ti* mentioned, Clay, *BBS.* ii, 2, 107, r. 46.

With these details we can now discuss the various words:

It will be seen that I was entirely wrong in reading *sam išPA-ŠIB* as *sam iš-pa-ru* in *AH.* 98. Misled by the evidence of *sammu sāmu* "red drug", and the similarity of the Arab. *'asfar* "safflower", as well as the possible restoration [*sam*iš*]-*pa-ri* in the order of the *VM.* (*AH.* xiv), I had assumed that the evidence was overwhelming, in spite of the presence of *samāš* in the same group, which I had tried to show was *Asa jmtida*. Now, however, the evidence of *sam išPA-ŠIB* as *hātta reʾi* is too strong; the variant form *samšʾA-PA-ŠIB* for one equivalent, instead of *samšA-PA*, adds its testimony; and the correct restoration in *VM.* is not [*sam*iš*]-*pa-ri*, but [*samGR-RIM ap*-pa-ri*, with *Mat.* 88, 1, 75 [*iš*-*RIM šā (?) ap-pa-ri* li-ʾīr (?) (cf. Pl. 42, K. 274, 6).

We must therefore return to evidence from *samāš*, presumably a form of *Asa jmtida*, which I connected with the Persian *aza* ("mastic", the base of the latinized *asa*).

First, it would be as well to consider the details of the plant and drug:

*CPI.* 533 says that there are some sixty kinds of *Ferula*. In medicine, *P.* 196 gives the uses of *Asa jmtida* in general as nervous, stimulant, expectorant, laxative, and carminative, for flatulence, hysteric paroxysms, chronic bronchitis, and as enema. In India *F. alliacea* is given for dyspepsia, colic, hysteria, and as an aphrodisiac, and as enema (*BMM.* 336). *Disc.* iii, 84, prescribes silphion (some form of this drug) for eyes, baldness, and dysmenorrhoea, and in the Talmud (Preuss, *Bib. Talm. Med.*),

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1 5 shekels also prescribed, *AM.* 89, 4, r. 10, probably drink for some form of *hiniqti* (retention).
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205) 3 shekels of ḫiltīth are to be used in cold or warm water for "heaviness of the stomach" on three successive days. IB. 688 gives it as diuretic.

We can next consider the species probable:

(a) Ferula alliacea Boiss. (from Khorasan, Kirman), the edible form: gum from upper part of the root, exuding as an opaque white semi-fluid, gradually becoming dull yellow or dark. Resin blackish-brown, resinosum mass reddish hue. Held in esteem by Eastern doctors from the earliest times. Names ḥīnga, angushek, ārīgūza, zendebuj (CPI. ib. : BMM. 336). The fact that this is called alliacea will be noted presently in comparing ṣamāʾ. (b) F. festida Regel (from Persia), the European drug of commerce (CPI. 534): the method of obtaining it is as follows (ib. 535):

"The tap-roots are exposed for a couple of inches. A thick slice is cut from the top, from which a quantity of milk exudes. The root is then protected from the sun by a domed structure, 6 to 8 inches in height, called a khora, formed of twigs and clay, and which has an opening towards the north. In five or six weeks' time a thick, gummy, reddish substance appears in irregular lumps on the exposed substance of the root. This is scraped off or removed, along with a slice of the root, and placed in a leather bag." It is called ḥingra, etc. (ib. 534).

(c) F. narthev Boiss. (= Narthev Asa festida Falc.) (from Kashmir, CPI. 536).

(d) F. scorodosma Benth. et Hook. (from E. of Sea of Aral and S.E. of Samarcand, FHP. 2nd ed., 315).

We must not omit the different varieties mentioned by ancient authors: IB. No. 158 speaks of two forms, ḥiltīt, the gum, and mahrūt, the root, just as Theophrastus speaks of one kind from the stem, and the other from the root. Avicenna (quoted CPI. 533) speaks of the "good" and the "feitid". Pliny, NH. xiii, 43, speaks of the narthev and the narthevaya. The two words μαγνηδρις and μαστετον should also be mentioned. Note also that IB. 158 says that the Asa festida grew near Babylon, and that in more modern times so large a quantity as 3,000 maunds of Tabriz Asa festida is mentioned by Pelly (Trans. Bombay Geogr. Soc., xvi, 1860, 416) as having been exported from Bushire.

Taking, then, the theory that ṣamāʾ is Asa festida, the first point to observe is that its name ṣāʾ would suggest a connection with the mineral ṣāʾ-eggies aṣgikū, inib karaši ("fruit of leek"), arsenic, a metal which has an alliaceous smell when roasted, which would bring it into association with the garlic-like smell of the Asa festida, especially F. alliacea (DAGG. 54). The next point is that its name ṣāʾ-eggies = edu, the "single plant", i.e. the single stalk, just as Theophrastus (EP. vi, ii, 7) describes the narthev, as growing very tall and with a single stalk, which is jointed (and in this last we can also see an association with the Assyrian alchemist's synonym for ṣāʾ-eggies as "the human-bone plant", p. 352). Narthev Asa festida Falconer (= Ferula narthev Boiss.) has an erect stem of ten feet high, throwing out from near the base a regular series of branches bearing compound umbels. F. scorodosma Benth. et Hook. resembles the preceding, but its stem, 5–7 feet high, is nearly naked (FHP. 2nd ed., 314). Pliny's description of the Ferula (NH. xiii, 42) as having a "stalk divided into knotted joints" and as "making good
walking-sticks for the aged” comes very near our “human-bone plant” and the synonym āṭṭī reʾi “shepherd’s staff”.¹

Thirdly, note VM., Pl. 42, K. 4140, B, i–ii, 17: Pl. 44, i–ii, 42: Mat. 88, 1, 65:

\[\text{šamē-du} | \text{ina pu-uš (or nil) -[tū] }\]

The latter word can hardly be buštu “sexual part”, since a more definite medical word would have been used. Possibly it is to be read punittu, and thus is comparable to the Syr. pannʾthḏ “the back of the hand”, i.e. used for staining the back of the hand, just as we find šamnuḫurtu, another form of Asa foetida, was used in Assyria (p. 358): it is not only the palms and nails which are stained with henna in the East nowadays, but even the backs of the hands (Scripture Manners and Customs, S.P.C.I., 1913, 231).

Fourthly, there is evidence from its synonym šammo sāmu “red drug”. The gum of Asa foetida takes on a reddish-brown colour: cf. MPB. ii, 778: “Das ausgewossene Secret ist anfangs rein weiss (wie bei Galbanum . . .), nimmt aber an der Luft oberflächlich bald eine zart rothe, dann rothviolette, später ins Braune gehende Farbe an, während der wachsglänzende Kern weiss bleibt,” much as Pliny says of the magydaris, a form of Asa foetida (or similar), that it ought to be slightly red without, and, when broken, quite white and transparent within (NH. xix, 16). This synonym ša(m)mu sāmu actually occurs in MT. (Kū. iii, iv, 14) along with šamLAL, etc., in a prescription for some form of stomach trouble (jaundice?), just as the other form of Asa foetida, šamNU-LUH-HA is used, alone, for jaundice, drink in beer (Kū. iii, iv, 23); it should be added that Asa foetida is a diuretic, which would have its effect on jaundice, IB. 688.

Lastly the medical uses of šamAŠ coincide with those of Asa foetida. We have a gum (ḥilu) of šamAŠ prescribed for coughing (i.e. the bronchitis of p. 355); šamAŠ itself is used ext. for ghostly seizure (cf. the “hysteric paroxysms” of p. 355, or perhaps the smell of Asa foetida, which drives away the ghost, as in medieval magic, with which cf. my Sem. Magic 149): and int. for strangury (the “diuretic” of IB. above), gonorrhœa (ib.), cough (like the gum, above), and as “a drug for screameing”, perhaps the hysteric paroxysms and hysteria, of p. 353; and perhaps as enema (p. 355). Its synonym šamšA-PA is used for weak hair, just as Diosc. recommends siphion for baldness.

Of the other forms of this group, it might be noted that there is a vague similarity of sound between the Persian angushēh, hingiseh, and angusa, and the name for šamAŠ in Šabarû, šamkandā.

(2) Leaving šamAŠ as one form of Asa foetida, we can go on to šamNU-LUH and šamNU-LUH-HA (tiyātu, nuḫurtu), which I believe are also forms of Asa foetida (AH. 132). That šamNU-LUH and šamNU-LUH-HA are distinct is obvious, inasmuch as they occur side by side in the same prescription (p. 354), and similarly šamNU-LUH-HA is distinct from šamAŠ, for a similar reason (cf. AM. 89, 1, 1, and 6). At the same time šamtiyātu and šamnuḫurtu are obviously not far apart in meaning, since they occur in the same syllabary (p. 354); on the other hand their relation to šamAŠ is more remote, since they are not included in the synonyms for this

¹ Note in Arabic that 'asā al-ṭūf is the Dipsacus fullonum, and also apparently Agrimonia Eupatoria, Löw, Ar. Pfl. 36, Herzfeld, Beih.
drug, so far as we know. If we might draw an inference from our evidence, it would appear, since samNU-LUH-HA is definitely nuḫurti (p. 354), and since samNU-LUH seems to take the place of tiyātu alongside samNU-LUH-HA, that it is possible that samNU-LUH = tiyātu.

To identify samnuḫurtu and samtiyātu as forms of Asa fatīda we have the following evidence:

(a) samtiyātu has a gum (ḫīlu). Tiyātu has been correctly compared to the Arum. tiʾāh (see Kü. 85), but the accepted meaning of this latter as ranunculus (e.g. cf. Zimmern, AF. 56) must be challenged. If this word = the Assyrian tiyātu, the medical uses of the latter make ranunculus impossible. It would have been out of the question for Assyrian doctors to have prescribed the ranunculus as samtiyātu as in MT. Ranunculaceae are plentiful in Syria and Palestine, but these are so frequently acrimonious and even poisonous that, in spite of their use sometimes as purgative and emetic (GM. 10), such a use in Assyria would have been contrary to any expectation. Moreover, the ranunculus (buttercup) is not quoted in Syriac medicine at all. Indeed, the presence of a “gum” (ḫīlu) of tiyātu is final. P.J. iii, 125, says that “in Babylon hielt man in gaonäischer Zeit tiyah für ἴκαρ αγ’dhāna”, i.e. Asa fatīda. According to Levy (Neuh. u. Chald. Wörterb. iv, 639) quoting Maimonides, the tiyah is said to be the root of the hiltīth (= Asa fatīda). Obviously, if the Assyrian samtiyātu is a form of Asa fatīda, hiltīth is merely a foreign garbling of the Assyrian hil samtiyāti “gum of tiyātu”. The root may be cognate to the Syr. t’wā “wound”, parallel to samnuḫurtu “the slit plant” (with reference to the slitting of its root). In the Ras Shamra text the simple form tjt may be Asa fatīda (Virolleand, Gleich, i, 1938, 24).

(b) samnuḫurtu, from nahāru “to slit”, as Maqlû v, 38, shows: kima samnu-LUH-ŠAR littahhīra šapāocket-tšā “like Asa fatīda may her lips be slit”. The reference is, of course, to the method of cutting the Asa fatīda root (p. 354) (cf. also ib. vi, 127, dannat samnuḫurti-ma unahīra kal kīşpiši “strong though the Asa fatīda be, I will slit all thy sorcery (like it)”, (the exact translation not quite certain). As is shown on p. 354 the samnuḫurtu is used ext. for teeth, eyes, sores, and poultices, and int. for overmuch saliva, jaundice, lungs, cough, strangury, menorrhagia; as enema and suppository; its root for the Hand of a Ghost, its seed for ears, its gum ext. for lungs, and int. for strangury, its water for strangury, and its powder in a warm enema. So much of this may be paralleled by the more modern use (p. 355) that I think the medical evidence may be said to coincide well.

Hil nu-ḫur-tim is found as far back as Kassite times (Waschow, MAOG. 1936, x, 1, 35, l. 31).

One point worthy of particular notice is the use of [samnu-LUH-HA as one of the four plants used for staining arms (hands), the other three being turmeric, mustard, and saffron 1 (Pl. 48, Rm. 328, vi, 2–4), the Assyrians thus following the Arab custom of staining the hands yellow as with henna. The oil of Asa fatīda is of a light yellow colour (IMP. 1, 631), and it must not be forgotten that that particularly yellow paint, gamboge, is also a gum resin.

1 It would thus appear that henna was not known in Assyria.
(3) There are still two classical words, *silphium* and *laser* (*laserpitium*), which are uncertain. The former would appear to have been an edible product (for a picture, see Maspero, *Passing of the Empires*, 555), and the latter probably *F. foetida* (*CPI. 533*). In this latter connection we may perhaps compare the Assyrian *la-sîr-bî-tu* which occurs (a) 108860, iii, 26 (CT. xxxvii, 21, *šamšâ-µî rîtu = *šamšîa-sîr-bî-tu*; and (b) *šamîla-sîr-bî-tu* in a list, *Pl. 16*, 93034, 13.

*Laser* was obtained from India and Persia in Roman times, being mentioned among the dutiable articles at the Roman custom-house at Alexandria (*FH. 2nd cent.*, 2nd ed., 315). Hehn (*Kulturpf. 189*, accepts *laserpitium* as probably *Asa judaica.*

(4) Finally, there is the Assyrian word *šurbi šar* in *MB.*, r. 65, with which Meissner properly compared the Syr. *šûr*bhâ (the milk of *aq*dhâna, *FJ. iii*, 455); but *FJ. iii*, 471, at the same time, maintains that this is not *'angudân* actually, but *'angudân rûmî* Seseli, and that *šûr*bhâ is not the *Asa foetida*.

We may therefore sum up the words for *Asa foetida* thus: *šamAs*, *šamSÁ-PA*, *šammu sâmnu* (*"the red drug"*) "the human-bone plant", and *ḥaṭši re'i* (*"shepherd's staff"*) represent the single-stemmed *Asa foetida*, the *š* as being the equivalent of the Persian *āza*, and the latinized form *asa*, with a connection through its garlic taste and smell with the arsenical *šamš鄙-GE4-GE4*; the "shepherd's staff" contains the same idea as the Latin *Verida*; the use of *šamAs* in *MT.* is satisfactory as an equivalent of *Asa foetida*. *šamNU-LUH* perhaps *tiyâtu* and *šamNU-LUH-ḪA* (= *nuḫurtu*, similar in sound to the Arab. *mahrût* (?)), the "white and sweet" kind of *Asa foetida* in *IB. 158*, and actually the equivalent of the root of *anjodân*, *FJ.* ii, 454) are also forms of *Asa foetida*, the former being the *šîḏ* of the Hebrews, while its gum, *ḫîl* *tiyâtu* is the equivalent of the Heb. *ḥîltît* (which is thus disproved to be *rânucaulus*), and the latter used as one of the drugs for staining hands like henna, which suggests that while we have a red sort in *šamAs* (*šammu sâmnu*), we have a yellower kind in *nuḫurtu*. Finally the Assyrian *lasîrbitu* would appear to be the original of the classical *laserpitium*, and *šurbi šar* the Syr. *šûr*bhâ, whatever its exact meaning may be.

(ii) *šam* *Síchu, Artemisia Judaica L. (et al.), wormwood.

(iii) *šam* *SîBarîtatu, Ferula Persica Willd., Sagapenum.

(iv) *šam* *SîArgamu, Amyris Gileadensis (or sim.), Balm of Mecca.

*Pl. 25*, K. 4398 + 4418, iii, 5-11: *Pl. 38*, K. 14087 reverses the order of the sections:

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We have three drugs which are at times given as synonyms of each other, thus making the identification difficult. At the same time VAT. 9000, which is responsible for most of the difficulty, is not, I think, so trustworthy as the Kouyunjik texts, and hence, in case of doubt, it is better to trust the latter. In MT., on the other hand, the three drugs samsiulu, samarganu, and iiambariratu are clearly distinct.

(a) iiamSīhu is undoubtedly the Syr. šīḥā, Artemisia Judaica L. (cf. Fonahn, OLZ. 1907, 640): the Arab. šīḥā = A. densiflora Boiss.: šīḥ (doubtless the same, A. Judaica L. (FJ., i, 380): and A. Herba alba Asso (ib. 381). Ainsworth (T., 177), mentions A. fragrans and A. absinthium at EI-Hadhr, and one kind of Artemisia in the Jebel Makhlu district (ib. ii, 182). Rich says that the country near Kirkuk is covered with wormwood (Koord. i, 41, cf. 50). Xenophon mentions a plain full of apsinthium below Thapsacus (Anab. i, v). I owe to Godbey's article in AJSL. 1929,
226 ff., a quotation from Apollonius (i, 21), where it is said that towards Babylon the land was so full of absinthe that all other herbs were disagreeably bitter.

The identification is confirmed by the synonym for īsam ri₄marguṣu (one of this group, but not actually a synonym of īsamšīnu, i.e. īsamṣamuṣēri, the Syr. sıdrā, A. vulgaris L. (AH. 107 : cf. FJ. ii, 385). This, coupled with the grouping of the three drugs (šīnu, arganu, bariratu) together, shows how very closely they were allied. Actually, these three drugs are as a rule quoted all together in prescriptions, and we can now discuss their medical uses:

(a) (īs)(īsam)šīnu.

(1) Simply: Ext.: Feet, with [arganu and ba₄bariratu, †, in milk and beer, bind on, AM. 70, 7, i, 5. Eyes, with ływ[bariratu], †, AM. 8, 1, i, 4. Ears, probably, [apply], AM. 33, 1, 3. Swellings with (statearr(arganu and istring(bariratu, †, bind on, AM. 15, 1, i, 14 (JRAS, 1937, 283): 73, 1, i, 13: 74, 1, ii, 13. Bruise (dikšī), with istring[arganu and istring(bariratu, dry, pound, sift, apply with wheat flour, AM. 96, 1, 14. Blow (miṣṣiti) with istring(arganu and istring(hum-ha [apply], AM. 79, 1, 20, and with istring(arganu and istring(bariratu, †, as ointment, AM. 94, 2, ii, 16. Cough, †, prob. ext., AM. 50, 3, 7: constriction of lungs, † (including istring(arganu), use uncertain, AM. 53, 4, 16 + 63, 6, 12. Almost certainly for pleurisy, poultice with istring(arganu and istring(hum-ha, AM. 87, 6, 5. Breast, with istring(arganu, †, bathe, AM. 49, 1, ii, 7, dup. 48, 5, 4. “Poison,” etc., with istring(arganu, istring(bariratu, †, bathe, AM. 52, 5, 5.

Int.: Uncertain, with istring(arganu, †, in beer drink, and anoint with oil, AM. 88, 2, r. 9. In one of 3 maṣqātā (potions), †, including istring(hum-ha, but not istring(arganu, AM. 41, 1, r. 3.

Enema: 10 shekels, with 10 shekels of istring(arganu and 10 of istring(sig-bu-rat, †, for bruise (dikšī), KAR. 182, 24: 5 shekels with 5 of istring(arganu and 5 of istring(hum-ha [sic], †, for tab-ud-da, etc., KAR. 157, 27, dup. AM. 84, 1, ii, 3. 1 pitgu of istring(sīnu, istring(hum-ha, but not istring(arganu, †, AM. 41, 1, iv, 16. Fumigate: with istring(bariratu and prob. istring(arganu), †, when a ghost lies on a patient, AM. 99, 3, 6: †, but not istring(hum-ha, ib. 14.

(2) ZID (powder): of istring(sīnu, of arganu [sic], and of istring(hum-ha, †, for blains (ṣiṣātā), KAR. 192, 52-3 (note Meek, RA. 1920, 181, S. 1701, iii, 3, istring(st-[hu].

There is a curious ritual for a woman sick of naḥšāt (menorrhagia) ending with the “pouring out” (tā-sa-raq) of istring(sīnu, istring(arganu, and istring(bariratu before the door, the woman then reciting a ʂegū before the door, and before a god (†), KAR., 194, 14. The symbolism may perhaps be that with the door representing the opening of the uterus, the drugs represent possibly the menstrual fluid, although as will be seen later, the two latter do not produce a red-coloured fluid.

(b) istring(bariratu.

Besides the instances quoted above, istring(bariratu and istring(arganu occur without istring(sīnu: Ext.: Feet (without others) bathe in water, AM. 15, 5, r. 2 + 75, 1, iv, 2: rub (without others), anointing with others subsequently, AM. 74, 1, iii, 6.

1 istring(Samuṣēri must surely be for istring(sāmuṣēri “plant of the desert” (a good description of the Artemisia), the second sibilant causing the first s to become s.
But umbnails bariratu occurs without the other two: "poison," †, poultice, AM. 98, 3, 11. Fumigate: Stomachic, †, AM. 62, 1, i, 6.

What is important to note is that *hum-HA replaces bariratu constantly in this triad of drugs (*siHU, *arganu, and *bariratu) and indeed in KAR. 191, 18, dup. in part of AM. 70, 7, i, 6, *hum-HA varies with *ri-ra-tu in the triad (cf. AH. 172).

*hum-HA is used in MT. in addition to the above: Ext.: Lungs, †, prob. ext. AM. 55, 1, r. 7 (*siHU, *bariratu, *arganu not visible). Int.: Strangury, †, drink in wine or beer, AM. 59, 1, 34 (without *siHU, *arganu, or *bariratu).

Before going into the evidence for the identification of *arganu and *bariratu, we can complete the equivalence *siHU = wormwood, Artemisia. We have already seen that samuseri (evidently allied to it) = Syr. sorsi, Artemisia vulgaris L.; the bitterness of the wormwood, I might add, appears to be indicated by the synonym on p. 360 for margusu (= samuseri) ("In the mouth of the common people"), *hashur abi, the gall-apple.

The use in MT. of *siHU (eyes, ears, swellings, bruises, cough, pleurisy, int. (rarely), as enema, and in fumigations) can be compared to that of the Artemisia in later times.

CPI. 93 says that A. absinthium L. is a violent narcotic poison in large doses, but in medicine is an aromatic tonic and anthelmintic. According to IMP. 699 ff., A. vulgaris L. is used in India as a stomachic, for meneses, and ext. for fomentations: A. Persica Boiss. (vernacular shih) is used as a tonic, febrifuge, and vermifuge, and A. maritima L. is an anthelmintic, is used for gleet, ague, and as a poultice for scorpion-stings. The New CycL. of Botany (Clark, no date) says of A. absinthium that its taste is intensely bitter: it is used in stomachic complaints, intermittent fevers, jaundice, and against worms: "the plant steeped in boiling water, and repeatedly applied to a bruise, will remove the pain in a short time, and prevent the swelling and discoloration of the part." Lane, Manners, i, 344, speaks of fumigation by it in modern Egypt. In ancient times it was used as a girdle against ghosts (Frazer, Golden Bough, ii, 287): Aretaeus of Cappadocia (a.d. 100-150) prescribes it for melancholy, and Apuleius knew that it was useful in driving away demons (quoted Godbey, AJSL. 1929, 226). Doughty (Ar. Des., i, 379: ii, 280) speaks of it as a gum, mentioning the gums of the milder wormwoods as put into milk and mereesey (beer) by the Arabs.

*SiHU is thus clearly Artemisia, wormwood, and we can go on to the other two:

(b) Bariratu, marked with the det. *riq, must be as Langdon saw (PBE. xxxi, 1914, 73, n. 6) the same as the Syr. b-r-r, Ferula Persica Willd., Sagapenum. That it grew in Babylonia is shown by MB. 47-50, where bariratu šAR is included in the same section as iaqquganu šAR, iarganu šAR (= arganu ?), and qinnat andi šAR. The form *riha-ri-a-tum occurs in a

1 I have apparently made a mistake in my copy of AM. 33, 3, which amalgamates the two tablets K. 6828 and Rm. 116. Ll. 10-12 are dup. of AM. 99, 3, 5-8, and I see that I have put in AM. 33, 3, 11, "*hum-HA [hiatu]-ra-tu." Obviously, the *hum-HA of the one text replaces the [*ha-ri]-ra-tu of the other, as in AM. 99, 3, 7, giving another instance of the variation *hum-HA = *bariratu.
Larsa text (beginning of 2nd millennium, Charles F.-Jean, Bab. 1927, 28, 189).

Sagapenum is used in SM. for eyes, and as a plaster, and int. for coughs and as a purgative, sufficiently near to MT. Its use is allied to that of Galbanum (cf. FH. 32).

In AM. 18, 5, r. 2 + 75, 1, iv, 2, we have: "When ditto, thou shalt bathe the sick place, anoint with oil, put iarganu and sambariratu in water, heat in an oven, take them out, rub his feet therewith, anoint with oil, mix in pine- and fir-turpentine and samankinuti, anoint, and he shall recover." Now this use of iarganu and sambariratu heated in an oven shows that both are soluble if boiled in water, and I found by experiment that this was the case with the Sagapenum and the specimen of the Balm of Gilead supplied me in Oxford. The Sagapenum dissolved into a thin milky fluid; the Balm of Gilead did the same, but was definitely yellower in colour. As I have mentioned above in the symbolic ejection of the Artemisia, Sagapenum, and Balm of Gilead (if this be the arganu), in the case of the woman troubled with menorrhagia, a redder colour should have been expected.

(c) i Arganu occurs (as given above), along with i (sam)silshu and i (sam)bariratu. It perhaps grew in Mesopotamia, as may be shown by MB. 47, iarqanu šar 2; and (β) AM. 1, 2, 13: "When a man's head has samānu (itch, scab), thou shalt bray dust from the limestone threshold of an old house, . . ., -su-ut, and grows 3 in the midst of i arganu, seed of arnoglosson, etc.

The word (and i (sam)riqarganu) suggest the cognate Arabic root 'araJ'a "to smell sweet", "exhale perfume", perhaps indicated by its synonym i (sam)pi-nu (arganu (!)) ša sadi (i (sam)pi having the value riqkanaktu, p. 63). We ought to be able to identify i (sam)riqarganu with one of the groups of resins, gums, or similar, but we have little on which to base an identification, except that it is a gum with a sweet smell used like Artemisia and Sagapenum in MT. ext., less commonly int., and almost certainly in fumigation.

I suggested in AH. 106 either Amyris Gileadensis or A. opobalsamum, which perhaps are not far from the correct drug. PC. iii, 1835, 345, says of Balsamodendron Gileadense, "though called a balsam, and denominated balsam of Mecca, balsam of Gilead, is Dot entitled, chemically, to rank as such, being an oleo-resin. It is of two kinds, that obtained by spontaneous exudations, and that which is obtained by boiling the branches. The former is so highly prized in the East, and so expensive, that it is never brought to Europe . . . Though formerly considered a cure for many diseases, it has now fallen into disuse. Any benefit which might be derived from it can be obtained from any of the finer turpentines." The same writer quotes Strabo (b. xvi) as saying that it possesses aromatic qualities, and cures headaches, catarrhs, and dimness of the eyes. Pliny (NH. xii, 1 The same as the Balm of Mecca.
2 This is included in the same group in this passage in MB. as bariratum šar, so that we must presume it to be equal to i arganu: the Syr. yordād (Low, Ar. Pfl. 174), the Mishnaic "herb on the face of the water", is unlikely.
3 GaL-bi, paralleled by i-ra-bu (-d) in l. 18 of the same text "powder from Lycium which grows in his (its) pūitīt".
54) says of the opobalsamum (which is apparently the “Balm of Mecca”, Bostock, ib.) that it is of extraordinary sweetness.

Other synonyms of these words are:

(1) samMarguṣu, “a drug for cleaning teeth: without a meal clean his teeth,” Pl. 23, K. 259, 10: KAR. 203, i–iii, 15. For head (see samurnuqqu). Fumigate, †, AM. 101, 3, 18. riqa-mar-gu-sum is mentioned on a Larsa text (about the beginning of the second millennium, Charles F.-Jean, Bab. 1927–8; 195). It will be remembered that myrrh is used in many tooth-powders.

(2) samUruq(g)u, equivalent to both samarganu and sambariratu, is used in MT. for head with pine-turpentine, samargusa, †, CT. xxiii, 38, 26, dup. TCPP. 33, and KAR. 202, iii, 44.

(3) samLI-par (although given as śiḫu instead of śiḫu on a variant, Meissner, MVAG. 1913, 2, 17, 20) is properly śiḫu, not śiḫu, which suggests that it may have been erroneously included here by the similarity of sound.

(4) The “Couch of Ishtar” suggests almost a mythological connection with the origin of the word Artemisia, which (according to Pliny (NH. xxv, 36) was either from Artemisia, the wife of the king Mausolus, who adopted the plant known hitherto as parthenis, or that it came from the name of the goddess Artemis Ilithyia, because it was used in the diseases of women. In the explanatory text of plants published by Labat (Comment. Assyri. Babyl. 130, l. 12) Ki-Na, twin occurs with the explanation ... [z] u (?)-ni (?)-u-tu ma-at-al-tu dIšar.

To sum up: the three drugs (i)sam)siḫu, (i)sam)(riq)bariratu, (i)sam)(riq)arganu are very commonly used in a group together. Siḫu is philologically correctly “absinthe”; curiously samušeri, the equivalent of the Syr. šašra absinthe, and meaning lit. “plant of the desert”, an apt description of absinthe, is given only as equivalent of masgūṣu, which — bariratu or arganu. The “great marguṣu”, which in common speech is the gall-apple of the tamarisk, doubtless refers to the bitterness of the absinthe or of the Sagapenum. Bariratu, comparable to the Syr. b-r-r, Ferula Persica Willd., is the Sagapenum. Arganu is less easy, but as determined by riq will be a gum, and its root is comparable to the Arab. ’araja “smell sweet”, and it may well be the Balm of Gilead (Balm of Mecca).

riqa-NAN-bar, niquštu, probably Euphorbia Antiquorum L., or similar.

This occurs thus in MT.:

(1) Simply: Ext.: Eyes (†), [apply], AM. 14, 3, 2. Ears, †, apply, AM. 37, 2, r. 8. Temples, †, bind on, AM. 20, 1, 3, 5, 7, dup. CT. xxiii, 39, 15, 17, 19, and partly KAR. 188, 10, 12 : AM. 20, 1, 15, dup. 15, 2, 1 + CT. xxiii, 40, 28 (AJSL. 1937, 14) : AM. 103, 1, 15. Footsoles prickling, †, [apply], AM. 75, 1, iv, 25 + 15, 3, r. 4. To ease muscles of hands and feet, †, bathe, AM. 98, 3, 13. Poultice, †, AM. 72, 2, 6 : 98, 3, 9. Anoint, †, AM. 52, 5, 13 : 92, 4, 4, 5 : 96, 4, 10 : 97, 4, 8, 14. Hand of Ghost, eyes affected, etc., †, anoint in cedar-blood, KAR. 182, r. 20. On neck, †, put, AM. 28, 7, 5, dup. 23, 1, 16.

Enema: † (½ shekel of niquštu), AM. 41, 1, iv, 11.

Int.: Stoppage of saliva, [drink], AM. 31, 4, 17. Uncertain, drink, AM. 91, 5, 8.

Uncertain use: “retention of sick anus” (hiniqti ku.gig), †, AM. 40, 5, 18.

Quantity: (see Enema): † [drink], †, prob. ext . . ., AM. 60, 3, 14.

(2) “Male and female”: Ext.: Instructions to the physician in treating a patient, to keep various devils away, that he anoint himself with riq-an-bar “male and female”, in honey and himetu-ghee, KAR. 31, r. 21. Temples, †, hang on neck, AM. 4, 6, 6. Against 4lugal-ur-ra with in-bul + bul-an-na, bind on (aš-su), KAR. 186, 25. [Hand of Ghost], †, anoint in cedar-blood, AM. 93, 1, 2. Ghost, †, presumably anoint, KAR. 56, 6.

Fumigate: Ears, †, AM. 33, 1, 29, dup. 35, 1, 5, and 38, 2, iv, 1. Head, †, prob. [fumigate] temples, AM. 2, 1, 15. Ghost, †, fumigates, KAR. 182, r. 11.

(3) “Oil (of (1)) jīl (gum) 1 of riq-an-bar”: Ears, †, uncertain use, AM. 34, 1, cf. “oil of riq-an-bar”, ABL. 570, 14.

In AH. 141 I wrongly, I think, identified this gum as the Liquidambar orientalis Miller, on the grounds that it was a large, gum-producing tree from Anatolia, facts coinciding well enough with the evidence. But two passages in rituals are convincing that this is wrong, since it must be a drug with a definitely unpleasant smell. Of these two passages, BBR. No. 26, i, 18 ff. (and almost a repetition of ii, 1) is an atonement ritual (takpirti) for the King, which directs that after the “atonement” (in Col. ii this is a kid) has been put outside the door, and after various rites which “thou shalt perform”, the mašmašu-priest is to be prepared for his share in the ritual. He is to crush 2 riq-an-bar, mix it with honey and himetu-ghee (Col. ii adds “oil”) and anoint himself therewith, and put on red garments. After this the procedure apparently again devolves on the “thou” of the earlier part, who prepares and offers various oblations, including a censer of riq-an-bar and samekur-kur (Veratum) (according to Col. ii), and then again the mašmašu takes charge.

The first piece of evidence is offered by the ceremonial “red garment”. Why is the stress laid on the red colour?

The answer is to be found, I think, in a passage in the Utukki limnāti (Tablet “B”, CT. xvi, pl. 28, ll. 64 ff.), where a mašmašu is combating an alū-demon. He is to hold a raven and a hawk in either hand (both birds being intended by their nature to frighten away supernatural winged creatures), and then the text goes on: “With a red garment of terror I am clothed (against ?) thee, with a red dress of effulgence

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1 A preceding recipe, l. 3, lb., shows lā 4šur-man “oil of Cypress” which makes “oil of gum of riq-an-bar” certain.
2 I do not believe that Zimmern is right in BBR. 122 in referring i-su-ak to the Heb. sāk “anoint”, however tempting it may appear. For one thing riq-an-bar “male and female” is not, as far as is known, an oil, but a gum. Secondly, the words which follow “and with honey and himetu-ghee he shall mix, anoint himself” are definite. The riq-an-bar is to be treated in some way, and then mixed with the anointing medium; and since all these gums harden after they have been collected, the probability is that sāk here comes from the same root as sēkū “powder”, Liqā sēkū (AM. 8, 7, 4, and 23, 10, 6) will be fat of a consistency similar to that of a gum, which must be beaten or pounded. A series of 56 zīr (powders) is called “a great sēkū” (KAR. 192, r. ii, 57).
(namrirru) (my) pure body I have clad (against?) thee.” It is paralleled by what is obviously the same ritual in ABL. 24, a letter from Marduk­šakin-šumi, giving the actual ritual against this demon and An-ta-šub­ba: “The māshāsu says that ḫula, pirḫī (caper), nībaltu (caper) are hung (‘i-la) on the mēseti of the door” (which corresponds to ll. 73–5 of the Utukkî-text, giving mēseti as a variant for ḫitte); “the māshāsu shall wear red garments and put on a red ḫūr.” Here, the red garments are obviously intended to strike terror into the demon; red was the colour of the Assyrian soldiery (Nahum, ii, 3), and it was the coccus (scarlet) which was the dye used for the cloaks of Roman generals (NH. xxii, 3). How far Is. ix, 5, can be added as evidence is uncertain: “For every battle of the warrior is with confused noise and garments rolled in blood.”

Equally, in magic, the colour red obviously represents blood, just as blue represents a swollen or discoloured muscle, and white and black appropriately the powers of good and evil, light and darkness (DACG. xxxix). The māshāsu is to threaten the demon with all the ideas of hostility connected with the blood-coloured military dress.

These clues—the blood-coloured dress, and the birds which frighten winged creatures away—must surely point to a similar intention in the use of the aromatic ṛiﬅAN-BAR “male and female”. It will not be a pleasant perfume, but definitely the opposite, this being certainly also indicated in KAR. 31 that demons, including the alā and the An-ta­šub­ba, shall not approach the māshāsu (r. 19–20): “bray ṛiﬅAN-BAR ‘male and female’, mix in honey and himetu-ghee: when thou wouldst approach the sick man, anoint thyself therewith, and approach the sick man; nothing evil will come nigh thee.” ṛiﬅAN-BAR “male and female” obviously must have an unpleasant smell, whether it be used in fumigation or as unguent.

The next point in evidence for the meaning of ṛiﬅAN-BAR comes from the Tell-el-Amarna tablets (TA. No. 41, 43) where Šubbiluliuma sends “two great trees of nikibtu” as a gift to Ḫuria, king of Egypt. This points to a great size and a provenance in Anatolia and, since they were a royal gift, the probability is that they were not to be found in Africa. I had previously thought that as the Liquidadmar is a handsome tree some 30–40 feet in height, forming forests in extreme S.W. Asia Minor, with its trunk providing Styrax preparatus (expectorant, stimulant, useful in bronchial affections and scabies (FH. 2 275: P. 1170), the nikibtu well coincided with it. Indeed, its very name ṛiﬅAN-BAR was similar in sound to the Arab. ḥanbar, Liquidadmar.

Nevertheless, this will not meet the needs of the text which demands an unpleasant gum as the product of this tree. I noted in A.H. that the Phoen. voukouβar (Löw, Ar. Pfbl. 193) is supposed to be the τίθυμαλλος, Euphorbia, and this would seem to correspond with the ṛiﬅAN-BAR, nikibtu. It will be noticed that the Assyrian drug is rarely used internally, and that there are “male and female” kinds. Diosc. iv, 162, speaks of the male and female tithymallos, the former being Characias, Euphorbia Characias, and the latter Myrsinites, E. mersinites, both growing in S. Europe, which would coincide with the latitude of Anatolia.

E. Antiquorum L. is a tree growing to a height of 25 feet, often 3 feet in circumference. Its juice and bark are purgative, its stem is used for
gout, and its very acrid and irritant juice is used for rheumatism, toothache, and warts (IMP. 1130). Int. it is usually administered with purgatives and aromatics. In some parts of E. Bengal and Assam the tree is almost sacred, and is supposed to protect the gardens round which it is planted, and it safeguards, so it is thought, the inhabitants from snake bites (CPI. 530). The E. Neriifolia L. is a prickly, milky shrub used in ears, for warts, for rheumatism, and as a blistering agent, and also internally (CPI. 530 or IMP. 1130). The inspissated juice of E. Nivulia has been used as a diuretic (WPI. 204).

We have, therefore, considerable justification in seeing Euphorbia (probably Antiquorum) in the niqibtu, the root of which word is probably cognate with the Syr. n'qabh “to pierce” 1. One objection to the identification is that it is used in a text in which eyes are prescribed for, but it is so broken and uncertain that the text given is no serious evidence against it.

1 [A syllabary published by A. Goetze in JAOS. 65, p. 225, l. 50, gives a ‘Sumerian’ equivalent it-gi-id-qa, which suggests that both this and the ‘Akkadian’ niqibtu are varied versions of a foreign word.]
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$'amas, 207 f., " pellitory."
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determinative "sam(m)u / i, sam, occur in the following compound names :­
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sam / i / u akaru tami, 227, " drug for laying a curse."
sam / i / u AS, 352.
sam / i / u ask, 64, 131, 139, 141, 146, 162 f., 162 ff., 185, 204, 364, " appetizer, antodyne."
sam / i / u balati, 8.
sam / i / u baliti, 65.
sam / i / u baritu, 162 ff.
sam / i / u BLI libbi, 228 f.
sam / i / u bir-bir-re, 275.
sam / i / u dadad, 180, 184, 186, " thorny carob."
sam / i / u daim parasi, 9.
sam / i / u eneš, 149 f.
sam / i / u erimu, 144, " drug for a blister."
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sam / i / u ki-ur()-ni, 102.
sam / i / u KV(dp)at, 0 f.
sam / i / u kuraštu, 144 f., " drug for ring-worm."
sam / i / u la-mas-si, 24 f.
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sam / i / u lamade, 70.
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\texttt{šurdi, 310.}
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\texttt{ter(n)aratu, 261 ff., 267, “seed of the fir.”}
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\texttt{tubatu, 25, 165 f.}
\texttt{tutallu, 310.}
\texttt{tutt(l)du, 64, 65.}
\texttt{tutlu šāmitu, 252, 255, “red worm (kermes insect ?).”}
\texttt{tut(l)sal, 33n., 39 ff., 42, 43, 45, 46, “a soapwort.”}
\texttt{tutubnu (stuḫu, q.v.), 266, 289 f., “plane tree.”}
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