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ROBERT D. BIGGS,
JENNIE MYERS,
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MARTHA T. ROTH

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KADP 36: INVENTORY, PLANT LIST, OR LEXICAL EXERCISE*

Jan Tavernier, Leuven

1. INTRODUCTION

One of the most peculiar texts found in Mesopotamia is undoubtedly the so-called Neo-Assyrian Pharmaceutical Inventory (VAT 8903 = KADP 36),¹ also called “Apotheker-Inventar,”² “das Drogen-Inventar aus Assur,” and “Apothecary’s shelf-list.”³ The text originates from Assur.⁴ It may look like a simple list at first glance, but, as will become clear, a thorough study of this text is desired and needed, not least because of the simple facts that it is a text without parallel⁵ and that it touches upon the very definition of “inventory.”

A philological edition and study of this text is being prepared by Barbara Böck, who is revising Franz Köcher’s unpublished manuscript. The intention of this article is rather to present some notes on the character and function of this text.

2. DESCRIPTION OF THE VARIOUS SECTIONS

The tablet is quite well preserved and lists various medicinal plants. It is divided into six columns and contains thirteen sections, the ends of which do not necessarily coincide with the end of the columns.⁶

Most of the sections contain medicinal plants, most of which are unfortunately not (yet) identified while some others have been identified with modern plants. It should be noted, however, that some of these identifications are anything but certain and should therefore not be taken for granted.⁷ Examples are hound’s-tongue (*Cynoglossum officinale*, *lišān kalbi*; i 7),⁸ licorice (*Glycyrrhiza glabra*, *šūšu*; i 10),⁹ white hellebore (*Veratrum album*, *atā’išu*; i 14), meadow saffron (*Colchicum autumnale*, *kamkadu*; i 19), tamarisk (*Tamarix orientalis*, *bīnu*; i 33),¹⁰ mandrake (*Mandragora officinalis*, *pillū*; i 37), boxthorn (*Lycium depressum*, *šimaḥu*; ii 39),¹¹ saffron crocus (*Crocus sativus*, *azupirānu*; iii 2), common juniper (*Juniperus communis*, *burāšu*; iii 7),¹² chufa (*Cyperus esculentus*, *suādu*, iv 31), caper (*Capparis spinosa*, *baltu*; iv 42), cedar (*Cedrus libani*, *erēnu*; iv 26),¹³ cypress (*Cupressus sempervirens* and

* I wish to offer my sincere thanks to Barbara Böck (Instituto de Filología, Consejo Superior de Investigaciones Científicas, Madrid) and to M. J. Geller (University College London) for their helpful comments on this paper.

¹ F. Köcher, *Keilschrifttexte zur assyrisch-babylonischen Drogen- und Pflanzenkunde: Texte der Serien uru.an.na: mātakal, ḫAR.ra: ḫubullu und Ū GAR-šū*, Deutsche Akademie der Wissenschaften zu Berlin, Institut für Orientforschung, Veröffentlichungen Nr. 28 (Berlin: Akademie-Verlag, 1955), No. 36, henceforth KADP 36.

² D. O. Edzard and K. Veenhof, “Inventare,” in *Reallexikon der Assyriologie* 5 (Berlin: Walter de Gruyter, 1976–80), p. 139.

³ J. Kinnier Wilson, “Notes on the Assyrian Pharmaceutical Series URU. AN.NA: mātakal,” *Journal of Near Eastern Studies* 64 (2005): 45.

⁴ D. Goltz, “Mitteilungen über ein assyrisches Apothekerinventar,” *Archives internationales d’histoire des sciences* 21 (1968): 97.

⁵ E. Reiner, review of F. Köcher, *Keilschrifttexte zur assyrisch-babylonischen Drogen- und Pflanzenkunde*, in *Bibliotheca Orientalis* 15 (1958): 102.

⁶ Goltz, “Apothekerinventar,” p. 97.

⁷ Sometimes identifications are accepted because of cognates in related languages. A good example is *suādu* “chufa” (CAD s.v. *suādu*). This meaning is based on Syriac *su’dā*, Arabic *su’d*, both meaning “chufa.” Nevertheless, it is possible that the Syriac and Arabic equivalents designate a plant other than does the Akkadian word, due to a shift of meaning.

⁸ AHw. s.v. *lišān kalbi*.

⁹ CAD s.v. *šūšu*.

¹⁰ CAD s.v. *bīnu* A.

¹¹ CAD s.v. *šimaḥu*.

¹² B. Landsberger apud W. von Soden, “Bemerkungen zu den von Ebeling in ‘Tod und Leben’ Band I bearbeiteten Texten,” *Zeitschrift für Assyriologie* 43 (1936): 260.

¹³ CAD s.v. *erēnu*.

Cupressus horizontalis, šurmēnu, iv 27),¹⁴ juniper (*Juniperus drupacea*, duprānu; iv 28), and cumin (*Cuminum cyminum*, kamūnu; v 28).

Besides medicinal plants and trees there are other materials mentioned. The sixth section has only one plant, along with minerals such as alum, sulphur, gypsum, some salts, and perhaps some mineral substances such as oven slag and soot from a cooking pot.¹⁵ The eleventh section is remarkable, since it lists carriers, that is, means by which the medication is administered to the patient, such as butter, honey, etc. Finally, the last section is a list of medicinal preparations: powders, suppositories, bandages, potions, etc.

3. SOME ASPECTS OF KADP 36

3.1. THE COMPLETENESS OF THE TEXT

One of the relatively conspicuous aspects of the text is the fact that some plants are included twice, while others, very frequently used in Babylonian medicine, are not included at all.¹⁶ The names of the plants included twice are either synonyms or the Sumerian and Akkadian writings for the plant name. Examples are ^uazupiranu / ^uHUR.SAG (iii 2 and v 24), ^ušašumtu / ^uPI.ZIR (i 6 and iv 21), ^ukamkadu / šurnū (i 19 and ii 15), and ^ukurkânū / ^uKUR.GI.RIN (iv 40 and v 25) which are most probably synonyms.¹⁷ Among plants that are surprisingly not included in this text are *ankinutu*, *nurmū*, and *tijatū*.¹⁸

Not only are the sections with only plant listing incomplete, but sections 6, 11, and 13 are also incomplete. In section 6 some very important minerals are not mentioned, for example, *mil'u* and the *mūšu*-stone. The section on the carriers lacks some of the most frequently used ones, such as oils, beer, and wine. Possible explanations for this lack may be that these products were available at all times in any house and/or that some of the unmentioned products could not be stored because of their short storage life.¹⁹ The last section of the text will be discussed below (part 4).

It can thus be asserted that we are dealing here with an embarrassingly incomplete inventory or list. Possible reasons for the incompleteness of this inventory are (1) a classification system we do not recognize which excludes certain plants or (2) inaccuracy of the scribe.

¹⁴ CAD s.v. šurmēnu.

¹⁵ Reiner, in her review of Köcher, *Keilschrifttexte zur assyrisch-babylonischen Drogen- und Pflanzenkunde*, describes *ḥahū ša utūni* ("oven slag," iii 37) and *ummanu ša diqāri* ("soot from the cooking pot," iii 38) as magic preparations because they are used against witches in incantations (e.g., Maqlu III 116). Yet they occur also in normal medical texts and probably represent minerals, not necessarily magical preparations.

¹⁶ Goltz, "Apothekerinventar," p. 104–05.

¹⁷ See R. Campbell Thompson, *A Dictionary of Assyrian Botany* (London: British Academy, 1949), p. 164. Goltz, "Apothekerinventar," p. 105 n. 34, adds some examples of plants occurring more than once in the text, but two of these should be discarded: First, the logogram ^uAŠ occurs twice in the text (iii 16 and v 23) but may refer to more than one plant: *ēdu* (B. Landsberger, "Zu den Übersetzungen Ebeling's ZDMG. 74, 175 ff.," *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 74 [1920]: 443–44; Campbell Thompson, *Dictionary of Assyrian Botany*, p. 356; AHw. s.v. (w)ēdū(m); CAD s.v. *ēdu*) and *nukkatu* (as shown by Hh. XVII 148; see M. Civil and E. Reiner, *The Series HAR-ra = ḫubullu Tablets XVI, XVII, XIX, Materials for the Sumerian Lexicon 10* [Rome: Pontificium Institutum Biblicum, 1970], pp. 88). In all likelihood KADP 36 includes both plants and the fact that medical texts often mention the seed of the *ēdu*-plant, while *nukkatu* is mentioned in only one medical text (besides some attestations in lexical lists; cf. CAD s.v. *nukkatu*), suggests that the first passage refers to the *ēdu*-plant, while the second one refers to the *nukkatu*-plant. Second, Goltz confuses the two plants

named *kamūnu* in Akkadian (a kind of mushroom, iv 8–9, and cumin, v 28).

A special case is *elkulla*. If *elkulla* and *elikulla* denote the same plant, this would be another example of a plant mentioned more than once. Nevertheless, there is no unanimity among scholars on this issue. Both spellings, together with *irkulla*, are often mentioned together (R. Campbell Thompson, *Assyrian Medical Texts* [London: Oxford University Press, 1923], No. 88, 1:3 [henceforth AMT], ^ueli-kul-la and ^uir-kul-la; AMT 89, 1:1, ^uir-kul-la and ^uel-kul-la; L. King, *Babylonian Magic and Sorcery Being "The Prayers of the Lifting of the Hand": The Cuneiform Texts of a Group of Babylonian and Assyrian Incantations and Magical Formulae Edited with Transliterations, Translations and Full Vocabulary from Tablets of the Kuyunjik Collections Preserved in the British Museum* (London: Luzac & Co., 1896), 12:101 [henceforth BMS], ^uir-kul-la and ^ueli-kul-la; F. Köcher, *Die babylonisch-assyrische Medizin in Texten und Untersuchungen*, vol. 3 [Berlin: Walter de Gruyter, 1963] 311 rev. 31 [henceforth Köcher. BAM], ^uir-kul-la and ^uel-kul-la), on the basis of which some authors believe that it is one plant, mentioned in two variant spellings, as if it were two different plants (AHw. s.v. *elkulla* and CAD s.v. *elkulla*). Others (Campbell Thompson, *Dictionary of Assyrian Botany*, pp. 237–38, B. Böck, personal communication 23/09/05) assume that *elkulla* and *elikulla* are different plants.

¹⁸ According to Goltz, "Apothekerinventar," p. 104, the *maštakal*-plant is not mentioned in the text. This is, however, wrong, since the plant is clearly attested in i 16 (^uINA.ÜŠ).

¹⁹ Goltz, "Apothekerinventar," p. 103.

3.2. INTERNAL CLASSIFICATION SYSTEM

Modern inventories are usually designed following some classification system, that is, an internal system according to which the articles and items are arranged in a specific order. Mesopotamian inventories are not an exception to this rule: for example, metals often are listed beginning with the most valuable and ending with the least valuable. Yet not all ancient inventories have a system that is recognizable for modern scholars. In such cases the researcher may assume the existence of such a system but is not capable of perceiving it.

The quest for such a system in this text is hampered by the uncertainty regarding the correct identification of many of the plants. For that reason it is difficult to look for classifications based on any physical aspect (color, size, height, etc.) of the plants. Nevertheless, the order of the identified plants does not tend to reveal such a classification system. Furthermore, the arrangement of KADP 36 does not correspond to any other known Mesopotamian plant list.²⁰

Other possible classification systems do not help either. The plants are certainly not arranged according to their medicinal purposes, that is, according to the diseases against which they were used or to the ways they were used (e.g., externally or internally, as a powder or in a bandage, etc.). The shape of the cuneiform wedges is no criterion either. Aromatic plants and non-aromatic plants appear next to each other, woods and seeds of plants are not separated.²¹ The fact that there are twelve sections containing plants and twelve categories of medication in section 13 is probably pure coincidence. The plants could be classified according to their importance in medicine, but that, too, is improbable, since some of the plants that appear only late in the text are among the most important ones in Mesopotamian medicine (e.g., cedar, cypress, myrrh, etc.).

Despite the fact that at first sight the text does not seem to be constructed according to some internal system,²² one should not simply conclude that KADP 36 is a master example of a chaotic list. For example, the scribe did know some usual groupings of plants and thereby proves his botanical or literary knowledge. Examples are:

- (1) *Siḫu*, *arganu*, *barīrātu* (i 2–4) are listed in the same order in other texts (e.g., AMT 22,2:11; Köcher, *BAM* 168:7–8; Finkel, “Medical Training,” p. 186, No. 28 obv. i 16–18 [Late Babylonian];²³ KADP 11 i 16–25 [listed in one section]; O. R. Gurney and B. Landsberger, “Practical Vocabulary of Assur,” *Archiv für Orientforschung* 18 (1957–58): 328 ff.:105–07 [listed in adjacent lines]).²⁴ This combination is also attested in a Middle Assyrian text (W. G. Lambert, “A Middle Assyrian Medical Text,” *Iraq* 31 [1969]: 29:22).
- (2) The combination of *šašumtu*, *lišān kalbi*, *šadanu* (i 6–8), and *alamu* (i 12) occurs in AMT 22,2:14–15. It also has a parallel in C. H. W. Johns, *Assyrian Deeds and Documents* (London: Deighton and Bell, 1901–24), No. 1042, where the sequence is *šašumtu*, *šadanu*, *lišān kalbi*, and *alamu* close behind.
- (3) *Maštakal* and *sikillu* (i 16–17) are sometimes mentioned together, for example, CT 38 29:47.²⁵
- (4) *Kamkadu* and *kammantu* (i 19–20) frequently occur together:²⁶ Köcher, *BAM* 124 ii 16, 158 i 25, 173:21, 311:47’.
- (5) *Tarmuš*, *imḫur-līme*, and *imḫur-ešrā* (iii 3–5): also in AMT 42,5:6; Köcher, *BAM* 255:1–3; Finkel, “Medical Training,” p. 186 No. 28 obv. i 1–3; Köcher, *BAM* 311 rev. 31; F. Kuchler, *Beiträge zur Kenntnis der assyrisch-babylonischen Medizin*, Assyriologische Bibliothek 18 (Leipzig: J. C. Hinrichs, 1904), pl. 11 iii 52; Gurney and Landsberger “Practical Vocabulary Assur,” lines 95–97; R. Labat, “Ordonnances médicales ou magiques,” *Revue d’Assyriologie* 54 (1960): 171 (AO 17618:1–3); *ibid.*, 172 (AO 17615:1–3); and *ibid.*, 172 (AO 17624:1–3). This group is frequently mentioned in the very beginning of lists. The groups 5 and 6 twice follow each other (Köcher, *BAM* 255:1–5; KADP 36 iii 3–7).

²⁰ Goltz, “Apothekerinventar,” p. 106 n. 35.

²¹ Goltz, “Apothekerinventar,” p. 106.

²² Goltz, “Apothekerinventar,” p. 107.

²³ These groupings survived in Late Babylonian medicine (e.g., *erēnu*, *šurmēnu*, and *asu* in H. Hunger, *Spätbabylonische Texte aus Uruk* 1, Ausgrabungen der Deutschen Forschungsgemeinschaft in Uruk-Warka 9 [Berlin: Gebrüder Mann, 1976], No. 62:7–8; and *kukru* and *burāšu* in Hunger, *Uruk*, No. 63:1), as may be expected since the same corpus was in use (I. L. Finkel, “On Late Babylonian Medical

Training,” in *Wisdom, Gods and Literature: Studies in Assyriology in Honour of W. G. Lambert*, edited by A. R. George and I. L. Finkel [Winona Lake: Eisenbrauns, 2000], p. 145).

²⁴ Campbell Thompson, *Dictionary of Assyrian Botany*, pp. 363–64; CAD s.v. *siḫu* B; Kinnier Wilson, “Notes on the Assyrian Pharmaceutical Series,” p. 47.

²⁵ CAD s.v. *maštakal*; CAD s.v. *sikillu*.

²⁶ Kinnier Wilson, “Notes on the Assyrian Pharmaceutical Series,” p. 47.

- (6) *Burāšu* and *kukru* (iii 6 and 7) are also often attested together: Hunger, *Uruk*, No. 9 63: 1; Köcher, *BAM* 200: 1, 255:4–5, 262:1–2; Finkel, “Medical Training,” p. 186, No. 28 rev. iii 7’–8’; Labat, “Ordonnances,” p. 174 (AO 17613:1–2). Often *šumlalû* is listed adjacently (AMT 50,3:8; Köcher, *BAM* 261:1–2; Köcher, *BAM* 168:79, 202 rev. iv 17; Küchler, *Beiträge*, pl. 11 iii 63; R. Caplice, “Namburbi Texts in the British Museum III,” *Orientalia* NS 36 (1967): 297:15) or closely (Köcher, *BAM* 200:2; Finkel, “Medical Training,” p. 186 No. 28 rev. iii 11’’) to these two plants. In KADP 36, however, *šumlalû* is situated far from *burāšu* and *kukru* (KADP 36 iv 33). This combination is also attested in a Middle Assyrian text (Lambert, “Middle Assyrian Medical Text,” p. 21).
- (7) The sequence *erēnu*, *šurmēnu*, *duprānu*, and *asu* (iv 26–29) is well attested in medical texts (e.g., Hunger, *Uruk*, No. 62:7–8; Köcher, *BAM* 168:33,54, 482 iii 40).²⁷ This combination is also attested in a Middle Assyrian text (Lambert, “Middle Assyrian Medical Text,” p. 29:20).

Moreover, it should be noted that there is sometimes some kind of system at work. Section 6 has especially (dyeing) minerals; section 9 consists for the most part of non-Mesopotamian aromatic plants;²⁸ section 10 begins with nine drugs that come from the sea; section 11 enumerates carriers; except for mentioning one plant section 13 is focused on categories of medication.

Next to these faint traces of systematization there is one aspect of the text—undoubtedly the most remarkable one—which could point to an internal system being used in the text. The list gives us in some sections the way in which the plants were stored. Only sections 5–7 and the last section do not indicate this, but here it should be mentioned that the last section does not need it, since the preparations were not stored as such.

Interestingly, the fourth section also gives the total of the first four sections. This number is not preserved but can be restored by adding the four sectional totals: 15, 20, 17, and 16, which gives 68. This procedure is not repeated for the subsequent sections. As a matter of fact, this aspect constitutes the only identifiable classification system in the text,²⁹ although it is not known whether the scribe deliberately arranged the plants according to this system. The mentioning of the shelves and containers might just as well be purely informative. Anyhow, if one applies this system to the text, then the text is divided into four parts with the last section acting as a separate fifth part:

- Part 1: 1) Total: 15 (or 16) on top shelf no. 1.
 2) Total: 20 on shelf no. 2.
 3) Total: 17 on shelf no. 3.
 4) Total: 16 on shelf no. 4 // [68] on four shelves.
- Part 2: 5) Total: 15.
 6) Total: 18.
 7) Total: 15.
- Part 3: 8) Total: 11 clay pans used for roasting, or: 11 plants, stored in clay pans.
 9) Total: 19 clay pans used for roasting, or: 19 plants, stored in clay pans.
- Part 4: 10) Total: 15 *qabūtu*-containers, or: 15 plants, stored in *qabūtu*-containers.
 11) Total: 6 *qabūtu*-containers, or: 6 plants, stored in *qabūtu*-containers.
 12) Total: 10 *qabūtu*-containers, or: 10 plants, stored in *qabūtu*-containers.

The first place of storage is denoted by the logogram ^{BS}PA, which may correspond to two Akkadian words: *ḥaṭṭu* “stick, scepter”³⁰ or *ḥuṭāru* “branch, stick; staff,”³¹ although all scholars choose the former possibility.³² It is also

²⁷ CAD s.v. *asu* A; CAD s.v. *duprānu*; CAD s.v. *šurmēnu*.

²⁸ Goltz, “Apothekerinventar,” p. 106.

²⁹ Goltz, “Apothekerinventar,” p. 98. Goltz seems to contradict herself by first indicating that the mention of the way the plants were stored points toward a classification system (p. 98) and that the classification system cannot be recognized with certainty (p. 107).

³⁰ AHw. s.v. *ḥaṭṭu(m)*; CAD s.v. *ḥaṭṭu*.

³¹ AHw. s.v. *ḥuṭāru(m)*; CAD s.v. *ḥuṭāru* A.

³² B. Landsberger apud Köcher, KADP, p. 10; E. K. Ritter, “Magical Expert (= *Āšipu*) and Physician (= *Asû*): Notes on Two Complementary Professions in Babylonian Medicine,” in *Studies in Honor of Benno Landsberger on His Seventy-Fifth Birthday, April 21, 1965*, Assyriological Studies 16 (Chicago: University of Chicago Press, 1965), p. 308; Goltz, “Apothekerinventar,” p. 98; Edzard and Veenhof, “Inventare,” p. 139.

widely accepted³³ that *ḥaṭṭu* should mean here something like “shelf,” despite the general absence otherwise of this meaning for *ḥaṭṭu* in Akkadian.³⁴ The determinative GIŠ indicates that the shelf was made of wood.

The second form of storage is the ^{DUG}*qālītu*. The meaning of this word is well known. Most dictionaries agree that this word denotes a vessel for parching.³⁵ Only in one dictionary is the phrase ^{DUG}*qālītu* (*karpāt qālītu*) translated “clay pots containing parched grain.”³⁶

The last receptacle is the ^{DUG}*qabūtu*. One dictionary has “Becher, Kelch,”³⁷ while another remains vague (“a bowl”).³⁸ Fortunately, elsewhere the dictionary is more precise: “pitcher for pouring water into a basin.”³⁹ The most precise definition, however, is given by Leichty, who considers it to be a flask associated with the washing of hands, also used in rituals and sometimes used to hold fruit (apple) or other items (oil, honey).⁴⁰ According to Leichty, who also gives an illustration of a *qabūtu* on a tablet edge (fig. 1),⁴¹ they are mostly made of metal, but wooden and clay examples are also attested in texts.



Figure 1. Drawing of a *qabūtu*-flask on a tablet edge.

³³ Ritter, “Magical Expert,” p. 308; Goltz, “Apothekerinventar,” p. 98 n. 11; H. Limet, “Croyances, superstitions et débuts de la science en Mésopotamie ancienne,” *Oikumene* 5 (1986): 77–79.

³⁴ B. Landsberger, *Die Serie ana ittišu*, Materialien zum sumerischen Lexikon 1 (Rome: Pontificio Istituto Biblico, 1937), p. 174, was the first to propose a meaning “shelf” for *ḥaṭṭu*. He based his proposal on the expression *ša ina ḥaṭṭu šunūlu*, lit., “auf die Stöcke auslegen,” “to lay out on sticks”; he considered *ḥaṭṭu* to be some kind of wooden frame or rack.

³⁵ CAD s.v. *qālītu* A.

³⁶ AHw. s.v. *qālītu*.

³⁷ AHw. s.v. *qabūtu*.

³⁸ CAD s.v. *qabūtu* A.

³⁹ CAD s.v. *mû* A.

⁴⁰ E. Leichty, “*Qabūtu*, *šāḥu* and *mê qāti*,” in *Assyriologica et Semitica: Festschrift für Joachim Oelsner anlässlich seines 65. Geburtstages am 18. Februar 1997*, edited by J. Marzahn and H. Neumann, *Alter Orient und Altes Testament* 252 (Münster: Ugarit-Verlag 2000), p. 243.

⁴¹ The vessel illustrated in fig. 1 indicates that only fluids could be stored in it. Plants would be hard to store in such a long-necked container.

3.3. THE ARCHITECTURAL SETTING OF KADP 36

The architectural setting of this text is unfortunately not mentioned and consequently not known, although it is quite obvious that there will have been some construction containing at least four shelves (the first of which is the upper one). The name "pharmacy" is conventionally mentioned in this regard, but the only justification for using this name is the contents of the text, that is, medicinal materials, especially plants. One may, however, assume that only one room is involved.

3.4. INDICATION OF TIME OR REASON

The text nowhere gives an indication of the time when or the reason why the inventory was made up. Mostly inventories are produced when property changes ownership, when a person dies, or when a king adds new territory to his realm. That the compiler of this text apparently did not want to be associated with it is implied by the fact that he did not add a colophon.⁴² Only the findspot of the text links it with a famous family of exorcists, but the text itself does not mention any person (physician, priest, scholar, etc.), institution, or time period. A colophon would automatically have provided us with more information on the background of the text. It is thus impossible to know whether the plants belonged to one or more persons, or even to an institution.

3.5. INTERNAL DISCREPANCIES

At the end of each section a total is given, which oddly is usually not the same as the actual number of plants listed in the particular section. In at least seven sections the total of items does not correspond to the total listed, and the listed total is usually lower than the actual total of items.⁴³ Only in section 7 is the total given higher than the actual numbers of items.

<i>Section</i>	<i>Actual Total of Items</i>	<i>Total Given in Text</i>
1	16	15/16(?)
2	21	20
3	17/19+	17
4	21	16
5	27	15
6	22	18
7	14	15
8	12	11
9	19	19
10	29	15
11	10	6
12	10	10

In the first section, sixteen plants are listed although the last line reads "Total: 15 on shelf one, the upper shelf." It must be noted, however, that the number could also be "16," since the copy indicates that the sign is slightly damaged. The second section lists nineteen plants and twice the seed of one of these plants (tamarisk and laurel). This does not agree with the total of twenty, which is indicated at the end of this section. This section also makes clear that the totals did not necessarily refer only to plants, but also to other materials.

⁴² Goltz, "Apothekerinventar," p. 98.

⁴³ Goltz, "Apothekerinventar," p. 98 n. 10.

Since part of the third section is lost and it is impossible to determine how many lines are missing,⁴⁴ one cannot determine whether the total of seventeen items is correct. The section mentions at least sixteen plants and the fruit of one of these plants twice. Yet, in line 39 another plant name certainly has to be restored. This brings the minimum to seventeen plants. Section 8 has twelve items and a given total of eleven, again a discrepancy. A plausible solution for these discrepancies is hard to find. Several possibilities may be considered, but none of them holds for all sections.

- (1) Some plants were not stored, only mentioned.
- (2) Some sections have synonyms, for example, section 8.
- (3) The given totals do not refer to the number of plants listed in each section. They might refer to the weight of the plants, but if this were true, it would be more logical to mention the weight of each separate item, not of a group of items. On the other hand, the totals could refer to the bowls (*qālītu* and *qabūtu*) in which the plants were kept. In that case the translation of the last line of each section should be “x *qālītu/qabūtu*-receptacles.”

- (4) The discrepancies are a reflection of some kind of internal system used by the scribe, unknown to the modern scholar. One of the possible systems implies that the totals mentioned refer to groups of plants (e.g., family, character, color, etc.), but in that case the various groups are rather small and sometimes can consist of only one plant. Nevertheless, this explanation might be useful to account for some discrepancies.

Section 2: If *šakirū* and *šakir*⁴⁵*šamaš* are considered one group then the discrepancy disappears. Support for this is offered by the fact that the latter plant is extremely rare and occurs only in plant lists in the immediate vicinity of the more common *šakirū*.

Section 2: The alum (im.saḥar.na₄.kur.ra, im.saḥar.babbar.kur.ra, and im.saḥar.gi₆.kur.ra) and the salts (mun.kū.pad, mun.eme.sal-*lim* and mun *a-ma-nim*) may each be counted as units. This yields an actual total of 18, which corresponds to the total given.

Section 11: There are six lines of items. This could correspond to the total of six as given.

This system does not explain every discrepancy. For example, in section 7 one would expect that the *kamūnu* and the *kamūnu ša šadī* would be counted as one unit, giving an actual total of thirteen, not fourteen.

- (5) Scribal inaccuracies may be the cause of the internal discrepancies. In that case, however, there are suspiciously many mistakes. Nevertheless, the discrepancy in section 7 may well be the result of a scribal error, since it is the only occasion where the total mentioned is more than the actual number of items.

At least some of the systems mentioned here offer possible explanations for some discrepancies, although not all discrepancies can be solved by any one system. Sections 5 and 10, the sections with the largest discrepancies, remain unresolved. Perhaps their contents were also divided into groups (e.g., the sea-drugs in section 10), but the distinctions between and within these groups remain unknown.

4. THE LAST SECTION

Section 13 of the text lists not medicinal materials, but various categories of drugs: potions, fumigations, daubings, balms, suppositories, lotions, powders, ..., bandages for the kidney, bandages for the forehead, bandages for the nails. These categories, containing different preparations for which the plants listed could be used, is not exhaustive:⁴⁵ nothing is said about pills, the eating of medicines, tampons, or drops.

⁴⁴ Limet, “Croyances,” p. 78, believes that there is a gap of six lines, while the copy only indicates three missing lines (i 40–42). If Limet is correct, then the total of seventeen is indeed lower than the number

of at least twenty-two plants and seeds listed. The number of plants given here is based on the copy.

⁴⁵ Goltz, “Apothekerinventar,” p. 110.

It should also be noted that the preparations described in this list were not stored as such.⁴⁶ Two reasons can be found for this. First, the carriers (enumerated in section 11) cannot be preserved for long. This is illustrated clearly by the bandages. These actually are pulposus cataplasms, which as a result of dehydration lose their pharmaceutical effect (e.g., softening of the skin or the muscles) after a certain time of storage. Also butter (for ointments) or beer (for potions) did not have a long preservation time. Second, Mesopotamian physicians prepared each medication for immediate and unique use, so it was not necessary to store the ingredients for a long time.

Finally, it is remarkable that one plant, *qulqullānu*, is included in this section. In all probability there is a scribal mistake involved here.

5. KADP 36 IN A WIDER CONTEXT

5.1. GENERAL ASPECTS OF KADP 36

Let us sum up the main aspects of the so-called Neo-Assyrian Pharmaceutical Inventory. First of all, it is generally incomplete. Not all medicinal plants, minerals, etc. are listed, not even all major ones. Second, its internal classifying system is problematic, unless the scribe arranged his medicinal items according to the manner of storage (e.g., shelves, clay pans for parching, or some kind of flasks). Nevertheless, the scribe was not ignorant of botanical knowledge and he formulated some parts of his text systematically. Third, the architectural setting of this text is unfortunately not mentioned and there is also no indication of the time when the inventory was composed. Finally, the text contains some internal discrepancies.

5.2. KADP 36 AND MESOPOTAMIAN PLANT LISTS

Mesopotamian literature contains various plant lists, which can be divided into four categories.⁴⁷

- (1) Lists mentioning only the plant names (e.g., CT 14, pls. 21–22 and *passim*).
- (2) Two-columned lists establishing relationships between at least two plants, in a defined pattern (plant x: looks like plant y; e.g., CT 14, pl. 22 vii 43).
- (3) Two-columned lists with the plant names and the corresponding disease or organ against which or for which the plant is used (e.g., CT 14, pl. 29 K.4566+; *ibid.*, pl. 36 81–2–4, 267).
- (4) Three-columned lists. The first column gives the name of the plant, the second indicates the disease or the organ against which or for which the plant is used, and the third column provides information on preparing the plant (Köcher, *BAM* 1). The texts belonging to this category mostly serve therapeutical purposes and therefore are not pure plant lists.

At first sight, KADP 36 belongs to the first category. There is, however, one aspect about our text that distinguishes it from the other plant lists: the possible internal classification system, indicating how the plants are stored: shelves, *qālītu*-vessels, and *qabūtu*-cups. If one wants to consider this text a “plant list,” it certainly constitutes a fifth category.

In addition, KADP 36 is also distinct from some plant lists in function. While some plant lists (the ones belonging to types 1 and 2 above) are purely lexical, our text is clearly not.

⁴⁶ Goltz, “Apothekerinventar,” pp. 110–14.

⁴⁷ B. Meissner, *Babylonien und Assyrien* 2. Kulturgeschichtliche Bibliothek. Reihe 1: Ethnologische Bibliothek 4 (Heidelberg: C. Winter, 1925), p. 295; Goltz, “Apothekerinventar,” pp. 96–97.

5.3. KADP 36 AND THE MESOPOTAMIAN AND DELIAN INVENTORIES

Excavations throughout Mesopotamia have yielded various inventories, and it is useful to compare these texts with the text discussed here. Our text has similarities with but also differs from Mesopotamian inventories. This should not surprise us, since Mesopotamian inventories themselves are not uniform. The most difficult aspect to study is the incompleteness of inventories found in Mesopotamia. A spatial inventory should be listing all items that are present in one space. Yet it is hard to determine whether an ancient text really lists all objects in a particular room or belonging to a particular person. The Neo-Assyrian inventory of the palace and the temple of Muṣaṣir only contains precious goods, but in all probability less valuable goods, not listed in the text, will also have been present in these buildings. The same probably applies to our text: some frequently used medicinal plants are not listed, but that does not necessarily mean they were not present in the room.

Internal classification systems are found in some Mesopotamian inventories, although they are not always clear to us. An example is J. A. Knudtzon, *Die El-Amarna-Tafeln*, Vorderasiatische Bibliothek 2 (Leipzig: J. C. Hinrichs, 1915), No. 14, in which metal objects are arranged according to the material of which they are made. First the gold objects are listed, followed by the silver ones, bronze, etc. The Middle Assyrian inventory of Urad-Šerūa (J. N. Postgate, *The Archive of Urad-Šerūa and His Family: A Middle Assyrian Household in Government Service* [Rome: Herder, 1988]) seems to use the same system as KADP 36, that is, the way the items were stored: chests are the basic storage unit. Not all Mesopotamian inventories have an architectural setting and because of that it cannot be determined whether they are limited to one specific architectural space (e.g., the inventories provided in letters). Others clearly mention where the goods are stored: the Middle Assyrian inventory of Urad-Šerūa (lower store room of the *šahūru*-building) and the Neo-Assyrian inventory of the Ḫaldi-temple in Muṣaṣir (F. Thureau-Dangin, *Une relation de la huitième campagne de Sargon (714 av. J.-C.)*, Textes Cunéiformes du Louvre 3 [Paris: P. Geuthner, 1912], lines 351–67).

In that regard the Mesopotamian inventories are no exception to other inventories from the ancient Near East or the classical world. Some Egyptian inventories have an architectural setting. Also various Delian inventories (e.g., IG XI.2 287B) and the biblical inventory of the temple in Jerusalem (1 Kings 7:15–51) are confined to one architectural space.

Along with the similarities between KADP 36 and the Mesopotamian inventories there are also some significant differences, suggesting that this text is not a real inventory. First of all, there is no connection between the text and a person or a god. In other words, the owner of the items listed in the inventory or the composer of the text is not known. KADP 36 is an exception in this regard in the corpus of Mesopotamian inventories since all other inventories mention a person or god (e.g., Köcher, *BAM* 366, a Neo-Assyrian inventory, mentioning 315 stones and composed by Kišir-Aššūr or Kišir-Nabû).⁴⁸

Second, most inventories (including Köcher, *BAM* 366) mention the quantities of the objects, that is, four chariots, two chests, etc., while KADP 36 only provides the totals per section. Here, too, the Mesopotamian inventories fit into the broader ancient Near Eastern context. It should be noted that Köcher, *BAM* 366, has a fine way of indicating the quantities: the first section (unfortunately not fully preserved) starts with the highest units, the second section lists the stones of which there are nine pieces stored, the third section always has eight pieces of a particular stone, etc. The last section lists those stones of which there is only one piece. At least eighty-five kinds of stones are listed.

A third difference between KADP 36 and the Mesopotamian inventories is in the aspect of time. Most Mesopotamian inventories indicate the date when the inventory is drawn up. Exceptions are our text and the Urad-šerūa inventory.

It appears that there are several types of Mesopotamian inventories. A classification of inventories could be made using the above-mentioned criteria. If one really wants to consider KADP 36 an inventory it would have to be listed under “Mesopotamian inventories,” subcategory “architecturally limited, with internal system, not complete, no indication of time or reason, no connection with person or god.”

⁴⁸ The name of the author of this text cannot be determined with certainty, because the latter part of his name is destroyed (ṁKi-šir- [...], line 22'). See O. Pedersén, *Archives and Libraries in the City of Assur: A Survey of the Material from the German Excavations*,

part 2, Acta Universitatis Upsaliensis, Studia Semitica Upsaliensia 8 (Uppsala: Almqvist & Wiksell, 1986), p. 46.

It is interesting to see that some younger Delian inventories (e.g., ID 3 1417, IG 11.2 287B,⁴⁹ places within the architectural unit, especially the prodromos) to some extent make subdivisions within one architectural unit. Others, however, go further and mention the places where the items were stored. Two such places are attested: rows and chests. The rows (στίχος and ῥυμός; ID 2 442B, ID 3 1450, IG 11.2 203B24) are probably some kind of shelves, an assumption which is favored by the Greek denotations, the second of which may mean "shelf." The chests (κίβωτός; ID 2 442B, 3 1417, IG 11.2 287B) are simple boxes or coffers.

5.4. THE FUNCTION AND CHARACTER OF KADP 36

Determining the real function and character of this text is not easy. It has become clear that KADP 36 is different from both the Mesopotamian plant lists *inter alia* because of its inclusion of the manner of storage of the plants. Therefore one could argue that it is a true inventory, but in that case it is clear that KADP 36 would make up a unique category within this genre. Naturally, this depends on what definition of "inventory" one prefers. If the general definition of inventory ("a catalogue") is preferred, then our text is certainly an inventory, but in that case many Mesopotamian lists could be labeled inventories. More rigid definitions of inventory (e.g., "list of objects present within an architectural space, made up at a certain moment, indicated in the list") exclude the text from the group of Mesopotamian inventories.

A further argument against the inventory character of the text is the inclusion of the last section, mentioning medical preparations, some of which could not even be stored (e.g., bandages). In sum, I am inclined to believe it is not an inventory.

Scholars have proposed several possibilities concerning the function and character of this text.

- (1) The tablet may be composed according to an already existing order of medications and served as a stocking tool.⁵⁰ It is thus a real inventory of a real pharmacy.⁵¹ This explanation, however, is no longer accepted because of the incompleteness of the text and the non-inventorial character of the text.
- (2) Possibly our text was a private inventory of the collection of one physician,⁵² a possibility supported by the fact that the text was discovered in a private house owned by a family of exorcists and in which many other medicinal and literary texts were found.⁵³ Again, the non-inventorial character of the text contradicts this. Further, information about the owner would be expected.
- (3) It may be a memo for a collection of medications that has yet to be purchased.⁵⁴ This would explain the incompleteness of the text and the absence of some frequently used medicinal carriers such as beer, since these materials were available at all times in the house. If such were the case, however, the text should offer more information (e.g., the quantities to be purchased) or a heading (e.g., "to be purchased").
- (4) There were larger storehouses where medicinal plants were distributed to physicians who needed them. The existence of such institutions can be shown through some receipts for plants and medicinal ingredients received by physicians (e.g., A. Clay, *Documents from the Temple Archives of Nippur Dated in the Reigns of Cassite Rulers*, Publications of the Babylonian Section 2/2 [Philadelphia: University Museum, 1912], No. 107). The high number of plants listed in KADP 36 suggests that the text was an inventory of such a larger storage place.⁵⁵ However, the incompleteness of the text does not support this theory (one would expect that many more plants were stored in such a storehouse).
- (5) It is a text with a didactic character, some kind of guide for the arrangement of medications. Possibly this guide is based on a real example.⁵⁶ In order to study this possibility a comparison with other late Mesopotamian medical school-texts is appropriate. The greater part of the known medical school-texts contains recipes,

⁴⁹ F. Dürbach, *Inscriptions de Délos: Comptes des Hiéropes* (Nos 372–498). *Lois ou règlements, contrats d'entreprises et devis* (Nos 499–509) (Paris: Champion, 1929); and F. Dürbach, *Inscriptions de Délos*, *Inscriptiones Graecae* 11.2 (Berlin: Dietrich Reimer, 1912).

⁵⁰ Goltz, "Apothekerinventar," p. 98.

⁵¹ This is considered improbable by Edzard and Veenhof, "Inventare," p. 139.

⁵² This is considered improbable by W. Farber, "Drogerien in Babylonien und Assyrien," *Iraq* 39 (1977): 224.

⁵³ Pedersén, *Archives and Libraries*, pp. 41–76.

⁵⁴ Goltz, "Apothekerinventar," p. 98.

⁵⁵ Farber, "Drogerien," p. 224.

⁵⁶ B. Landsberger apud KADP, p. 10; see Edzard and Veenhof, "Inventare," p. 139, who prefer this possibility to the first possibility.

but there are also twenty-five lists, plant lists, stone lists, or lists containing various kinds of ingredients.⁵⁷ Some of these lists (Köcher, *BAM* 355; Figulla, *Business Documents*, Nos. 146, 148, 151, 152) mention the quantities of ingredients and consequently are designed in connection with specific recipes. Therefore they should be situated somewhere between lists and recipes. Other texts (Köcher, *BAM* 109;⁵⁸ Finkel, "Medical Training," p. 186 No. 28; Labat, "Ordonnances," p. 54) reveal the disease against which the ingredients should be used. KADP 36 does not give these data, as is also the case with Köcher, *BAM* 200, 255, 261, 262, and Figulla, *Business Documents*, UET 4, No. 149. Another difference between KADP 36 and the other lists is the size: KADP 36 is a large tablet, while the other lists are rather small. Yet Finkel, "Medical Training," p. 186 No. 28 (listing 78 plants), is also larger than a normal medical school-tablet. A remarkable similarity between both texts is that Finkel, "Medical Training," p. 186 No. 28, indicates that the plants are used for salves, while KADP 36, which lists many more plants, indicates that they are used for potions, fumigations, daubings, balms, ointments, lavages, powders, and various bandages.

The conspicuous grouping of some plants has already been mentioned. That does not, however, imply that the order in which the plants were listed was approximately the same in the medical lists, as illustrated by the following table, comparing some examples of the three biggest lists. These lists do not follow the order established in the canonical Uruanna-series either.

	KADP 36	Köcher, BAM 255	Finkel, "Medical Training," p. 186 No. 28
<i>aktam</i>	i 13	—	i 15
<i>atā ʾišu</i>	i 14	—	i 6
<i>karan šēlibi</i>	i 15	11	i 25
<i>maštakal</i>	i 16	—	—
<i>sikillu</i>	i 17	—	i 13
<i>elkullu</i>	ii 9	19	i 9
<i>ašqulālu</i>	iii 12	8	i 19
<i>amīlānu</i>	iii 12	18	—
<i>elikulla</i>	iii 13	20	i 10
<i>elikulla sāmu</i>	iii 14	—	i 11
<i>ēdu</i>	iii 16	10	i 12
<i>zēr ēdi</i>	iii 16	10	i 13

The only similarity is between KADP 36 iii 13–16 and Finkel, "Medical Training," p. 186 No. 28 i 10–13. It is also surprising to see that in KADP 36 the distance between *elkulla* (ii 9) and *elikulla* (iii 13) is so great.

According to Finkel⁵⁹ the medical school-training started with the acquisition of literacy. Thereafter the apprentice doctor would have to learn the corpus of medical recipes and the way to use them, both by writing by dictation one or two recipes on small tablets and by listening to the further explanations by the teachers. The use of small tablets would unavoidably lead to a huge number of such tablets lying about in the building, a situation which would encourage the students to write these recipes down on larger tablets and simultaneously to make larger collections of related recipes. Perhaps a parallel situation existed for the acquisition of botanical knowledge, which was most

⁵⁷ Köcher, *BAM* 109, 200, 255, 261, 262, 355; Finkel, "Medical Training," pp. 183–87 Nos. 25–30; Labat, "Ordonnances," p. 54 171 (AO 17618 and 17622), 172 (AO 17615), 174 (AO 17613 and 17617); H. Figulla, *Business Documents of the New-Babylonian Period*, Ur Excavation Texts 4 (London: Harrison, 1949), Nos. 146–53.

⁵⁸ The last line (17) of the tablet is destroyed, but the penultimate line (16) reads 23 Ú.ĜI.A. The expected text tells what the medicines are used for.

⁵⁹ Finkel, "Medical Training," pp. 141–43.

likely a part of medical training, coming before the learning of recipes. KADP 36 would then be written by a student who was somewhere in the process of his botanical education.⁶⁰

Without being absolutely certain concerning this text, I tend to believe the last theory: KADP 36 is an educational text, not based on any real example. The main indications for such an opinion are the incompleteness of the list, the fact that some plants are mentioned twice, the scribal errors, the similarities it has with medical school-lists, and the formulaic grouping of plants. The latter is the result of literary concerns rather than pharmacological ones. The order in which the plants are listed might reflect nothing more than the order in which the scribe learned about the plants. Furthermore, the scribe may have had some botanical knowledge, but he certainly did not apply all such knowledge to his text. This leads one to think the scribe was still under instruction and that KADP 36 is a school text. If that is the case one is dealing here with a text from the Faculty of Medicine of the University of Assur⁶¹ and not with a real inventory.

⁶⁰ This could explain why the method for storing the plants is explicitly mentioned. It is the duty of a botanical expert to know how the various plants were to be stored in an ideal way. Once the student was more involved with recipes and how to use the plants, the way of storing the plants would no longer be that important.

⁶¹ Consequently, I propose that we stop using the denotation "Pharmaceutical Inventory" and simply call this text by its publication number, KADP 36.