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IDENTIFICATION OF MEDICAL PLANTS IN HITTITE
CUNEIFORM SCRIPTS

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Introduction

The Hittites are a society who made their presence felt in Anatolia in the beginning of the 2nd millennium B.C. and sustained their political dominance for about a half century from c. 17 B.C. The center of the state consisted of the bend of Halys River¹ and its environs but it is known that the country expanded from West Anatolia to the shores of Lebanon in its most powerful times. The expanding of the land area of the Hittite State increased its cosmopolitan structure. The Hittites who internalised the Hatti culture were also influenced by Hurrian, Babylonian and Levantine cultures. It is possible to feel this influence in the Hittite medical practices although they made a small amount in Hittite cuneiform scripts.² Hittite medical texts are among the most well-known sources in their field in Anatolia.³ The knowledge in these texts indicate the origins of the traditional/folk medicine in Anatolia and have importance in understanding many practices of the present day.

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¹ Hittite: *Maraşantiya*, Turkish: Kızılırmak

² H. G. Güterbock, "Hittite Medicine", *Bulletin of the History of Medicine*, no. 36, 1962, pp. 109-113.

³ C. Burde, *Hethitische Medizinische Texte*, StBoT 19, 1974. V. Haas, *Materia Magica et Medica Hethitica*, Ein Beitrag zur Heilkunde im Alten Orient, de Gruyter, Berlin, New York, 2003.

Hitite medicine was largely based on sorcery and medicinal plants. Although the practical aspects of medicine is emphasized more in similar societies, the Hitittes seem often fatalist about diseases. According to them, diseases originated from divine punishments more than natural factors.⁴ Because of this reason, whereas the texts which can be related to medicine are few, there are many texts about sorcery and rituals among Hitite cuneiform scripts.⁵ Furthermore, half of the texts which can be related to medicine are comments based on diagnosis in diseases.⁶ The texts which are in our area of study and which have the quality of prescriptions make the other half of the mentioned medical texts.

Anatolia, where many civilizations lived, make a rich environment of study for ethnobotanical studies because of its rich floristic structure. Anatolia is a geographical area where human beings have close relationships with plants and have made use of them in fields such as food, medicine, fuel, shelter and paint foremost. First ethnobotanical researches were intensively made on plants used in healing.⁷ First studies made on medicinal plants in Anatolia were under the headings of folk medicine and folk medicines.⁸ Physic was recognized as a profession during the Hitite era. The Hitite Empire is the first known empire founded in Anatolia.⁹ The sources of our knowledge in medicinal plants in Anatolia go back to very old times. For example, it is known that some herbal drugs like poppy head and saffron were obtained in Anatolia and sold to other countries. Some plants and their uses in the works of Galenos, who started his profession with the knowledge he learned from Hippocrates (460-377 B.C.) who lived in the island of İstanköy (Kos), and Dioscorides who lived in Anatolia in c. 1 A.D. are also seen even today.¹⁰

⁴ A. Goetze, "Hitite Prayers", *ANET*, Princeton University Press, Princeton, New Jersey, 1955, pp. 395, 400.

⁵ Güterbock, "Hitite Medicine", pp. 109-113; A., Ünal, "Hitit Tıbbının Ana Hatları (Main lines of Hitite Medicine)", *Belleten*, no. 44/175, 1980, p. 98.

⁶ P. Dardano, *Die hethitischen Tontafelkataloge aus Hattusa* (CTH 276-282), *StBoT* 47, 2006, pp. 224-226.

⁷ R. Polat, U. Çakılciöğlü, F. Ertuğ, F. Saul, "An Evaluation of Ethnobotanical Studies in Eastern Anatolia", *Biological Diversity and Conservation*, no. 5, 2012, pp. 23-40.

⁸ Ş. Akun, "Antalya Köylerinde Halk Doktorluğu, Baytarlığı, Eczacılığı (Folk Medicine, Veterinary and Pharmacy in Antalya Villages)", *Türk Akdeniz*, no. 2, 1938, pp. 28-29; C. Öztelli, "Halk Tedavileri (Public Treatment)", *19 Mayıs-Samsun Halkevi Dergisi*, no. 7, 1944, pp. 66: 39; N. R. Balcıoğlu, "Ardahan Havalisinde Halk Hekimliğinin Kullandığı İlaçlar (Medicines Used by the People of Ardahan For Folk Medicine)", *Türk Folklor Araştırmaları*, no. 2/26, 1951, p. 414; G. Aydınöğlü, "Posof'ta Hastalıkları Tedavi Usulleri (Treatment Procedures for Diseases in Posof)", *Türk Folklor Araştırmaları*, no. 231, 1968, pp. 5084-5085.

⁹ B. M. Yalçın, M. Ünal, H. Pirdal, Y. Selçuk, "The History Of Medicine in Anatolia, 1st Part", *History of Medicine* 20/1, 2016, pp. 33-44.

¹⁰ A. Ataç, E. Kahya, S. Şar, "Dioscorides'in Materia Medica'sında Tedavide Kullanılan Bazı Tıbbi Bitkilerin Geçmişte ve Günümüzde Kullanımları Açısından Değerlendirilmesi (Evaluation Some

Anatolia has a rich variety of plants because of its different types of climates, geographical and geological features. The number of species and taxons under these species have become 12.000. This number increases every day with the definition of new species. Turkey is also very rich in terms of endemic plants and 34 % of the species it has are endemic.¹¹ Anatolia's being hosted many cultures throughout the history caused it to have a rich ethnobotanical cultural heritage in terms of plant use. A growing number of studies are made in Turkey and world in order to determine this heritage and transfer it to future generations.¹²

Material and Methods

Translations by Burde (1974) and Haas (2003) were used in the compilation of the names of the plants in Hittite cuneiform scripts. Basic reference comments about the translations of the plant names were also included. It is remarkable that a common view has been formed about almost none of the plant names. From this point of view, exploring the topic by different disciplines will clear the way for new evaluations.

Usually the name of the disease is written in the introductions of the Hittite texts which have the quality of prescriptions. However, because of the broken parts and insufficient means for translation, it is difficult to understand the illness. Evaluations were tried to be made about the determination of the diseases considering the fields where the medicinal plants are used in traditional medicine even today.

The names of the plants used in making medicines are given respectively in the texts. However, since the plant species which are the present day equivalents of

Medicinal Plants Used in Medicine in *Materia Medica* of Dioscorides in Terms of Past and Present Uses)", *V. Türk Tarihi Kongresi Bildirileri*, 1998, pp. 489-499.

¹¹ N. Özhatay, Ş. Kültür, S. Aslan, "Check-list of Additional Taxa to The Supplement Flora of Turkey IV", *Türk Journal Botany*, no. 33, 2009, pp. 191-226; A. D. Atık, M. Öztekin, F. Erkoç, "Biyçeşitlilik ve Türkiye'deki Endemik Bitkilere Örnekler (Examples of biodiversity and endemic plants in Turkey)", *Gazi Eğitim Fakültesi Dergisi*, no. 30, 2010, pp. 219-240.

¹² Polat *et al.* "An Evaluation of Ethnobotanical Studies", pp. 23-40. R. Polat, U. Çakılcıoğlu, M. D. Uluşan, M. Y. Paksoy, "Survey of Wild Food Plants for Human Consumption in Elazığ (Turkey)", *Indian Journal of Traditional Knowledge*, 14/1, 2015, pp. 69-75. İ. Kaval, L. Behçet, U. Çakılcıoğlu, "Survey of Wild Food Plants for Human Consumption in Geçitli (Hakkâri-Turkey)", *Indian Journal of Traditional Knowledge*, no. 14/2, 2015, pp. 183-190. G. Akgül, N. Yılmaz, A. Celep, F. Celep, U. Çakılcıoğlu, "Ethnobotanical Purposes of Plants Sold by Herbalists and Folk Bazaars in The Center of Cappadocia (Nevşehir, Turkey)", *Indian Journal of Traditional Knowledge*, no. 15, 2016, pp. 103-108. T. Günbatan, İ. Gürbüz, A. M. G. Özkan, "The Current Status of Ethnopharmacobotanical Knowledge in Çamlıdere (Ankara, Turkey)", *Turkish Journal of Botany*, no. 40, 2016, pp. 241-249. A. H. Kandal, H. A. Yacoub, M. P. Gerkema, J. A. A. Swart, "Vanishing Knowledge of Plant Species in the Wadi Allaqi Desert Area of Egypt", *Human Ecology*, no. 44/4, 2016, pp. 493-504. M.Y. Paksoy, S. Selvi, A. Savran, "Ethnopharmacological Survey of Medicinal Plants in Ulukışla (Niğde-Turkey)", *Journal of Herbal Medicine*, no. 6, 2016, pp. 42-48.

these names are not understood, they are compared to the plants used traditionally in Anatolia. Since the names of many plants are mentioned only once in the available texts, comparative ethnology is insufficient. These are the related texts;

KUB XLIV 61 Obv. I

It is a text about the treatment of the *inan* and *šatar* diseases.¹³ No certain detections have been made about the sort of the disease. The disease is alleged to be inappetency¹⁴ or stomach ache¹⁵ because of the expression \acute{U} -UL *e-ez-za-zi* "he cannot eat" seen in the second line of the text. Two different prescriptions are given about the treatment of the disease in the text. Whereas there are the plants in the first prescription in the first nine lines, the names of the plants in the second prescription are written in the second prescription. The names of the plants mentioned in the prescription for the treatment of the text about the treatment of disease;¹⁶

- 1 *a*]n-dur-za i-na-na-aš ša-a-d[a-
 2]x-ti nu NINDA-an \acute{U} -UL *e-ez-za-zi* x[
 3]ke-e \acute{U} ^{HIA} da-a-i NUMUN ZAG.AH.LI^{SAR} ku[-iš-ki
 4]x NULUH.ĤA^{SAR} AN.TAĤ.ŠUM^{SAR}-ia me-ek-ki[
 5 [^{1/2} \acute{U} har-k]i²-ia me-na-aḥ-ḥa-an-da da-a-i na-at-ši I-NA UD VII^{KA}[^M
 6 [pé-eš-k]i-i-iz-zi UD^{KAM}-ma-kán iš-tar-na i-ia-at-ta-r in[a-
 7 [pé-eš-k]i-i-iz-zi ku-it-ma-an-ma-aš-ši ke-e \acute{U} ^{HIA} I-NA UD VII^{KA}[^M
 8 pé-eš-ki-iz-zi ^{1/2} \acute{U} har-ki-ma me-na-aḥ-ḥa-an-da-pát da-a-i[
 9 nam-ma ia-ia-a-i kat-ta-ia-an-za-kán tar-na-in[a-aš SIG₅-r]

¹³ "sicknes, illness, disease, ailment" (of the body part) J. Puhvel, *Hittite Etymological Dictionary*, Vol. 2, Mouton Publishers, Berlin, New York, 1984, s. 365-366. "sicknes" S. Alp, "Zu den Körperteilnamen im Hethitischen", *Anadolu (Anatolia)*, 2, p. 39.

¹⁴ H. C., Melchert, "Pudenta Hethitica", *JCS*, no. 35, 1983, pp. 137-138. A., Ünal, "Hitiit Tibbimim Ana Hatları", p. 98.

¹⁵ Haas, *Materia Magica et Medica Hethitica*, p. 116.

¹⁶ Burde, *Hethitische Medizinische Texte*, p. 18.

KUB XLIV 61 Obv. I (1) i]nside (sicknes) from *inan* (and) *šatar* (2)] and he cannot eat Food [(3) then] he takes these herbs: some seeds of cress (4)] poison parsley and ample AN.TAĤ.ŠUM^{SAR} (5) [^{1/2} white her] b he takes it and it him for 7 day[s (6) respectively he gives. But the day is passing by an[d it him (7) respectively he gives. As long as he gave him these herbs for 7 days. (8) repeatedly gives, he places each time ^{1/2} white herb even more (9) then [...] he and lets him down and [it is healed] (10) But if he does not heal him, so him wi[ne (11) give he, garlic root, leek root, on[ion (12) šullittini root [(13) he takes and he lets him in and it s[o (14) ^{1/2} white herb he takes and it with wine t[o drinks he gives] (15) and it him for 7 days measured [(16) then [...] he und lets him [down and it is healed]

- 10 *ma-a-an-ma-a ša-pí-iz* Ú-UL SIG₅-ri nu-uš-ši GEŠ[TIN[?]
 11 *pa-a-i* SUM^{SAR} GA-PA-NU GA.RAŠ^{SAR} GA-PA-NU šu[-
 12 *šu-ul-li-it-ti-in-ni*^{SAR} GA-PA-NU [
 13 *da-a-i na-at an-da tar-na-i na-at ki*[-
 14 $\frac{1}{2}$ *har-ki da-a-i na-at* IŠ-TU GEŠTIN A[-
 15 *na-at-ši I-NA* UD VII^{KAM} *ta-an-kar-ši* [
 16 *nu ia-ia-a-i kat-ta-ia-an-za-k*[án tar-na-i

AN.TAH.ŠUM^{SAR}; Its species is unknown. It was suggested to be meadow saffron,¹⁷ saffron¹⁸ or lily.¹⁹ Based on the postposition SAR, it is thought to be an alliaceous plant. Probably it grew in spring.²⁰ The patient is asked to take a little NUMUN ZAG.AH.LI^{SAR}, a plant whose name cannot be read and NULUḪ. ḪA^{SAR} and lots of a plant named AN.TAH.ŠUM^{SAR} and *harki* for the treatment of *inan* ve *šatar* diseases, beginning from line 4. KUB VII 1 Obv. 1 21 is also regarded as a horticultural plant.

Saffron and meadow saffron (*Crocus* sp.); their parts above the ground and their bulbs are eaten rawly as food. Raw corms are eaten. Corms are added in boza (A Turkish drink which is made with wheat²¹). Lily is used for healing wounds and it is also used in water retention and toothache.²² Famous Turkish traveler Evliya Çelebi wrote about the beauty and the curative features of many kinds of herbs and colourful flowers he saw while he was travelling through the summer pastures of Bingöl in the 17th century. Lilies on the mountains of Bingöl are among these

¹⁷ H. G. Güterbock, "Religion und Kultus des Hethiter", *Neuere Hethiterforschung*, no. 62, 1964, p. 62. J. Tischler, *Hethitisches Handwörterbuch mit dem Wortschatz der Nachbarsprachen*, Institut für Sprachen und Literaturen der Universität Innsbruck, Innsbruck, 2001, p. 213. F. Ertuğ, "Baharın Müjdecisi: Çiğdem (Crocus) ya da AN.TAH.ŠUM^{SAR} Hititler Devri Anadolu Florasına Küçük Bir Katkı (Harbinger of Spring: Crocus, Çiğdem or AN.TAH.ŠUM^{SAR} a Small Contribution to the Anatolian Flora of the Hittite Period)", *Türkiye Bilimler Akademisi Arkeoloji Dergisi*, no. 3, 2000, pp. 129-136.

¹⁸ F. Cornelius, "Das Hethitische ANTAHSUM(SAR)-Fest", *RAI*, no. 27, 1969, p. 171.

¹⁹ S. Erkut, "Hititlerde AN.TAH.ŠUM^{SAR} Bitkisi ve Bayramı Üzerine Bir İnceleme (A Study on the Plant and Feast of AN.TAH.ŠUM^{SAR} in Hittites)", *III. Uluslararası Hititoloji Kongresi Bildirileri*, (16-27 Eylül 1996, Çorum), 1998, p. 194.

²⁰ H. G. Güterbock, "An Outline of Hittite AN.TAH.ŠUM Festival", *JNES*, no. 19/2, 1960, p. 80-89.

²¹ M. Koçyiğit, N. Özhatay, "The Wild Edible and Miscellaneous Useful Plants in Yalova Province (Northwest Turkey)", *Journal of Faculty Pharmacy of Istanbul University*, no. 40, 2009, pp. 19-29. Polat *et al*, "Survey of Wild Food Plants for Human", pp. 69-75.

²² I. Uğulu, S. Baslar, N. Yorek, Y. Doğan, "The Investigation and Quantitative Ethnobotanical Evaluation of Medicinal Plants Used around Izmir Province, Turkey", *Journal of Medicinal Plants Research*, no. 3/5, 2009, pp. 345-367.

plants.²³ However, the direct digestive use of the plants is unknown.

GA.RAŞ^{SAR}; it is thought to mean leek.²⁴ It is mentioned in the second prescription beginning from line 10. Because of this reason, it is understood that the root of the plant is used in making medicines. It is used with *GA-PA-NU* meaning root/ bulb/ lump. In the treatment, the plant is used together with ŠUM^{SAR} and the root šullittinni mentioned in the same part.

Leeks are reported to be boiled and used externally for the treatment of hemorrhoids in folk medicine.²⁵

U^harki; The species of this plant could not be determined. *harki* means white. The determinative U before the word expresses the “weed” kind of the plant. Although its species is not understood exactly, it is translated as “white weed.” In line 8, it is written that this plant must be taken at an amount of 1/2 with periods of seven days in the treatment of the disease. In line 14, it is expressed that the plant is given to the patient with a measure of 1/2 with wine.

It was reported that the plant, which was probably white, was left in wine and given to the patient at certain doses. This method can be evaluated as a good example from the past for the works on rational medicine use practiced today.²⁶

NULUḪ.ḪA^{SAR}; it is translated as poison parsley/poison hemlock (*asa foetida*).²⁷ As it is mentioned in line 4, it is understood that it is used for the treatment of *inan* and *šatar* diseases with plants like AN.TAH.ŠUM^{SAR}, U^harki NUMUN ZAG.AH.LI^{SAR}.

²³ A. Baytop, *Türkiye’de Botanik Tarihi Araştırmaları (Botanical History Studies in Turkey)*, Tübitak Yayınları, Ankara, 2004. R. Polat, S. Selvi, U. Çakılcıoğlu, M. Acar, “Investigations of Ethnobotanical Aspect of Wild Plants Sold in Bingöl (Turkey) Local Markets”, *Biological Diversity and Conservation*, no. 5/3, 2012, pp. 155-161.

²⁴ J. Friedrich, *Hethitisches Wörterbuch. Kurzgefasste kritische Sammlung der Deutungen Hethitischer Wörter*. Heidelberg, 1952, p. 272. H. A., Hoffner, *An English-Hittite Glossary*, Klincksieck, Paris, 1967, p. 64. Tischler, *Hethitisches Handwörterbuch*, p. 223.

²⁵ U. Çakılcıoğlu, İ. Türkoğlu, M. Kurşat, “Harput (Elazığ) ve Çevresindeki Bazı Bitkilerin Etnobotanik Özellikleri (Ethnobotanical Properties of Some Plants in Harput (Elazığ) and Its Environment)”, *Fırat University Doğu Anadolu Bölgesi Araştırmaları Dergisi*, no. 5/2, 2007, pp. 22-28.

²⁶ G. Özçelıkay, “A Pilot Study on Rational Drug Use”, *Journal of Fac. Pharm.*, no. 30/2, 2001, pp. 9-18.

²⁷ Hoffner, *An English-Hittite Glossary*, p. 44. A. Ünal, *Multilinguales Handwörterbuch des Hethitischen/A Concise Multilingual Hittite Dictionary/Hittite Çok Dilli El Sözlüğü*, Verlag Dr. Kovač, Hamburg, 2007, p. 492. “*asa foetida*” (lat.) C. Rüster, E. Neu, *Hethitisches Zeichenlexikon, Inventar und Interpretation der Keilschriftzeichen aus den Boğazköy-Texten*, StBoT, Beiheft 2, 1989, p. 343.

Ferulago species were used in making medicines and they were given local names like hilit (hiltite), “şeytan teresi” (poison parsley), “şeytan boku” (Satan’s poop) in the Ottoman era.²⁸

şullittinni-; Its species is unknown. Since it is mentioned with the plant *GA-PA-NU* in line 12, it is understood that the root of the plant is used in treatment.

Making medicines out of plant roots and using them as food are traditional methods practiced even today.²⁹

SUM^{SAR}; It was evaluated as onion³⁰ or garlic.³¹ We understand that the root of the plant is used in the treatment of the disease from line 11.

Onion and garlic are plants which we can call cure-all and they are among our cultivated plants used for medical and food purposes.³²

ZAG.AḪ.LI/ZÀ.AH.LI^{SAR}; its species is unknown. It was suggested to be cress³³ or a weed,³⁴ harmal/twitch³⁵ and fennel. ZAG.AḪ.LI^{SAR} is thought to be *marshanda* in Hittite language which means fennel.³⁶ Matchup of ZÀ.AH.LI and *marshanda* can be seen in a dictionary text found in Ortaköy.³⁷ However, *ankišk-* can also be considered as a species of the mentioned plant. Because, the sorting KUB XLIV 61 Obv. I 4’de NU.LUḪ.ḪA^{SAR} and AN.TAH.ŞUM^{SAR} is repeated in KUB VII 1 Obv. I 20-21 which is related to the treatment of a disease again. The

²⁸ Bilgin, A. *Osmanlı Döneminde İlaç Yapımında Kullanılan Tıbbi Bitkiler, Osmanlılarda Sağlık (Medical Plants Used in Medicine Production in the Ottoman Period, Health in Ottomans)*, (Eds: Yılmaz, C.; Yılmaz, N.), Biofarma Yayınları, İstanbul 2006. pp. 237-252.

²⁹ İ. Kaval, L. Behçet, U. Çakılcıoğlu, “Ethnobotanical Study on Medicinal Plants in Geçitli and its Surrounding (Hakkari-Turkey)”, *Journal of Ethnopharmacology*, no. 155/1, 2014, pp. 171-184. M. Mükemre, L. Behçet, U. Çakılcıoğlu, “Ethnobotanical Study on Medicinal Plants in Villages of Çatak (Van-Turkey)”, *Journal of Ethnopharmacology*, no. 166, 2015, pp. 361-374.

³⁰ Haas, *Materia Magica et Medica Hethitica*, p. 116. Rüster, Neu, *Hethitisches Zeichenlexikon*, p. 267. Tischler, *Hethitisches Handwörterbuch*, p. 259. Ünal *Multilinguales Handwörterbuch*, p. 574.

³¹ CAD, Vol. 17-Ş, 3, s. 300. Ertem, H., *Boğazköy Metinlerine Göre Hititler Devri Anadolu’sunun Florası (According to Bogazköy Texts Flora of Anatolia in Hittites Age)*, Ankara Üniversitesi Basımevi, Ankara, 1987, p. 32.

³² R. Polat, U. Çakılcıoğlu, F. Satıl, “Traditional Uses of Medicinal Plants in Solhan (Bingöl-Turkey)”, *Journal of Ethnopharmacology*, no. 148/3, 2013, pp. 951-963. Mükemre et al. “Ethnobotanical Study on Medicinal Plants”, pp. 361-374.

³³ Hoffner, *An English-Hittite Glossary*, p. 69. Haas, *Materia Magica et Medica Hethitica*, p. 116. Tischler, *Hethitisches Handwörterbuch*, p. 267.

³⁴ Rüster, Neu, *Hethitisches Zeichenlexikon*, p. 212. Ünal *Multilinguales Handwörterbuch*, p. 808.

³⁵ Ertem, *Boğ. Met. Göre Hit. Dev. Anad. Faunası*, p. 55.

³⁶ S. P. B. Durnford, J. R. Akeroyd, “Anatolian *marshanha* and the Many Uses of Fennel”, *Anatolian Studies*, no. 55, 2005, p. 9.

³⁷ Or. 95/1 VII 16: A. Süel, O. Soysal, “A Practical Vocabulary from Ortaköy”, *Hittite Studies in Honor of Harry A. Hoffner*, Eisenbrauns, Winona Lake, Indiana, 2003, p. 353.

expression NUMUN ZAG.AḪ.LI^{SAR} is seen before NU.LUḪ.ḪA^{SAR} but there is *a-an-ki-ša-aš* NUMUN-*an* instead of it in the second text.

The expression NUMUN ZAG.AḪ.LI^{SAR} mentioned in line 3 in the text about the treatment of *inan* ve *šatar* diseases means that the seed of the plant is used in the treatment. AN.TAḪ.ŠUM^{SAR} is seen to be used with NU.LUḪ.ḪA^{SAR} in the treatment of *inan* and *šatar* diseases. In KUB XXXVII 1 Obv. I 20, there is the use of the determinative U indicating the herbaceous kind of the plant.

Harmal (*Peganum harmala* L.) is used in the treatment of hemorrhoids.³⁸ Fennel (*Foeniculum vulgare* Mill.) is traditionally used for blurry eyes, itching and digestive problems.³⁹

KUB VII 1 Obv. I

It is a text about the treatment of an undefined disease. It is about a ritual for treatment. The disease can be thought to be a disease of the stomach from the expression “if the child faints or his intestines are injured” in the introduction part (Obv. I 1-2). It is understood that beer malt / brewer’s yeast is prepared using the ingredients in the part after the prescription. According to it, all greenery is smushed and mixed into the yeast. A little water is poured. From the expression “Then I gargle the mouth of the child and pour it into the mouth of the child and (the child) swallows it” (Obv. I 29-33), we understand that the patient is asked to gargle with this yeast and drink the yeast.⁴⁰

- 19 *ma-a-an I-NA* U₄ II^{KAM} *lu-uk-kat-ta nu ŠA* GIŠKIRI₆^{HIA} *ḫu-u-ma-an*
 20 BABBAR *kaḫ-ḫa-a-ni* GE₆ *kaḫ-ḫa-a-ni a-an-ki-ša-aš* NUMUN-*an TI-I-IA-TI*
 21 AN.TAḪ.ŠUM^{SAR} *ḫa-az-zu-ya-ni-iš ḫa-šu-uš-ša-ra-a-an la-ak-kar-ya-an*
 22 *ip-pi-ia-an-za-na-aš ša-a!-na ku-uk-ku-ul-la-aš mu-ú-li-li tar-ḫa-tar-ḫa-aš*
 23 *še-ḫu-un-za iš-ša-ra-a-ši-la-aš a-ri-e-ša-an tu-u-un-tu-u-li*
 24 *ša-a-da-ia-an šu-up-pi-iš ḫi-in-ḫi-in-du la-a-ḫa-ar-ša QA-AK-KU*

³⁸ U. Çakılcıoğlu, İ. Türkoğlu, “Plants Used for Hemorrhoid Treatment in Elazığ Central District”, *Acta Horticulturae*, no. 826, 2007, pp. 89-96.

³⁹ F. Tetik, S. Civelek U. Çakılcıoğlu, “Traditional Uses of Some Medicinal Plants in Malatya (Turkey)”, *Journal of Ethnopharmacology*, no. 146, 2013, pp. 331-346.

⁴⁰ Haas, *Materia Magica et Medica Hethitica*, p. 110.

KUB VII 1 Obv. I (19) When it becomes light on the second day (of ritual treatments), she puts everything out of the gardens: (20) white caraway, black caraway, seed of *ankiḫ*, *TIĪATU*, (21) AN.TAḪ.ŠUM^{SAR}, *ḫazzuyani*, *ḫašuššara*, *lakarḫa*, (22) *ipḫiḫanza*, *šana*, *kugulla*, *mulili*, *tarḫatarḫa*, (23) *šeḫunza*, *areša*, *iššarališa*, *tuntuli*, (24) *šadayan*, pure, *ḫinḫindu*, *laparša*, *QA-AK-KU*

ankiṣ-; It is a plant whose species is unknown.⁴¹ It is alleged to be a green horticultural plant.⁴² GIŠMÚ.SAR is sorted among the horticultural plant like the other plants in the text. It is considered among the plants used for the treatment of the disease in Line 20. The expression “*a-an-ki-ša-aṣ* NUMUN-*an*” in the text means that the seeds of the plant are used. It can also be used as a medicine in ABoT 34 11. Making medicines out of the roots of the plants is a traditional method even today.⁴³

hašuššara/haššušara-; It is a plant whose species is unknown.⁴⁴ It is regarded among a group of horticultural plants used in the treatment of diseases in Line 21.

Based on the feminine form –šara, it was tried to be compared to *haššuššara*, the feminine form of the word *hašuš* “king”.⁴⁵ It was read as the king’s plant.⁴⁶

hazzuani-; It is suggested to be lettuce although its species is uncertain.⁴⁷ It is among the horticultural plants like the other plants in the text. Since it is mentioned just after AN.TAḪ.ŠUM^{SAR} in Line 21, it is tried to be associated with this plant.⁴⁸ Wild lettuce (*Lactuca serriola* L.) has diuretic, antispasmodic and sedative effects.⁴⁹

hinhindu-; It is a plant whose species is unknown. It is considered among the horticultural plants used in treatment in Line 24.⁵⁰

ipḫiia/ipḫiianza-; It is a plant whose species is unknown.⁵¹ It is one of the horticultural plants mentioned in Line 22. The plant *ipḫiia* is seen with both GIŠ (KUB II 13 II 21, KBo X 24 III 6) and (KUB XXV 32 Obv. I 29) determinatives. However, the same use is not seen for *ipḫiianza*. From a legend text about goddess Inara⁵² (KUB XXXIII 59 Rev. III 12), we understand that people could sit under

⁴¹ Friedrich, *Hethitisches Wörterbuch*, p. 377. H. A. Hoffner, *Alimenta Hethaeorum, Food Production in Hittite Asia Minor*, AOS 5, 1974, s. 112. Ünal *Multilinguales Handwörterbuch*, p. 31.

⁴² (Tischler 2001; Puhvel 1984).

⁴³ R. Polat, F. Satıl, U. Çakılcıoğlu, “Medicinal Plants and Their Use Properties of Sold in Herbal Market in Bingöl (Turkey) District”, *Biological Diversity and Conservation*, no. 4/3, (2011), pp. 25-35.

⁴⁴ Tischler, *Hethitisches Handwörterbuch*, p. 46. Ünal *Multilinguales Handwörterbuch*, p. 197.

⁴⁵ Ertem, *Boğ. Met. Göre Hit. Dev. Anad. Faunası*, p. 43.

⁴⁶ Haas, *Materia Magica et Medica Hethitica*, p. 110.

⁴⁷ Tischler, *Hethitisches Handwörterbuch*, p. 49. Ünal *Multilinguales Handwörterbuch*, p. 208.

⁴⁸ Ertem, *Boğ. Met. Göre Hit. Dev. Anad. Faunası*, p. 43.

⁴⁹ Çakılcıoğlu *et. al.* “Harput (Elazığ) ve Çevresindeki Bazı Bitkilerin”, pp. 22-28.

⁵⁰ Tischler, *Hethitisches Handwörterbuch*, p.50. Ünal *Multilinguales Handwörterbuch*, p. 213.

⁵¹ Hoffner, *An English-Hittite Glossary*, p. 69. Friedrich, *Hethitisches Wörterbuch*, p. 341. Tischler, *Hethitisches Handwörterbuch*, p. 62.

⁵² CTH 336. Goddess in Hurro-Hittite mythology. Laroche, E., “Textes Mythologiques hittites en transcription: Mythologie Anatolienne I”, *Revue Hittite en Asiatique*, no. 23/77, Klincksieck, (1965), pp. 61-178.

this plant. When the use of GIS is also considered, it is thought to be a tall plant or a tree.⁵³ The name of the plant was given to a feast (KUB XXXIII 59 Rev. III 12).

kappani-; is translated as cumin⁵⁴ or caraway.⁵⁵ There are also contrary views.⁵⁶ It is considered among the horticultural plants used in treatment as BABBAR *kap-pa-a-ni* andin GE₆ *kap-pa-a-ni* in Line 20. BABBAR means “white” and GE₆ means “dark/black.” In this situation, the plants mentioned in the text are translated as white cumin and black cumin. What is named GE₆ *kap-pa-a-ni* in the text may be black sesame. Because black sesame is also known as black cumin.⁵⁷ It is possible to see this matching also from the dictionary text found in Ortaköy. In the text, (Or. 95/3 IX 21-22) *dankui kappani-* and ^UGAMUN GE₆, the plant’s name in Sumerian matches. However, both words are considered as equivalent to the word *ṢIBŪ*, which means black sesame in Akkadian.⁵⁸ It can be seen that *kap-pa-a-ni* GE₆ is put into a kneading trough (^{DUG}*išnura*) and it is used in making dough, in Maštigga ritual texts.⁵⁹ As is known, black sesame can be used in making dough but cumin does not have such a use. As for BABBAR *kap-pa-a-ni*, it should indicate cumin, conforming to the traditional translation. Cumin (*Cuminum cyminum* L.) is used to cure stomach ache and cold in Karaisalı, a district of Adana, Turkey⁶⁰

kugulla-; It is a plant whose species is unknown. It is defined as a medicinal plant.⁶¹ There is the use of the determinative SAR (KBo XI 19 Obv. 3, Rev. 12). It is mentioned between the names *ipḫianza* and *mulili* in Line 22. It may be a similar horticultural plant. The plant is tried to be associated with *lakarua* and *šararmi*, which are also uncertain in terms of their species.⁶²

⁵³ E. Neu, *Glossar zu den Althethitischen Ritualtexten*, StBoT 26, 1983, s. 76. Ertem, *Boğ. Met. Göre Hit. Dev. Anad. Faunası*, p. 130. Ünal *Multilinguales Handwörterbuch*, p. 261.

⁵⁴ A. Goetze, “Hittite Rituals, Incantations, and Description of Festivals”, *Ancient Near Eastern Texts*, Princeton University Press, p. 351, J. Friedrich, *Hethitisches Wörterbuch 3. Ergänzungsheft*, C. Winter, Heidelberg, 1966, p. 18. Tischler, *Hethitisches Handwörterbuch*, p. 72.

⁵⁵ Hoffner, *An English-Hittite Glossary*, p. 78.

⁵⁶ Ertem, *Boğ. Met. Göre Hit. Dev. Anad. Faunası*, p. 46.

⁵⁷ Baytop, T., *Türkçe Bitki Adları Sözlüğü* (*Dictionary of Turkish Plant Names*), Türk Dil Kurumları Yayınları, Ankara 2007, p. 246.

⁵⁸ Süel, Soysal, “A Practical Vocabulary from Ortaköy”, p. 354, 364.

⁵⁹ N. Oettinger, “Entstehung von Mythos aus Ritual. Das Beispiel des hethitischen Textes CTH 390A”, *Offizielle Religion, lokale Kulte und individuelle Religiosität*, Münster, Ugarit-Verlag, 1961, s. 348-352.

⁶⁰ Güneş, S. *Karaisalı (Adana) ve Köylerinde Halkın Kullandığı Doğal Bitkilerin Etnobotanik Yönden Araştırılması*, (*The Ethnobotanical Investigation of the Natural Plants of the People in Karaisalı (Adana) and Their Villages*), Niğde Üniversitesi Fen Bilimleri Enst., Yüksek Lisans Tezi, Niğde 2010.

⁶¹ Ünal *Multilinguales Handwörterbuch*, p. 356.

⁶² Ertem, *Boğ. Met. Göre Hit. Dev. Anad. Faunası*, p. 46.

lakarua-; It is thought to be a plant from the legume family.⁶³ There is its use with the postposition SAR (KBo V 2 Obv. I 15) and the determinative GIŠ (KBo XII 90 9). It is thought to be a horticultural plant when it is used with SAR and it is thought to be a fruit (tree) when used with GIŠ.⁶⁴ When it is considered that the uses of SAR and GIŠ are not used instead of each other, *lakarua* here is probably a horticultural plant. It is sorted among the plants used in making medicines without a determinative in Line 21. It can be seen that it is put on the body of an ill child as an ointment, in the continuation of the same text (Obv. 37-38).

laparša-; It is defined as a horticultural plant⁶⁵ or a vegetable⁶⁶ It is sorted among the plants used in making medicines in Line 24.

mulili-; It is defined as a horticultural plant⁶⁷ or a vegetable.⁶⁸ It is sorted among the plants used in making medicines in Line 22.

QA-AK-KU (KAKKU^{SAR}); It is defined as a plant used for medical purposes or its fruit.⁶⁹ The word, which is in Akkadian, is read as lentil or small beans.⁷⁰ It is also evaluated as pea⁷¹ or small pea.⁷² It is considered among the plants used in making medicines in Line 24.

šadayan-; It is defined as a horticultural plant or a flower.⁷³ It is considered among the plants used in making medicines in Line 24.

šehunza/šehunt-; It is a plant whose species is unknown.⁷⁴ It is considered among the plants used in making medicines in Line 23.

tarpatarpa-; It is a plant whose species is unknown.⁷⁵ It is thought to be used also in cooking besides its curative quality.⁷⁶ It is also suggested to be coriander.⁷⁷ There

⁶³ J. Puhvel, *Hittite Etymological Dictionary*, Vol. 5, Mouton Publishers, Berlin, New York, 2001, s. 37.

⁶⁴ Tischler, *Hethitisches Handwörterbuch*, p. 91. Ünal *Multilinguales Handwörterbuch*, p. 390. CHD, Vol. L-N, s. 19.

⁶⁵ Hoffner, *An English-Hittite Glossary*, p. 69. Tischler, *Hethitisches Handwörterbuch*, p. 92. Ünal *Multilinguales Handwörterbuch*, p. 396.

⁶⁶ CHD, Vol. L-N, s. 43.

⁶⁷ Tischler, *Hethitisches Handwörterbuch*, p. 107. Ünal *Multilinguales Handwörterbuch*, p. 457.

⁶⁸ CHD, Vol. L-N, s. 328.

⁶⁹ Ünal *Multilinguales Handwörterbuch*, p. 298.

⁷⁰ CAD, Vol. 8-K, s. 58.

⁷¹ Haas, *Materia Magica et Medica Hethitica*, p. 110.

⁷² W. von Soden, *Akkadisches Handwörterbuch*, Band I: A-L, Otto Harrassowitz, Wiesbaden, 1965, s. 422.

⁷³ Tischler, *Hethitisches Handwörterbuch*, p. 147. Ünal *Multilinguales Handwörterbuch*, p. 622.

⁷⁴ Tischler, *Hethitisches Handwörterbuch*, p. 148. Ünal *Multilinguales Handwörterbuch*, p. 626.

⁷⁵ (Friedrich 1952; Hoffner 1967).

⁷⁶ Tischler, *Hethitisches Handwörterbuch*, p. 150.

⁷⁷ Haas, *Materia Magica et Medica Hethitica*, p. 245. ; Ünal *Multilinguales Handwörterbuch*, p. 700

are *mulili* and *šehunza* among the plants used in making medicines in Line 22.

TIIATU; It is liked to be translated as poison parsley.⁷⁸ In this situation, it can be considered as the Akkadogramme of the NULUH.ĦA^{SAR} Sumerogramme mentioned in KUB XLIV 61 Obv. I 4. It is mentioned just before AN.TAĦ.ŠUM^{SAR} in Line 20. A situation seen similar to its use in KUB XLIV 61 Obv. I 4 can indicate that the name of the plant is read correctly. The plant *TIIATU* is used in the treatment of “spellbound” people in Mesopotamian sources.⁷⁹ If we consider this expression as a kind of psychological disease, it can also be expressed that the plant of poison parsley is used in the treatment of neurological diseases in Anatolia, in a similar way.

Ferulago species were used in making medicines and they were given local names *hiliti* (hiltite), *şeytan teresi* (poison parsley), *şeytan boku* (Satan’s poop) in the Ottoman era.⁸⁰

tuntuli-; It is a plant whose species is unknown.⁸¹ It is considered among the plants used in making medicines in Line 23.

KBo XXI 19 Obv. I

It is a text about the treatment of a disease whose kind is not certain;⁸²

6 Ú-UL ᵁḫar-ia-ti-t[a-]x du-uk-x[
 7 A-ni-kán ku-it ᵁḫu-an-da[
 8 nu-uš-ši pá-r-aš-du-uš x[-]ni ta-ak-k[i
 9 nu ᵁḫu-ya-ri-ta-aš x[p]ár-aš-du-uš-mi-iš[
 10 ᵁḫa-ar-ni-ta-aš-ši(-) pá}r-aš-du-uš[
 11 ḫa-aḫ-li-u-ya-an-za []x-ša-x[
 12 nu ki-i ya-aš-ši ᵁa[

arnitašši-; It is defined as a medicinal weed/plant.⁸³ The determinative Ú in Line 10 and 12 indicate that it is a herbaceous plant. The word *par-aš-du-uš* in the

⁷⁸ Friedrich, *Hethitisches Wörterbuch* 3, p. 104.; Hoffner, *An English-Hittite Glossary*, p. 69. Tischler, *Hethitisches Handwörterbuch*, p. 295. Ünal *Multilinguales Handwörterbuch*, p. 725.

⁷⁹ CAD, Vol. 18-T, s. 400.

⁸⁰ Bilgin, A. *Osmanlı Döneminde İlaç Yapımında Kullanılan Tıbbi Bitkiler*, p. 237-252.

⁸¹ Tischler, *Hethitisches Handwörterbuch*, p. 180. Ünal *Multilinguales Handwörterbuch*, p. 736.

⁸² Burde, *Hethitische Medizinische Texte*, p. 36.

⁸³ Tischler, *Hethitisches Handwörterbuch*, p. 23. Ünal *Multilinguales Handwörterbuch*, p. 57.

same part in the given text means bud. In this case, the plant may have buds⁸⁴ or its buds may be used for medical purposes. However, since the related part is broken, it is difficult to comment.

hariati-; It is defined as a medicinal plant used in making medicines.⁸⁵ It is mentioned as *ha-a-ri-ia-ti-in*^{SAR} in Line 9, thus, it should be an alliaceous plant. Since it is used with the determinative U in Line 6, it is understood that it is a herbaceous plant.

šuyarita-; It is defined as a medicinal plant.⁸⁶ The word is thought to be related to the word *šuyaru(i)-* which means “strong/ hardy” in Luwi language.⁸⁷ Since it is used with the determinative U in Line 7 and 9, it is understood that it is a herbaceous plant. The word *par-aš-du-uš-mi-iš* in the same line can be read as the form of the word “bud” with a possessive suffix. In this case, it may be a plant with buds like *arnitašši* or at least its buds are used for medical purposes.

KBo XXI 74 Rev. III

It is a text about the treatment of a body part named *auli*. It is remarked that this organ can be the neck, the throat, the carotic artery⁸⁸ or the spleen⁸⁹ but it cannot be the bronchus.⁹⁰ The disease can be thought to be a rheumatic or dermatological problem in the related parts. Because, when the medical knowledge of the Hittites is considered, it is more probable that a practice was made on the outer surface of the related parts rather than a surgical situation.⁹¹

6 [ma-a-]an UKÛ-an a-ú-li-iš ku-it-ki AŠ-RA e[-ep-zi]
 7 nu ki-i Ú da-a-i har-ša-at-ta-na-aš-ša^{SAR} [
 8 GA-PA-NU ŠE(-)e-u-ya-an da-a-i na-at-ta an-da[
 9 ki-na-a-iz-zi SIG₅-ah-zi nu UKÛ-an ku-it[

⁸⁴ Starke, F., *Untersuchung zur Stammbildung des keilschrift-luwischen Nomens*, StBoT 31, Harrassowitz, Wiesbaden, 1990, p. 207.

⁸⁵ Tischler, *Hethitisches Handwörterbuch*, p. 42. Ünal *Multilinguales Handwörterbuch*, p. 178. Burde, *Hethitische Medizinische Texte*, p. 61.

⁸⁶ Tischler, *Hethitisches Handwörterbuch*, p. 157. Burde, *Hethitische Medizinische Texte*, p. 73.

⁸⁷ O. Carruba, *Das Beschwörungsritual für die Göttin Wišurijanza*, StBoT 2, 1966, pp. 14-15. Starke, *Untersuchung zur Stammbildung*, p. 209.

⁸⁸ Haas, *Materia Magica et Medica Hethitica*, p. 61.

⁸⁹ Ünal *Multilinguales Handwörterbuch*, p. 78.

⁹⁰ Tischler, *Hethitisches Handwörterbuch*, p. 29.

⁹¹ Burde, *Hethitische Medizinische Texte*, p. 26.

KBo XXI 74 Rev. III (6) When a man the auli ta[kes] some place (7) then he takes this herb: *haršatta-našša*, [(8) root, ... he takes grain and it into it [(9) he ordered, ma(de) good and gave people what [

eua-; It is suggested to be a kind of barley.⁹² It is mentioned with *šepit-*, which is perceived as a kind of wheat, in many text places. It is mentioned as *ŠE (-)e-u-ua-an*” in Line 8. The determinative *ŠE* which means grain indicates the plant’s feature of barley kind. In the related text, another plant which is mentioned before the *eua-* plant and whose name cannot be read is understood to be a plant whose root is used in making medicines because of its *GA-PA-NU* Akkadogramme which means “root.” A similar situation is suggested for the plant *eua* (Ertem 1987). However, any translation which can make this situation valid is not suitable in terms of grammar.

Barley (*Hordeum vulgare* L.) is used as intestinal regulatory, for diarrhea, anorexia and appetizing in traditional treatment⁹³

haršattanašša-; Its species is unknown. It is characterized as a medical plant.⁹⁴ In Line 7, it is among the plants which must be used by the patient in case the *auli* part gets sick. It is used with the determinatives *ŠAR* and *Ú*.⁹⁵ In this case, this plant should be both a herbeaceous and alliaceous plant.

Medical Plants in the Other Texts

^{GIŠ}*BURĀŠU*; is thought to mean juniper⁹⁶ or umbrella pine.⁹⁷ The expression “NUMUN ^{GIŠ}*BU-RA-ŠU*” in KUB XLIV 65 7’de indicate that the seed of the plant is used. It is used with *ZAG.AḪ.LI^{ŠAR}* for the treatment of a disease whose name cannot be read. It is seen that it is used in making medicines with ^{GIŠ}*KIR-KI-RA-NU* which is liked to be equalized with the seed of the umbrella pine in KUB XXXVII I Obv. 13.⁹⁸ In this case, its evaluation as juniper can be more correct. This plant may be related to *ZAG.AḪ.LI^{ŠAR}* mentioned above. In KUB IV 47 Obv. I 30, it is written that *ZAG.AḪ.LI^{ŠAR}* and ^{GIŠ}*BURĀŠU* were put in a stone receptacle, in a ritual text about depression treatment.⁹⁹ The same text is used twice more during the ^{GIŠ}*BURĀŠU* ritual in Obv. I 40, Rev. I 18. Although the

⁹² J. Friedrich, E. Kammenhuber, *Hethitisches Wörterbuch*, Band II: E, C. Winter, Heidelberg, 1988, p. 141. Hoffner, *An English-Hittite Glossary*, p. 46. Tischler, *Hethitisches Handwörterbuch*, p. 34.

⁹³ S. A. Sargin, E. Akçicek, S. Selvi, “Anethnobotanical Study of Medicinal Plants Used by The Local People of Alaşehir (Manisa) in Turkey”, *Journal of Ethnopharmacology*, no. 150, 2013, pp. 860–874.

⁹⁴ Ünal *Multilinguales Handwörterbuch*, p. 186.

⁹⁵ Ertem, *Boğ. Met. Göve Hit. Dev. Anad. Faunası*, p. 122.

⁹⁶ Hoffner, *An English-Hittite Glossary*, p. 91. Friedrich, *Hethitisches Wörterbuch*, p. 306. Tischler, *Hethitisches Handwörterbuch*, p. 275. CAD, Vol. 2-B, p. 326. von Soden, *Akkadisches Handwörterbuch*, p. 139.

⁹⁷ F. Köcher, “Ein akkadischer medizinischer Schülertext aus Boğazköy”, *AfO*, no. 16, 1952, p. 47.

⁹⁸ Köcher, “Ein akkadischer medizinischer Schülertext”, p. 47.

⁹⁹ G. Beckman, “A Hittite Ritual for Depression (CTH 432)”, *Tabularia Hethaeorum, Festschrift Košak*, Dresdner Beiträge zur Hethitologie 25, 2007, p. 70-72.

place of the first text is quite broken, water and beef offerings are told. The place of the second text is more secured and ^{GIŠ}BURĀŠU is risen while the flour bowl is taken from the ground. It is difficult to make a medical evaluation about the text. It is understood that the seeds of KUB XLIV 65 6'da ZAG.AḪ.LI^{SAR} and ^{GIŠ}BURĀŠU are used in making medicines together, again in KUB XLIV 65 6.

The decoction of the cone of the juniper (*Cupressus sempervirens* L.) tree is used for hemorrhoids.¹⁰⁰ The infusion of umbrella pine (*Pinus pinea* L.) is used for bronchitis and cardiovascular diseases.¹⁰¹

Ì.GIŠ=ŠE.GIŠ.Ì; Since ŠE.GIŠ.Ì is read as sesame oil in the classical translation, Ì.GIŠ is translated as sesame oil.¹⁰² However, it is suggested not to have any connection with sesame.¹⁰³ The pronunciation of the plant can be said to be contradictory.¹⁰⁴ The lexical meaning of Ì.GIŠ is "vegetable oil".¹⁰⁵ The Sumerogram ŠE.GIŠ.Ì, which is considered as related to this word, was evaluated as flax seed in Mesopotamian sources.¹⁰⁶ Avoiding a certain evaluation, the word can be thought to be used commonly for sesame and flax oil within the scope of vegetable oil.¹⁰⁷

Sesame (*Sesamum indicum* L.) is traditionally used in the treatment of diabetes.¹⁰⁸ In KBo XXI 20 Obv. I 12, it is understood that Ì.GIŠ is poured onto the patient's body together with a plant whose name is not read in case of headache/nose and mouth aches.

^{GIŠ}SU.ÚR.MÌN; It is thought to mean cypress.¹⁰⁹ It is also suggested to be juniper.¹¹⁰ The determinative Ì meaning "oil" in the beginning of the expression

¹⁰⁰ R. Polat, F. Satıl, "An Ethnobotanical Survey of Medicinal Plants in Edremit Gulf (Balıkesir-Turkey)", *Journal of Ethnopharmacology*, no. 139, 2012, pp. 626-641.

¹⁰¹ Polat, Satıl, "An Ethnobotanical Survey of Medicinal Plants", pp. 626-641.

¹⁰² A. Goetze, "Hittite Myths, Epics and Legends", *ANET*, Princeton University Press, Princeton, New Jersey, 1955, s. 127. Rüster, Neu, *Helithisches Zeichenlexikon*, p. 262. ; Tischler, *Helithisches Handwörterbuch*, p. 254. G. Güterbock, "Oil Plants in Hittite Anatolia", *JAOs*, no. 88/1, 1968, s. 71.

¹⁰³ H. A. Hoffner, "Oil in Hittite Texts", *The Biblical Archaeologist*, no. 58/2, 1995, p. 108, 110.

¹⁰⁴ CHD, Vol. Š-1, s. 207.

¹⁰⁵ M. Civil, "Lexicography", *Sumerological Studies in honor of Thorkild Jacobsen*, ed. S. Lieberman, *Assyriological Studies*, no. 20, The University of Chicago Press, Chicago, London, 1974, p. 141.

¹⁰⁶ CAD, Vol. 17-Š, 1, s. 307. H. Helbaek, "The Plant remains from Nimrud", *M. E. L. Mallowan. Nimrud an Its Remains*, Vol. 2, pp. 613-618. D. Bedigian, "še-giš-i Sesame or Flax?", *Bulletin on Sumerian Agriculture*, no. 2, 1985, pp. 159-178.

¹⁰⁷ S. Demirel, "Hititçe Metinlerde Keten Tohumu na İlişkin Bir Öneri" *Gazi Akademik Bakış*, no. 10/19, 2016, pp. 161-168.

¹⁰⁸ C. Durmuşkahya, M. Öztürk, "Ethnobotanical Survey of Medicinal Plants Used For The Treatment Of Diabetes in Manisa, Turkey", *Sains Malaysiana*, no. 42, 2013, pp. 1431-1438.

¹⁰⁹ Rüster, Neu, *Helithisches Zeichenlexikon*, p. 128. Tischler, *Helithisches Handwörterbuch*, p. 258.

¹¹⁰ Hoffner, *An English-Hittite Glossary*, p. 110.

İ^{GIS}ŠU.ÚR.MAN in KBo XXI 20 Obv. I 18 means that the plant is used in the treatment of illnesses. From the text, it is understood that this plant is used in the treatment of a person bothered by genies (mental illness). Cypress (*Cupressus sempervirens* L.) is traditionally used for wart treatment and toothache.¹¹¹

UĐ.NI.ŠA^{SAR}; Its species is unknown. It can be defined as a plant used for medical purposes. From the completion UĐ.NI.ŠA^{SAR} *pár-aš-du-un* in KUB XLIV 63 Obv. II 9, it is understood that the plant is used in making medicines. According to what it understood from the text, the buds of this plant washed with water are used in case of bleeding. It is understood that the seeds of the plant *PILLŪ* are used as medicine from the expression "NUMUN *PÍ-IL-LE-E*" in the place of the text in KUB XXXVII 1 Obv. 35. This plant was evaluated as mandrake/mandrake root.¹¹² Considering its similar curative features, the plant *PILLŪ* can be regarded as a plant connected to the UĐ.NI.ŠA^{SAR} Sumerogramme.

ħaħuīšaia-; It is suggested to be a plant of weed or vegetable kind but used for medical purposes.¹¹³ It is mentioned as *GA-PA-NŪ ħa-ħu-u-i-ša-ia^{SAR}* in KBo XXI 17 Ik. Kol. 1 l x]. It is an alliaceous plant. In the related text, it is mentioned after a plant whose name cannot be read and whose root is used as it is understood from the text.

ariattarija-; It is thought to be a curative¹¹⁴ and an alliaceous plant whose species has not been determined.¹¹⁵ It is mentioned as *a-ri-ia-at-ta-ri-ia- an^{SAR}* in KUB XLIV 64 Obv. II 7, as a plant related to a disease whose name cannot be read. The beginning part of the name is broken. Because of this reason, it can be equalized to one of the other plant names (*hariyati?*). It is phonetically close to the word *ariatt*.¹¹⁶ which means height, mountain or hill, connected to the God of Storm in Luwi language.

Discussion and Conclusion

As far as understood from the Hittite cuneiform texts survived to the present day from the 2nd millennium B.C., the Hittites used plants for treatment. Although the number of the related texts are few and these texts are broken, the existence of a Hittite medicine is clear. Using plants for healing indicate a cultural accumulation.

¹¹¹ Sargin *et al.* "Anethnobotanical Study of Medicinal Plants", pp. 860–874.

¹¹² Köcher, "Ein akkadischer medizinischer Schülertext", p. 47, 55. von Soden, *Akkadisches Handwörterbuch*, p. 863.

¹¹³ Rüter, Neu, *Hethitisches Zeichenlexikon*, p. 127. Tischler, *Hethitisches Handwörterbuch*, p. 35. Ertem, *Boğ. Met. Göre Hit. Dev. Anad. Faunası*, p. 120. J. Puhvel, *Hittite Etymological Dictionary*, Vol. III, Mouton de Gruyter, Berlin, New York, 1991, p. 9.

¹¹⁴ Tischler, *Hethitisches Handwörterbuch*, p. 22.

¹¹⁵ Ünal *Multilinguales Handwörterbuch*, p. 52.

¹¹⁶ Starke, F., *Untersuchung zur Stammbildung*, pp. 63-64.

Using plants for healing can be said to be a part of different religious rituals besides being a real practice in the Hittite society. This situation is a feature of the Hittite medicine which can be criticized when compared to the medical practices in the other Ancient Near Eastern societies. In spite of this, the reality of the knowledge about curative features of plants in the Hittite society does not change. There are the name of the disease and a short explanation in the introduction parts of some Hittite texts which have the quality of prescriptions. In the continuation, there are the lists of the plants to be used in the treatment. From these parts of the texts, it is understood that the Hittites used the roots, trunks, buds, flowers and all plant and seed parts in treatment. The doses and the using ways of these parts are explained in the related texts.

Limited information about the herbal treatment methods of the era is obtained from the Hittite cuneiform scripts. However, it was reported that the plants used by the Hittites were used for similar and different disease in different regions of Anatolia, in many ethnobotanical studies. It is understood that some of the plants used for healing in the Hittite era are still used with their similar features, with this study. Because of this reason, it can be said that the use of herbs which has become traditional from generation to generation has become a part of our culture.

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