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THE PROBLEM OF PLANT NAMES' LATIN SCIENTIFIC EQUIVALENTS IN OLD ANATOLIAN TURKISH MEDICAL MANUSCRIPT STUDIES

ESKİ ANADOLU TÜRKÇESİ TIP METNİ ARAŞTIRMALARINDA BİTKİ ADLARININ LATİNCE BİLİMSEL KARŞILIKLARI SORUNU

Anıl ÇELİK *

Abstract

Vocabulary studies are of significant importance for linguistic and cultural research because the worldview of a society is hidden in the verbal repertoire of its language. In studies on medical texts of the Old Anatolian Turkish period, it has been determined that there are errors and inconsistencies in the Latin equivalents of the plant names. The aim of this article is to reveal the true Latin equivalents of the plant names whose Latin equivalents are given incorrectly. To achieve this aim, we determined the sample selected by evaluating the forms in the indexes and dictionaries of fourteen Old Anatolian Turkish medical manuscript studies. Through this sample, we have attempted both to examine the reasons for the related discrepancies, as well as put forth solutions on how to eliminate them were evaluated. Such inconsistencies not only mislead scholars but also present them numerous challenges when it comes to further research. One of the aims of the study is to draw attention to such difficulties and discuss the measures that can be taken on the relevant issue.

Keywords
Old Anatolian Turkish, Medical Manuscripts, Plant Names, Medical Terms, Scientific Equivalents

Anahtar Kelimeler
Eski Anadolu Türkçesi, Tıp Metinleri, Bitki Adları, Tıp Terimleri, Bilimsel Karşılıklar

Öz

Söz varlığı çalışmaları diller için büyük önem arz etmektedir. Çünkü bir dili konuşan toplumun dünyayı görme şekli o dilin kelime hazinesinde gizlidir. Eski Anadolu Türkçesi dönemi tıp metinleri üzerine yapılan çalışmalarda bitki adlarının Latince karşılıklarının verilmesinde hatalar ve tutarsızlıklar olduğu tespit edilmiştir. Bu makalede amaç, Latince karşılıkları hatalı olarak verilen bitki adlarının gerçek karşılıklarını ortaya koymaktır. Araştırmada seçilen örneklem on dört Eski Anadolu Türkçesi tıp metni çalışmasının dizin ve sözlüğündeki biçimler değerlendirilerek oluşturulmuştur. Bu örneklem aracılığıyla, ilgili tutarsızlıklara yol açan sebepler irdelenmiş ve bu sebeplerin nasıl ortadan kaldırılabileceğine dair çözüm yolları değerlendirilmiştir. Eski Anadolu Türkçesi tıp metinleri çalışmalarının dizin ve sözlüklerinde yer alan bu türlü tutarsızlıklar, konu hakkında araştırma yapacak bilim insanlarını yanlış yönlendirmekte ve eserlerin sözlüklerini hazırlama noktasında bununla bağlantılı zorluklar doğurmaktadır. Çalışmanın hedeflerinden biri de böylesi zorluklara dikkat çekerek ilgili konuda alınabilecek önlemlere dair tartışmalarda bulunmaktır.

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1. INTRODUCTION

Throughout history, various medical systems have been established and developed all over the world. Wherever people live, regardless of the age, there is a physician who treats diseases in every time period (Küçüker, 2010, p. 401). When the history of Turkish medicine is taken into consideration, it is seen that the first proofs of the healing studies were found in ancient times and geographies. There are many sources of information about the treatment of diseases with various drug combinations and the establishment of separate tents marked with flags or spears for the healing of patients in historical Turkic settlements which were in Central Asia. (Güven, 2012, p. 1; Çelik, 2013, p. 1). The use of plants as medication has made plant names a term of medicine and pharmacy. For this reason, studies on plant names have transcended the boundaries of Botany and become the subject of research in different fields of science (Önler, 2004, p. 274). Medicine has been handed down from one society to the other since the dawn of time, with each civilization adding pieces of its own tradition and expanding both upon that and its terminology. Ancient Greek medicine was developed by taking over the Egyptian and Mesopotamian legacy, and the Islamic world acquired this legacy, especially through translations made during the reign of The Abbasid Caliph Mamun, and because of this, raised great names such as Avicenna. With the Renaissance, this legacy was transferred back to Western culture through translations (Önler, 2004, p. 273). In parallel, we can say that Old Anatolian Turkish medical terminology takes root in the Islamic medical tradition, which had elaborated upon the Ancient Greek tradition via translation from Greek into Arabic, and then into Ottoman Turkish (Kaya Gözlü, 2012, p. 170). This has led to the fact that, as with all other aspects of medical terminology, Old Anatolian Turkish plant terminology is pluralistic too -in other words, more than one term may exist for just one single plant that are Turkish, Arabic, Persian, Latin, or Greek in origin. In fact, the same plant may even have more than one Turkish equivalent as well (Çelik, 2014, p. 2). This has led to several linguistic problems, one of which being the issue of inconsistent spelling. This issue is exacerbated given the reasons, combined with the lack of systematic rules on spelling in the period and the lack of knowledge of foreign languages, reflecting dialectological features on the studies, preference for specific spellings, sloppy and hasty writing (Çelik, 2016, p. 70). However, the problem is not limited to just these alone. The multiplicity of translation terms also leads to many complexities about which term they correspond to in Turkish. In response to the issue, the writers of the period often gave their equivalents from the same language or another and made occasional definitions in order to ensure the correct recognition of a plant when it was named (Önler, 1990a), such as *lisān-ı hamel ya'nî ḳuzu dili suyıla… / lifāh ya'nî yebrūh kökidür* – (with the juice of lisān-ı hamel in other words with the juice of ḳuzu dili… / it is lifāh, in other words it is the root of the yebrūh) (Çelik, 2014, pp. 140 - 148). Unfortunately, such explanations have not been sufficient to remedy this confusion, given that in different manuscripts; different plants can be referred using the same nomenclature. What is more, studies published that have researched this do not always agree with one another either, which in turn opens the way to creating rather than avoiding inconsistencies. It cannot be said that the plant names in Turkish have been

investigated properly. There are many plant names in modern Turkish that have not yet been written down. The abundance of terms in this field stems from the fact that in almost every region, the same plant is named differently. The most important challenge that studies in this field face is the compilation and correct description of their equivalents (Önler, 1990a, p. 357; Şahin, 2007a, p. 570). Additionally, different plants can also be referred using the same term in different regions. Regional dialects lack many terms for many of the plants that botanists have identified as separate species and taxa in Flora detection studies. The way that locals classify plants versus the way botanists classify plants are different. A local may refer to a plant under a single name, whereas a botanist will distinguish plant taxon according to the color of the plant's flower, the appearance of its leaves, and the condition of its roots, etc., hence leading them to develop separate names (Şahin, 2016, pp. 788-789). Non-systematic use of such terminology in medical term studies also creates new problems.

At this point, the importance of the scientific binomial naming system emerges. Ürker (2014, p. 116) states that, if the rules of the globally accepted binomial scientific naming system are not observed in the nomenclature of living species, which may cause various problems both regarding human societies as well as regarding related species.

> *Although the binomial nomenclature system developed by Linnaeus in the 1700s is a universally accepted scientific nomenclature method, this method was not known and not applied before the 1700s. This led to the use of the same names in different geographies around the world to describe different species. This situation occurs more frequently on local scales whereby the related process leads to a fundamental change in the use and management of species, as well as the relationship between these species and human culture. (…) Errors derived from the sources of historians such as Pliny, Herodotus and Thophrastus are based on errors in the translation of these sources, especially during the translation into English. (…) Another erroneous case regarding the naming of the species is that the English nomenclature representing the species is quite complex and varied. (…) One of the inconsistencies in historical anecdotes is that profoundly serious historical fiction, and therefore historical errors, arise because researchers did not examine the Ottoman Empire seriously and that they constructed the information at hand indiscriminately. Public opinion has been misguided because of the attribution of these errors, as if they were consistent by different researchers* (Ürker, 2014, pp. 123-124).

The incorrect use of the binomial naming system, which is created to eliminate inconsistencies in species names, also leads to new inconsistencies. It should be noted that inconsistencies related to this are frequently found in the indexes and dictionaries of Old Anatolian Turkish medical manuscript research[1].

[1] In relation to the subject of this paper, the studies listed below are useful: *Büyük Bitkiler Kılavuzu [The Great Handbook on Plants]* (Akalın, 1936); *Illustrated Polyglottic Dictionary of Plant Names in Latin, Arabic, Armenian, English, French, German, Italian and Turkish Language* (Bedevian,1936); *Eski Anadolu Türkçesi Döneminde Yazılmış İki Tıp Kitabında Yer Alan Sağlık Bilgisi Terimleri* [*Medical Terminology in Two Medical Books Written During the Old Anatolian Turkish Period*] (Önler, 1985); *Türkspracige Volksnamen für Kräuter*

The aim of this article is to reveal the true equivalents of the plant names whose Latin equivalents are given incorrectly in studies on medical texts of the Old Anatolian Turkish period. To achieve this aim, we evaluated the problem of plant names' Latin scientific equivalents in the indexes and dictionaries of Old Anatolian Turkish medical manuscript studies through a sample selected from the relevant works. This sample is based on the comparison of Latin equivalents of plant names in the studies below:

1. *Terceme-i Kāmilü's-Sınā'a (Giriş-İnceleme-Metin-Dizin)* [*Terceme-i Kāmilü's-Sınā'a (Introduction-Analysis-Text-Index)*] (TKS) (Çelik, 2014),

2. Câmi'ü'l-Fürs Örneğinde XVI. Yüzyıl Bitki İsimleri [Plant Names in XVI.st Century in Model of Cami'ü'l-Fürs] (CF) (Şahin, 2007a),

3. *İbrahim Bin Abdullah'ın Cerrāh-nāme -Alā'im-i Cerrāhîn- Adlı Eseri (Giriş-Metin Sözlük)* [*İbrahim Bin Abdullah's Work, Cerrāh-nāme -Alā'im-i Cerrāhîn (Introduction-Manuscripts-Dictionary)*] (CN) (Gürlek, 2011),

4. *Envā-ı Emrāz: İnceleme- Metin- Dizin* [*Envā-ı Emrāz: (Introduction-Manuscripts-Dictionary)*] (EE) (Kaya, 2009),

5. *Kemāliyye* (K) (Bayat, 2007),

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und Stauden mit den deutschen, englischen, und russischen Bezeichnungen (Hauenschild, 1989); *Türkçe Bitki Adları Sözlüğü [A Dictionary of Turkish Plant Names]* (Baytop, 1994); *XIV. ve XV. Yüzyıl Anadolu Türkçesi Botanik Terimleri*, [*Turkish Botanical Terms in 14th-15th Century Anatolian Turkish*] (Önler, 1990a); *XIV.-XV. Yüzyıl Tıp Metinlerinde Türkçe Bitki Adları* [*Turkish Plant Names in 14th-15th Century Medical Manuscripts*] (TBA) (Önler, 2004); *Kutadgu Bilig'de Bitki Adları* [*Names of Herbs in Kutadgu Bilig*] (Öztürk, 2005); *Câmi'ü'l-Fürs Örneğinde XVI. Yüzyıl Bitki İsimleri* [*Plant Names in XVI.st Century in Model of Cami'ü'l-Fürs*] (Şahin, 2007a); *Türkçede Kullanılan Alıntı Bitki Adları* [*Plant Names of Foreign Origin Used in Turkish*] (Alkayış, 2009); *Eski Anadolu Türkçesinde Eczacılık Terimleri ve Bu Terimlerin Tıp, Botanik, Zooloji, Madencilik, Kimya Terimleriyle İlişkileri [The Old Anatolian Turkish Pharmaceutical Terms and The Terms Medical, Botany, Zoology, Chemical, Mining Terms Relations With]* (Gümüşatam, 2010). *Eski Oğuz Türkçesinde Tıp Dilinin Oluşumu ve Özellikleri [The Formation and Characteristics of Medical Language In Old Oghuz Turkish*] (Doğan, 2010); *Lügat-ı Mükilât-ı Eczâ Dervi Siyâhî Lârendevî* (Murad, 2009); *Lügat-i Müşkilât-ı Eczâ'da Türkçe Bitki Adları* [*Turkish Plant Names in Lügat-i Müşkilât-ı Eczâ*] (Küçüker, 2010); *Türkiye Türkçesinde Organ Adlarıyla Oluşturulmuş Bitki Adları* [*The Naming of Plants Through the Use of Organ Names in Turkish*] (Uçar, 2012); *Does The Name Really Matter? The Importance of Botanical Nomenclature and Plant Taxonomy in Biomedical Research* (Bennett and Balick, 2014); *What Is In A Name? The Need for Accurate Scientific Nomenclature for Plants* (Rivera, Allkin, Obon, Alcaraz, Verpoorte & Heinrich, 2014); *Risâle-i Mu'âlece'ye Göre XVI. Yüzyıl Türkçesinde Tıbbi Bitki Adları* [*Medicinal Plant Names in 16th Century Turkish According To Risala-i Mu'âlece*] (Gümüşatam, 2015); *Common Mistakes When Using Plant Names And How To Avoid Them* (Dauncey, Irving, Allkin & Robinson, 2016); *Filoloji ve Botanik Alanlarının Kavşağında Yerel Fitonimler (Bitkiadları) Meselesi* [*Domestic Plant Names Issue at the Intersection of Philology and Botany*] (Şahin, 2016); *Türklerin Dünyasından Uzaklaşan Türkçe Tıp Terimleri: Eski Anadolu Türkçesinden Türkiye Türkçesine* [*Turkish Medicine Terms No Longer Used by Turks: From Old Anatolian Turkish to Modern Turkish*] (Doğan, 2017); *Eski Anadolu Türkçesi ile Yazılmış Tıp Eserleri ve Bu Eserler Üzerine Yapılan Çalışmalar [Medical Texts Written with Ancient Anatolian Turkish And On These Works Made Works]* (Yıldız, 2019); *[Hazā Kitāb-ı Hulāsa-i Tıbb'daki Bitki Adları Üzerine Bir İnceleme* [*A Study About Plants Names in Hazâ Kitâb-ı Hulâsa-i Tıbb*] (Küçüker & Yıldız, 2019); *Kitâb-ı Ma'cûn Adlı Tıp Metninde Geçen Botanik ve Tıp Terimleri [Botanical and Medical Terms in The Medical Text Named Kitâb-ı Ma'cûn]* (Aytaç, 2019); *Eski Bir Tıp El Yazması Tabibnâme'de Bitki Adları [Plant Names in An Old Medical Manuscript Tabibnâme]* (Ayan & Karpuz, 2020).

6. *Hekim Mehmed Nidâî'nin Manzum Tıp Risâlesi Keyf-i Kitâb-ı Nidâî* [*Mehmed Nidâî's Verse Medical Treatise, Keyf-i Kitâb-ı Nidâî*] (KKN) (Ölker & Direkçi, 2009),

7. *Kitāb-ı Tıbb-ı Hikmet (İnceleme-Metin-Dizin)* [*Kitāb-ı Tıbb-ı Hikmet (Introduction-Manuscripts-Index)*] (KTH) (Doğan, 2015),

8. *Kitâb-ı Tıbb-ı Latîf (72b-151b) İnceleme-Metin Sözlük* [*Kitâb-ı Tıbb-ı Latîf (72b-151b) (Introduction-Manuscripts-Dictionary)*] (KTL) (Bekmez, 2009),

9. *Abdulvehhâb bin Yusuf'un Müntahab-ı Fi'tTıbb'ı (Dil İncelemesi-Metin-Dizin)* [*Abdulvehhâb bin Yusuf's Müntahab-ı Fi'tTıbb (Language Review-Manuscripts-Index)*] (MFT) (Güven, 2005),

10. *Terceme-i Akrabâdîn Sabuncuoğlu Şerefeddin (Giriş-İnceleme-Metin-Dizinler)* [*Terceme-i Akrabâdîn Sabuncuoğlu Şerefeddin (Introduction-Analysis-Manuscripts, Indexes)*] (TA) (Doğan 2009),

11. *Yādigār* (Y) (İbn-i Şerif, 2017),

12. *Müntahab-ı Şifā II Sözlük* [*Müntahab-ı Şifā II Dictionary*] (MŞ) (Önler 1990c),

13. *Müntehib* (M) (Şahin, 2007b),

14. *Edviye-i Müfrede* (EM) (Canpolat, Önler 2007).

The data we have obtained from these studies should be considered as a small sample that may provide researchers the opportunity to study this subject in detail. These discrepancies are a matter of concern for the whole of the studies conducted on medical manuscripts of the period.

2. RESULTS AND DISCUSSION

We explained the main findings of this research through the tables below. We analyzed and discussed the data presented in the tables by making various comparisons.

2.1. The term *cırcır*, its equivalents, and any related problems concerning it in relation to the studies examined

Species	Equivalents
Nasturtium officinale W.T. Aiton [Family: Brassicaceae Genus: *Nasturtium* W.T. Aiton] (URL-1)	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** cırcır [ar] (CN, KTH, MŞ, TKS); hurfü'l-mâ' [ar] (Y); ısbatan [tr] (KTH); kerdeme [grc] (TKS); sezāb [ar] (EE); su kerdemesi [tr+grc] (EE); su teresi [tr] (CF, KTH); tohm-ı hardal [fa+ar] (KTL). **Modern Turkish equivalents:** Su Teresi, Acı Gerdeme, Cırcır, Çakandura, Çünk, Derdime, Gerdeme, Hardal Otu, Istapan, Ispatan, İstepan, Kardomot, Kerdeme, Kurbağapisliği, Su Gerdemesi, Su Kerdemesi, Su Mancası, Tizik, Tuzik, Yabani Tere (Baytop, 1994,pp. 250-251).
Allium porrum L. (Synonym of Accepted Name *Allium ampeloprasum* L.) [Family: Amaryllidaceae Genus: *Allium* L.] (URL-1, URL-2, URL-3)	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** bırasa [grc] (KTH); cırcır [ar] (CF); farāsîyūn [fa] (CF, KTH, MŞ, Y); fersūn [fa] (KTH); gendenā [fa] (EM.); gendene [fa] (CF, EM, KTH, MŞ, TA, TKS); gerdene [fa] (CF); it siyegi [tr] (Y); kaluazerfus [grc] (Y); kendāne [fa] (KTL); kendene [fa] (CN, EE, K, KTL, MFT); pırasa [grc] (EE, KTL). **Modern Turkish equivalents:** Pırasa, Yabani Pırasa. (Önler, 1990)
Eremurus spectabilis M. Bieb. [Family: Asphodelaceae Genus: *Eremusurus* M. Bieb.] (URL-1, URL-2, URL-3)	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** çiriş [tr] (KTH); kendene [fa] (M). **Modern Turkish equivalents:** Çiriş, Çireş, Dağ Pırasası, Gülük, Kiriş, Sarı Çiriş, Sarı zambak, Yabani pırasa. (Baytop, 1994, pp. 250-251)
Ruta graveolens L. [Family: Rutaceae Genus: *Ruta* L.] (URL-1, URL-2, URL-3)	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** baġanus [grc] (CN, MŞ); biġanus [grc] (Y); feycer [ar] (CF); peyġānū [grc] (EE); ficen [ar] (KTH); peyvìne [grc] (EE); sadef [ar] (KTH, EM); sedef [ar] (CF, CN, MŞ); sezāb [ar] (CF, CN, EM, KTH, KTL, M, MFT, MŞ, TA, Y). **Modern Turkish equivalents:** Sedef Otu (Özbay, 2018, p.1).
Lepidium sativum L. [Family: Brassicaceae Genus: *Lepidium* L. (URL-1, URL-2, URL-3)	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** kerdeme [grc] (CF, CN, EE, EM, KTH, M, MŞ); rişād (CF); tere [fa] (CF, EE, KTH, KTL, MŞ, Y). **Modern Turkish equivalents:** Tere, Kerdeme, Bahçe Teresi, Gedim, Gerdeme, Gerdime, Gördüme, Kerdime (Baytop, 1994, p.171).

Table 1. *Table of information in Nasturtium officinale W.T. Aiton - Allium porrum L. - Eremurus spectabilis M. Bieb. - Ruta graveolens L., and Lepidium sativum L.*

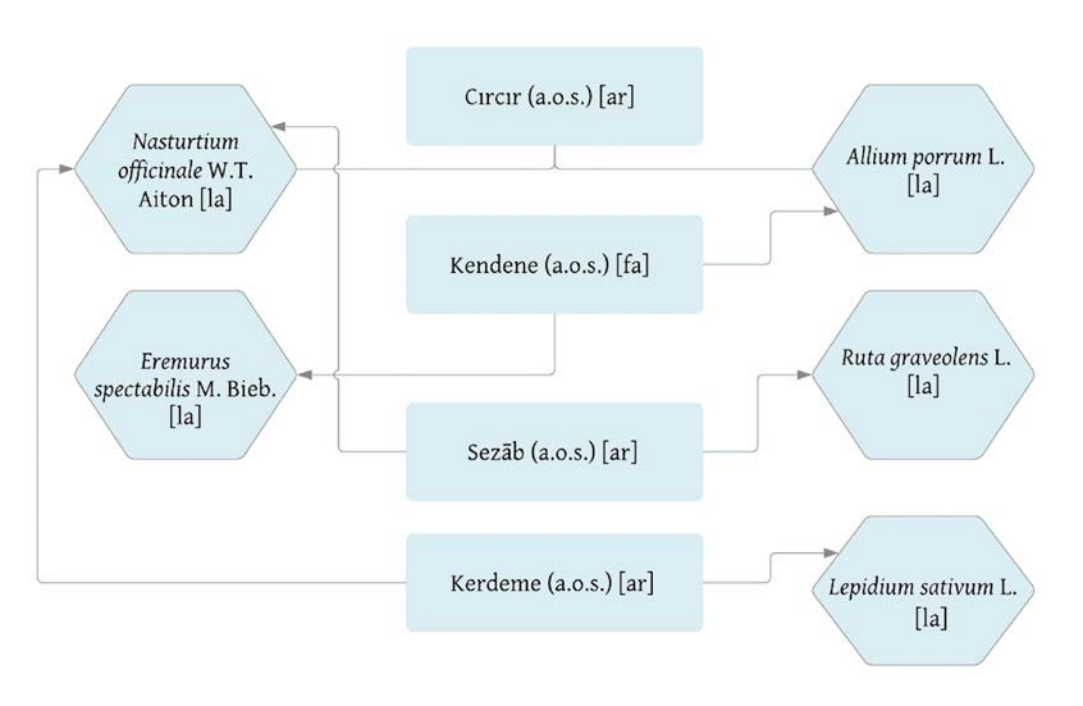

Table 2. *The term cırcır (a.o.s.), its equivalents, and any related problems concerning it in relation to the studies examined.*

Upon examining the data presented in tables 1 and 2, we encountered the following items:

1. *Cırcır* is defined with the scientific nomenclature of two different species, *Nasturtium officinale* W.T. Aiton and *Allium porrum* L.

2. *Kendene* is defined with scientific nomenclature of two different species, *Allium porrum* L. and *Eremurus spectabilis* M. Bieb.

3. *Sezāb* is defined with the scientific nomenclature of two different species, *Nasturtium officinale* W. T. Aiton and *Ruta graveolens L.*

4. *Kerdeme* is defined with the scientific nomenclature of two different species, N*asturtium officinale* W.T. Aiton and *Lepidium sativum* L.

5. Five different plant species belonging to four different families are confused directly or indirectly with each other.

In Kaya's *Envā-ı Emrāz: (Introduction-Manuscripts-Dictionary)* (Kaya, 2009), the author of the manuscript (his name is unknown) had created the sentence, *sezābı dögüp zeyt yaġıyıla ḳarışdurup ḳulaġa damzurasın* (English: *crush the 'sezāb' and mix it with olive oil to drip into the ear)*. That is, he placed a mark on the word *sezāb* and wrote *su teresi* (English: *watercress*) along the edge of the page (Kaya, 2009, p. 83). Given this expression in the original manuscript, the scientific Latin equivalent of *sezāb* is referred to as *Nasturtium officinale* W.T. Aiton (the commonly accepted equivalent of *su teresi / watercress*) in EE (Kaya, 2009). However, the term *sezāb* is defined with the Latin *Ruta graveolens* L. and Turkish equivalent *sedef otu* (English: *herb of grace*) in most of the manuscripts examined.

We can therefore deduce that the reason for the duality associated with the term *sezāb* is the expressions used by the author of the original manuscript, as far as they do not correspond with the data given in other manuscripts examined.

Terceme-i Kamilü's-Sına'a's interpreter whose name is unknown used a phrase *cırcır tohmı ya'nî kerdeme* (English: *the 'cırcır' seed, or 'kerdeme')* (Çelik, 2014, p. 156) thus describing these two terms as synonymous. On this basis, in the index of TKS (Çelik, 2014), the term *kerdeme* is defined with the Latin *Nasturtium officinale* W.T. Aiton (the commonly accepted equivalent of *cırcır / watercress*). A similar statement is mentioned in Câmi'ü'l-Fürs too: *keygir kerdeme dedikleri ot ki Arapça cırcır dirler.* (English: *keygir' is the herb 'kerdeme,' often referred to as 'cırcır' in Arabic.*) (Şahin, 2007a, p. 43). The terms *kerdeme* and *cırcır* are used as synonyms in certain studies reflecting the vocabulary of Old Anatolian Turkish. Moreover, both terms *Nasturtium officinale* W.T. Aiton and *Lepidium sativum* L. are translated as *kerdeme* in modern Turkish dictionaries (Baytop, 1994, pp. 250-251).

In general, *Lepidium sativum* L. is accepted as being the the equivalent of *bahçe teresi / kerdeme*, whereas *Nasturtium officinale* W.T. Aiton is equivalent to *yabani tere / su teresi/ su kerdemesi / cırcır*. [For example, in the Kamus of Mütercim Asım (Asım Efendi, 2009), *cırcır* is defined as *maruf sebzedür ki su teresi ve su kerdemesi tabir olunur* (English: *a well-known plant called 'su teresi' and 'su kerdemesi'*) (Önler, 1990a.] [Also, in the MŞ (Önler, 1990b, p. 49) there is a phrase that says, *su teresi / cırcır çok yemek baş agrıdur* (English: *eating too much 'su teresi / cırcır' causes serious headaches*).] However, in the manuscript of *Terceme-i Kamilü's-Sına'a*, the term *kerdeme* is used in only one sentence and with the meaning of *cırcır* (English: *watercress*) whose commonly accepted Latin equivalent is *Nasturtium officinale* W.T. Aiton. This sentence is the reason why kerdeme is mentioned with this Latin nomenclature in the index of TKS (Çelik, 2014). In addition, there are also those who use the terms *kerdeme* and *cırcır* interchangeably with the Turkish term *tere* (English: *garden cress*) (its commonly accepted Latin equivalent is *Lepidium Sativum* L.) in certain Turkish studies (Başağaoğlu & Kavalalı, 2019, p. 282).

The two terms, *gerdene* and *kerdeme* are phonetically similar. We see that because of this phonetic similarity, these two terms are confused with each other in the indexes of some works (Şahin, 2007a) and this confusion is reflected in Latin equivalents. If we refer to the phrase; *keygir kerdeme dedikleri ot ki Arapça cırcır dirler.* (English: *keygir' is the herb 'kerdeme,' often referred to as 'cırcır' in Arabic.*), we can say that the terms *cırcır* and *kerdeme* must have the same Latin equivalent according to the manuscript of CF. However, it is seen that *gerdene*'s and *cırcır*'s Latin equivalent is *Allium porrum* L. whereas *kerdeme*'s Latin equivalent is *Lepidium sativum L.* in the index of this study.

Translating the term *yabani pırasa* (English: *wild leek*) as *Allium porrum* L. and *Eremurus spectabilis* M. Bieb. in different Turkish studies, both of which are frequently cited in studies focusing on Old Anatolian medical manuscripts, seems to have caused these two terms to be confused in another relevant research. [For example, Önler (1990c) describes the title *farâsiyûn* as the equivalent of *yabani pırasa* (English: *wild leek*) or *Allium porrum* L.. On the other hand, Baytop (1994, p. 73) refers to *Eremurus spectabilis* M. Bieb. as the equivalent of the term *yabani pırasa* (English: *wild leek*) while in

reference to *çiriş*. In addition to this, we should note that most of the studies we have examined the term *kendene* is considered as being equivalent to *Allium porrum* L.

2.2. The terms *ebu cehil karpuzı / hanzal*, its equivalents, and any related problems concerning it in relation to the studies examined

Species	Equivalents
***Citrullus colocynthis* (L.) Schrad.** **[Family: Cucurbitaceae Genus: *Citrullus* Schrad.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** ebū cehil ḳarpuzı [ar+fa+tr]/ hanzal [ar] (BL, CF, CN, EM, KKN, KTH, KTL, MFT, MŞ, TA, Y); harzehre [fa] (TA); ḳulū [grc] (EE). **Modern Turkish equivalents:** Acı Karpuz, Acı elma, Ebucehil Karpuzu, Hanzal. (Baytop, 1994, p. 18)
***Ecballium elaterium* A. Rich.** **[Family:Cucurbitaceae Genus: *Ecballium* A. Rich.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** alkîm (Y); ebū cehl ḳarpuzı [ar+fa+tr] (TKS); hanzal [ar] (TKS); it hıyarı [tr+fa] (CF); ḳarġa düvlegi [tr] (EE); ḳarġa ḳavunı [tr] (CF, TKS); ḳıssāi'l-hımār [ar] (CF, TA, Y); ürüngül (tr) (CF); yaban hıyarı [fa+tr] (CF). {In EE (Kaya,2009), the definition of *Ecballium elaterium* A. Rich refers to Ebu Cehil Karpuzu.} **Modern Turkish equivalents:** Eşek Hıyarı, Acı Düğlek, Acı Dülek, Acı Düvelek, Acı Düvlek, Acı Kavun, Cırtatan, Cırtlak, Cırtlangıç, Hıyarcık, İt Hıyarı, Karga Düğeleği, Karga Düleği, Karga Düveleği, Karga İbiği, Karga Keleği, Karga Kozağı, Karga Bostanı, Karga Cevizi, Şeytan Keleği. (Baytop,1994, p.102) Ebucehil Karpuzu (URL-4, Kaya, 2009, p.208), Karga Kavunu (Şahin, 2007, p. 598).

Table 3. *Table of information on Citrullus colocynthis (L.) Schrad. and Ecballium elaterium A. Rich.*

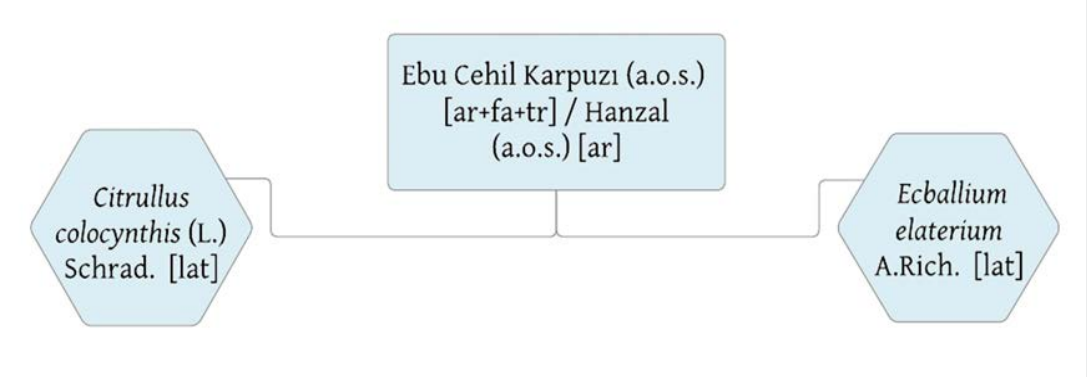

Table 4. *The terms ebu cehil karpuzı / hanzal, their equivalents, and any related problems concerning them in relation to the studies examined.*

In the studies we had examined, we found that the terms *ebu cehil karpuzı* (a.o.s.) and *hanzal* are defined with scientific nomenclature of two different species of the same family, *Citrullus colocynthis* (L.) Schrad. and *Ecballium elaterium* A. Rich.

One of the terms used in Turkish folk nomenclature as the equivalent of the *Citrullus colocynthis* (L.) Schrad. and *Ecballium elaterium* A. Rich., which both belong to the *Cucurbitaceae* family, is *ebucehil karpuzu*. This has led to an uncertainty about these two Latin terms in the relevant studies. [Önler (2004), in the index of his study, makes the following statement upon defining the lexical entry *ḳarġa düglegi, ḳarga dölegi*: *ebucehil karpuzu (Ecballium elaterium); 'zirāvend-i tavîl' and 'ebu cehil ḳarpuzı' are also common in the manuscripts of the period as equivalents. In 'TDK Tarama Sözlüğü' (URL-7), this term is available with the nomenclature 'karga düvlegi, karga düglegi' and it was described as 'Ebucehil karpuzu, acı hıyar, eşek hıyarı'*. However, in studies such as CF (Şahin, 2007a) and KTH (Doğan, 2015), the equivalent of the same term is *Citrullus colocynthis*].

Moreover, the unknown interpreter of the original manuscript of Terceme-i Kamilü's-Sına'a used the phrase *hanzal yā'nî ebū cehl ḳarpuzı* (English: *hanzal, also known as, ebū cehl ḳarpuzı*) (Çelik, 2014, p. 156), stating that the terms *hanzal* and *ebū cehl ḳarpuzı* have the same meaning. In another part of the manuscript, he wrote *...bir devāyıla kim düzilmiş ola şahm-ı hanzaldan yā'nî ḳarġa ḳavunından* (English: *...with a medicine made from şahm-ı hanzal, also known as ḳarġa ḳavunı)* (Çelik, 2014, p. 151). Here, he has stated that he accepts the term *şahm-ı hanzal* which means *the inner part of the ebū cehl ḳarpuzı* as mentioned in the sources like MŞ (Önler, 1990c) and Y (İbn-i Şerif, 2017) and the term *ḳarġa ḳavunı* which is equivalent to the Latin term *Ecballium elaterium* A. Rich. according to the Old Anatolian Turkish based studies like CF (Şahin, 2007a), as synonyms. Based on this, in the index of TKS (Çelik, 2014), the terms *ebu cehil karpuzı* and *hanzal* are shown as the equivalents of the Latin *Ecballium elaterium* A. Rich.

Therefore, we can infer that the expressions used by the authors and the interpreters of the original manuscripts about the term in question stands out as the most important factor behind the emerging duality of these terms.

2.3. The term *hayyü'l-ʿālem / hayy-i ʿālem (a.o.s.)*, its equivalents, and any related problems concerning it in relation to the studies examined

Species	Equivalents
***Fumaria officinalis* L.**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** beg börki [tr] (CF, EM, MŞ); cemācim [ar] (CF); cercir [ar] (TKS); emîr-i ʿāşiḳān [ar] (CF); hayyü'-l ʿālem [ar] (CF) ; mahmūr çiçegi [ar+tr] (CF); sultān börki [ar+tr] (CF); şāhendec [fa] (KTH); şāhendecî [fa] (KTH); şāh-tere [fa] (KTH, KTL, M, MŞ, TA,TKS); şāh-terec [fa] (CF, CN, KTH, TKS); şāhterecî [fa] (KTH); şehtere [fa] (CF,CN,EE); şeyrenç-i hindî [fa] (CF); şeytarac [fa] (CF); şeytārec [fa] (K); şeyterec-i hindi [fa] (CF); şezec [fa] (CF); yūsuf güli [he+fa+tr].

[Family: Papaveraceae **Genus: *Fumaria* L.** **(URL-1, URL-2, URL-3)**	**Modern Turkish equivalents:** Şahtere, Tilki Kişnişi (Baytop, 1994, p. 255).
***Plantago major* L.** **[Family: Plantaginaceae Genus: *Plantago* L.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** hayyu ʿālem (a.o.s.) [ar] (CF, EM, KTH, KTL, MŞ, TKS); ḳuzu dili [tr] (TKS); lisānü'l-hamel [ar] (CF, KTH, MŞ, Y); pendānūrū [grc] (EE); siŋerlü [tr] (EE); siñirli [tr] (KTL); siñirlü [tr] (CF, EE, KTH, KTL, Y); siŋüre [tr] (KTH); siŋirlüce [tr] (KTH); siŋirlüçe [tr] (KTH). {In some of the studies, *Plantago major* L. and *Plantago media* L. were given together as equivalents, while in some, only one of these equivalents was preferred.} {In addition, in some studies, the Latin *Plantago* has been used alone as an equivalent of Turkish term siñirli (a.o.s.). This term is not a species name but a genus name that covers species names related to itself.} **Modern Turkish equivalents:** Bağa Yaprağı, Beşdamar Otu (Baytop, 1994, p. 41).
***Plantago media* L.** **[Family: Plantaginaceae** **Genus: *Plantago* L.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** hayyu ʿālem (a.o.s.) [ar] (MŞ, TKS); ḳuzu dili [tr] (TKS); lisānü'l-hamel [ar] (MŞ, Y). {In some studies, *Plantago major* L. and *Plantago media* L. were given together as equivalents, while in some, only one of these equivalents was preferred.} {In addition, in some studies, the Latin Plantago has been used alone as equivalent of Turkish term siñirli (a.o.s.). It should be reminded that this term is not a species name but a genus name that covers species names related to itself.} **Modern Turkish equivalents:** Şimşekyaprağı (URL-5).
***Rhodiola rosea* L.** **(synonym of**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** ābrūn [grc] (TA); hayy [ar+fa] (TA); hayy-ı ʿālem [ar+fa] (TA); hayyü'l-ʿālem [ar] (TA); ḳaya [tr] (TA); ḳaya ḳoruġı [tr] (TA);

Sedum roseum (L.) Scop.) **[Family: Crassulaceae** **Genus: *Rhodiola* L.]** **(URL-1, URL-2, URL-3)**	lisānü'l- hamel [ar] (TA); uruz otı [tr] (TA). **Modern Turkish equivalents:** Altın Kök (Erkoyuncu & Yorgancılar, 2015, p. 71).
***Sedum acre* L.** **[Family: Crassulaceae** **Genus: *Sedum* L.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** ḳaya ḳoruġı [tr] (TBA, CF). {The spelling is *Cedum acre* [la] in TBA and CF but the correct spelling should be *Sedum acre* L. [la]}. **Modern Turkish equivalents:** Acı Damkoruğu. (URL-6)

Table 5. *Table of information on Fumaria officinalis L.- Plantago major L.- Plantago media L.- Rhodiola rosea L., and Sedum acre L.*

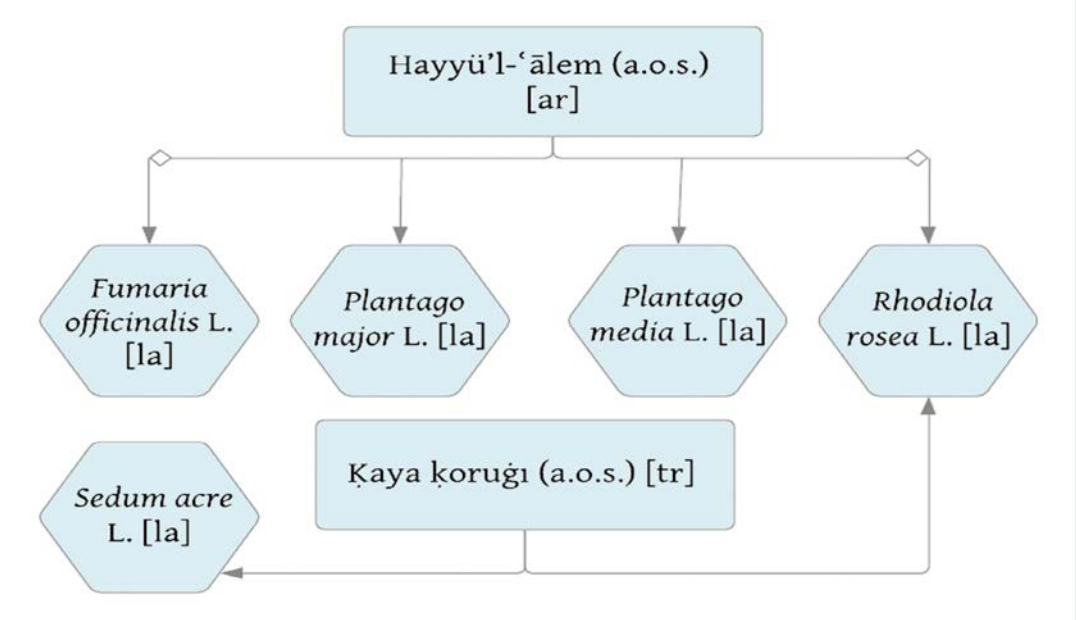

Table 6. *The term Hayyü'l-ʿālem (a.o.s.), its equivalents, and any related problems concerning it in relation to the studies examined.*

Upon examining the data presented in tables 5 and 6, we encountered the following items:

1. *Hayyü'-l-ʿālem* is defined with the scientific nomenclature of four different species, *Fumaria officinalis* L., *Plantago major* L., *Plantago media* L. and *Rhodiola rosea* L.

2. *Ḳaya ḳoruġı* is defined with scientific nomenclature of two different species, *Sedum acre* L. and *Rhodiola rosea* L.

3. Five different plant species belonging to 3 different families are confused with each other.

In the dictionary part of CF (Şahin, 2007a), the lexical entry *hayyü'-l-ʿālem* is shown with the equivalent of *Plantago major* L. while in the Latin Index of this work it is shown with the equivalent of both *Plantago major* L. and *Fumaria officinalis* L. (Şahin, 2007a, pp. 582-599).

Phrases such as *ābrūn ḥayy-i ʿālemdür ol uruz otıdur* (English: *'ābrūn' is 'ḥayy-i ʿālem', so 'uruz.')* and *ḥayyü'l-ʿālem ḳaya ḳoruġıdur* (English: *'ḥayyü'l-ʿālem' is 'ḳaya ḳoruġı'*) are mentioned in the original manuscript of Sabuncuoğlu Şerefeddin's Terceme-i Akrabâdîn (Doğan, 2009, p. 444-449). Here, *ḥayyü'l-ʿālem* is defined by the Latin scientific term *Rhodiola rosea* L., which is seen as the equivalent of the term *ḳaya ḳoruġı* in the same manuscript's index. *Rhodiola rosea* L. belongs to the *Crassulaceae* family and *Sedum roseum* (L.) Scop. is its synonym. When we examine CF (Şahin, 2007a) and TBA (Önler, 1990a), we see that the equivalent of *ḳaya ḳoruġı* is *Sedum acre L.* in this works, which also belongs to the *Crassulaceae* family. In Turkish folk nomenclature, *kaya koruğu* (a.o.s.) is used as a general nomenclature given to *Sedum* species (Baytop, 1994, p. 163). *Rhodiola rosea* L./ *Sedum roseum* (L.) Scop. and *Sedum acre* L. are two different members of the *Sedum* species and cause a duality because the information about the

general nomenclature is not specified in the studies. In some of the indexes we examined, we see that *hayyü'-l-ʿālem* (a.o.s.) and its synonyms are associated with the Turkish *sinir otu* and *bağa*, which are the general nomenclature of *Plantago* species. (The duality of *Plantago major* L. / *Plantago Media L.* is also related to this general nomenclature.) The same term is associated with the Turkish *kaya koruğu*, which is the equivalent of Latin *sedum* species in other indexes. These discrepancies take root in the expressions in the original manuscripts and are one of the main reasons for the confusions.

2. 4. The term *hardal* its equivalents, and any related problems concerning it in relation to the studies examined

Species	Equivalents
***Brassica nigra* (L.) W.D. J. Koch (Basionym: *Sinapis nigra* L.)** **[Family: Brassicaceae Genus: *Brassica* L. (URL-1, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** hardal [ar] (CF, CN, K, KTH). **Modern Turkish equivalents:** Hardal Otu, Siyah Hardal, Karahardal (Birer, 1986, p. 47).
***Brassica alba* (L.) Rabenh. (Synonym of Accepted Name *Sinapis alba* L.)** **[Family: Brassicaceae Genus: *Sinapis* L.] (URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** hardal [ar] (EE, K, KTL, M, MŞ, TA, TKS, Y). **Modern Turkish equivalents:** Hardal Otu, Akhardal, Beyaz Hardal, Turp Otu (Birer, 1986, p. 47).
***Sinapis arvensis* L.** **[Family: Brassicaceae Genus: *Sinapis* L.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** hardal [ar] (EE, K, KTL, M, MŞ, TA, TKS, Y); îsūpū [grc] (EE). [The spelling is Snapis arvenis / Snapis alba in some of the mentioned medical manuscript studies. They should be written as *Sinapis arvensis* L./*Sinapis alba* L. (URL-1)] **Modern Turkish equivalents:** Hardal Otu, Turp Otu, Acırga, Eşek Turpu, Manamıh, Manamuh, Mananık, Mananik, Tüppek, Yabanî Hardal (Baytop, 1999, p. 129).
***Raphanus raphanistrum* L.** **[Familya Brassicaceae Genus: *Raphanus* L.] (URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** ficil [ar] (TA); hardal [ar] (EM). **Modern Turkish equivalents:** Turp Otu, Hardal Otu (Baytop 1994: 270) Eşek Turpu, Karaturp, Karamancar, Yabani Turp (URL-5).

Table 7. *Table of Information on Brassica nigra (L.) /Sinapis nigra L.)- Brassica alba (L.)/ Sinapis Alba L.) - Sinapis arvensis L. and Raphanus raphanistrum L.*

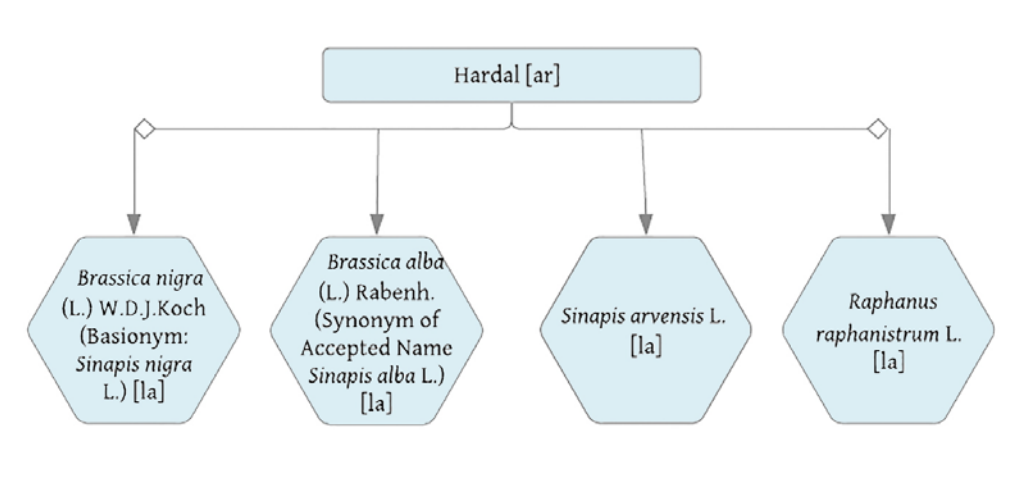

Table 8. *The term hardal its equivalents, and any related problems concerning it in relation to the studies examined.*

Upon examining the data presented in tables 7 and 8, we encountered the following items:

1. *Hardal* is defined with the scientific nomenclature of four different species, *Brassica nigra* (L.) /*Sinapis nigra* L. - *Brassica alba* (L.)/ *Sinapis alba* L. - *Sinapis arvensis* L. and *Raphanus raphanistrum* L.

2. Four different plant species belonging to the same family are confused either directly or indirectly with each other.

It is known that when it comes to species of the same family, a nomenclature can be used simultaneously for several species, especially in the regional dialects. In Turkish folk nomenclature, the term *hardal* can be used as the equivalent of the four different scientific Latin terms mentioned above, which has led to discrepancies. In fact, certain distinctive equivalents are also used in folk nomenclature for this species: *karahardal* as the equivalent of *Brassica nigra (L.) /Sinapis nigra L.*; *akhardal* as the equivalent of *Brassica alba* (L.)/*Sinapis alba* L.; *yabanî hardal* as the equivalent of *Sinapis arvensis* L.; and *yabanî turp* as the equivalent of *Raphanus raphanistrum* L. Although in some manuscripts these are mentioned separately, the number of manuscripts that refer to these terms as equivalents of one another is not few at all.

Additionally, the term *hardal* is also used as the equivalent of *Nasturtium officinale* W. T. Aiton, whose name is stated in the section above related to the term *cırcır*, as well as is indicated in studies written in both in Old Anatolian Turkish (Bekmez, 2009; Doğan, 2015) and modern Turkish (Baytop, 1994, p. 250).

Moreover, in studies such as those by MŞ (Önler, 1999, p. 105.) and EM (Canpolat & Önler, 2007, p. 129), the Latin *Armoracia rustica* Schur is indicated as the equivalent of the Turkish *eşek turpu* (a.o.s.), which is mentioned in other sources as one of the equivalents of the Latin *Sinapis arvensis* L. (URL-5). This suggests that *eşek turpu* (a.o.s.) may also cause confusion. For example, the original manuscript of EM (Canpolat & Önler, 2007, p. 20) gives the following phrase: *eşek turbı ki arabca kısāü'l-hımar dirler.* (English: E*şek turbı, also referred to as 'kısāü'l-hımar' in Arabic.*). However, other studies

such TA (Doğan, 2009) and Y (İbn-i Şerif, 2017) explain *kısāü'l-hımar* using two different Turkish terms: *eşek hıyarı* and *dülcek dibi*. Y's (İbn-i Şerif, 2017) manuscript points to the phrase *kısāü'l-hımār ki Türkçe dölcek dibi derler* (English: *kısāü'l-hımār, also referred to as 'dölcek dibi' in Turkish)* (İbn-i Şerif, 2017, p. 429). Such expressions caused the term *kısāü'l-hımār* to be associated in EM (Canpolat & Önler, 2007) with *Armoracia rustica* schur, whereas in Y (İbn-i Şerif, 2017) it is associated with *Ecballium elaterium* A. Rich.

Furthermore, both *Ecballium elaterium* A. Rich and *Sinapis arvensis* L. are already confused with other terms. Indirectly, these terms also have a share in the confusion associated with the other terms mentioned in the relevant topics.

What we have identified is important in that it shows us that the problem of the Latin scientific equivalents of plant names in studies on medical manuscripts is a combination of more than one complex issue. What is more, we obtained our findings from a sample that compared only a handful studies. Further research will shed further light on these complexities.

2.5. The term *kündüs* its equivalents, and any related problems concerning it in relation to the studies examined

Species	Equivalents
***Gypsophila struthium* Loefl.** **[Family: Caryophyllaceae Genus: *Gypsophila* L.] (URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** aġu ḳunduzı [tr] (MŞ); çoġan [tr] (KTL, MFT, TA, TKS); kündüs [ar] (EM, M, MFT, MŞ, TA, TKS); südr [ar] (EM). **Modern Turkish equivalents**: Çöven, Çoğan, Kündüs (Önler, 1990a).
***Nerium oleander* L.** **[Family: Apocynaceae Genus: *Nerium* L.] (URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** aġu aġacı [tr] (CN, K, KTH, KTL, TKS, Y); aġu ḳunduz [tr] (CF); dıflî [ar] (TKS); kündüs [ar] (CF). **Modern Turkish equivalents:** Zakkum, Ağan, Ağı Çalısı, Ağı Çiçeği, Ağı Dalı, Ağu, Avu, Ayan, Fattak, Zekkum. (Baytop, 1994, p. 289).
***Saponaria officinalis* L.** **[Family: Caryophyllaceae Genus: *Saponaria* L.] (URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** çoġan [tr] (CN, KTH, KTL); uşnān [ar] (KTH). **Modern Turkish equivalents:** Sabun Otu, Sabun Çiçeği, Köpürgen, Tahdik Otu (Baytop, 1994, p.232) Çöven Otu, Şam çöveni (Önler, 1990a).

Table 9. *Table of Information on Gypsophila struthium Loefl. - Nerium oleander L. and Saponaria officinalis L.*

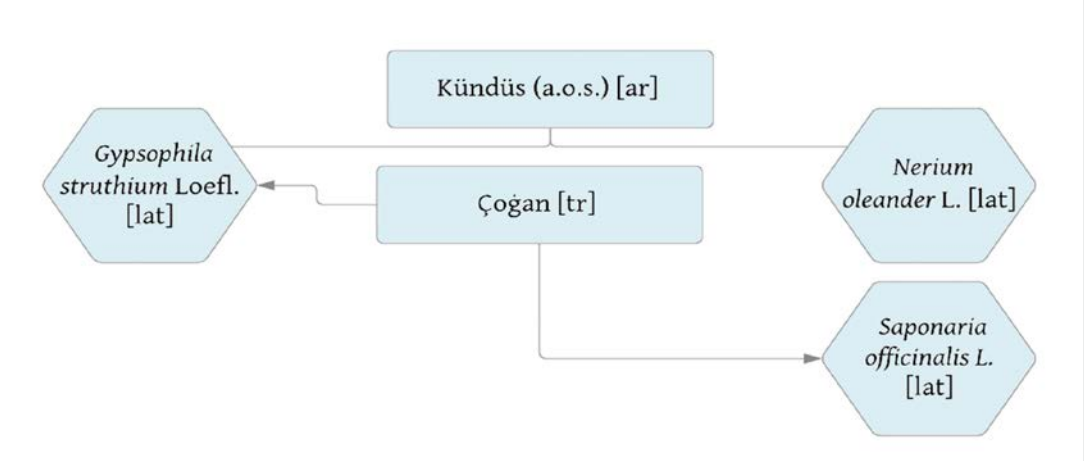

Table 10. *The term kündüs its equivalents, and any related problems concerning it in relation to the studies examined.*

Upon examining the data presented in tables 9 and 10, we encountered the following items:

1. *Kündüs* is defined with the scientific nomenclature of two different species, *gypsophila Struthium* loefl. and *Nerium oleander* L.

2. *Çoġan* is associated with the scientific nomenclature of two different species, *Saponaria officinalis L.* and *Gypsophila struthium* Loefl.

3. Three different plant species belonging to 2 different families are confused directly or indirectly with each other.

In CF's manuscript (Şahin, 2007a, p. 54), the term *kündüs* is defined through the following phrase: *aġu ḳunduz didükleri ot* (English: *the herb they refer to as 'aġu ḳunduz'*). The term *aġu ḳunduz* in the phrase is confused with the term *aġu aġacı* (Şahin, 2007a). For this reason, the term *Nerium oleander* L. (the accepted Latin scientific equivalent of the term *aġu aġacı*) is used to describe both *kündüs* and *aġu ḳunduz*. For example, MŞ's manuscript (Önler, 1990b, p. 142) contains the phrase *kündüs ki aġu ḳunduzı dėrler* (English: *'kündüs', also known as 'aġu ḳunduzı'*). However, the study's index discernes this difference, whereby *aġu aġacı* is accepted as the equivalent of the Latin *Nerium oleander* L., whereas *aġu ḳunduzı* is accepted as the equivalent of the Latin *Gypsophila struthium* Loefl.

The term *çoġan* is used as a general name of the species of *Gyspsophila* L. in Turkish folk nomenclature (Baytop, 1994, p. 77). The saponin rich and economic taxa of these genus were known among the public as çöven (< çoġan) (Özçelik & Yıldırım, 2011, p. 57). This information has been overlooked by various researchers and has led to several complexities about the subject. For example, TKS's manuscript (Çelik, 2014) mentions some species of this genus, such as *ısfahan çoġanı*, *necrān çoġanı* and *pārisî çoġan*. Although in the index of this study (Çelik, 2014), the lexical entry *çoġan* is shown as the equivalent of *Gypsophila struthium* Loefl., we observe that *çoġan* refers to the general nomenclature of the *Caryophyllaceae* species, or at least a few related species mentioned in this manuscript too.

Both *Saponaria officinalis* L. and the species of *Gyspsophila* belong to the *Caryophyllaceae* family and *Saponaria officinalis* L. has a foaming characteristic like *Gypsophila struthium* Loefl. For this reason, these two species have often been confused, resulting in the emergence of the duality detected above.

2.6. The term *muḳl (a.o.s.)* its equivalents, and any related problems concerning it in relation to the studies examined

Species	Equivalents
***Boswellia carteri* Birdwood (Synonym of Accepted Name *Boswellia sacra* Flueck.)** **[Family: Burseraceae Genus: *Boswellia* Roxb. ex Colebr.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** muḳl [ar] (CF, EM, KTH, M, MŞ, TA); eflāṭūn [grc] (TA); maḳal [ar] (Y). {In some studies, it has been observed that it is written as Boswelia carteri, these errors should be corrected}. {Ak Günlük: Boswelia [la] (CN, EE, M, MŞ, TKS, Y); Cortex boswelia [la] (TKS)}. **Modern Turkish equivalents:** Akgünlük (Başer, 2018, p. 30).
***Liquidambar orientalis* Mill.** **[Familya Altingiaceae Genus: *Liquidambar* L.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** günlük [tr] (KKN, KTL); ışṭarek [ar] (TA); mîʿa [ar] (CN, TA); mi̱ʿa-ı sāʾile/sāʾili̱ [ar+fa] (TA, TKS); muḳıl/muḳul [ar] (TKS); sığala (MŞ). **Modern Turkish equivalents:** Günlük, Kara Günlük, Sığala Ağacı, Sığla Ağacı (Baytop, 1994, p. 125).
***Acacia seyal* Delile** **[Family: Fabaceae Genus: *Vachellia* Wight & Arn.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** mia'-ı sayıla [ar+fa] (MFT). **Modern Turkish equivalents:** Kitre ağacı, Sayal (Güven, 2005, p. 430).
***Styrax officinale* L. (Accepted Name: *Styrax officinalis* L.)** **[Family: Styracaceae Genus: *Styrax* L.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** günlük [tr] (K). {Kara Günlük: Cortex styracis [la](CN, EE, M, MŞ, TKS, Y); Styrax officinale [la] (K).} **Modern Turkish equivalents:** Ayı Elması, Çakıldak, Tesbi, Tesbih Ağacı, Tespihlik, Tespi, Yaban Ayvası, Zamzalak, Zanzalak (Baytop, 1994, p. 37), Karagünlük (URL-6).
***Commiphora opobalsamum* (L.) Engl. (Synonym of Accepted Name *Commiphora gileadensis* (L.) C.Chr.)** **[Family: Burseraceae Genus: *Commiphora* Jacq.]** **(URL-1, URL-2, URL-3)**	**Equivalents found in the indexes and dictionaries of the aforementioned Old Anatolian Turkish medical manuscripts:** belesān [ar] (MŞ); muḳl [ar] (MFT). {The spelling is *Commiphora Opobalsamun* in some of the mentioned medical manuscript studies but the correct spelling should be *Commiphora Opobalsamum* (L.) Engl.}. **Modern Turkish equivalents:** Mekke Pelesengi, Balasan (Güven, 2005, p. 433).

Table 11. Table of Information on *Boswellia carteri* Birdwood - *Liquidambar orientalis* Mill. - *Acacia seyal* Delile - *Styrax officinale* L. and *Commiphora opobalsamum* (L.) Engl.

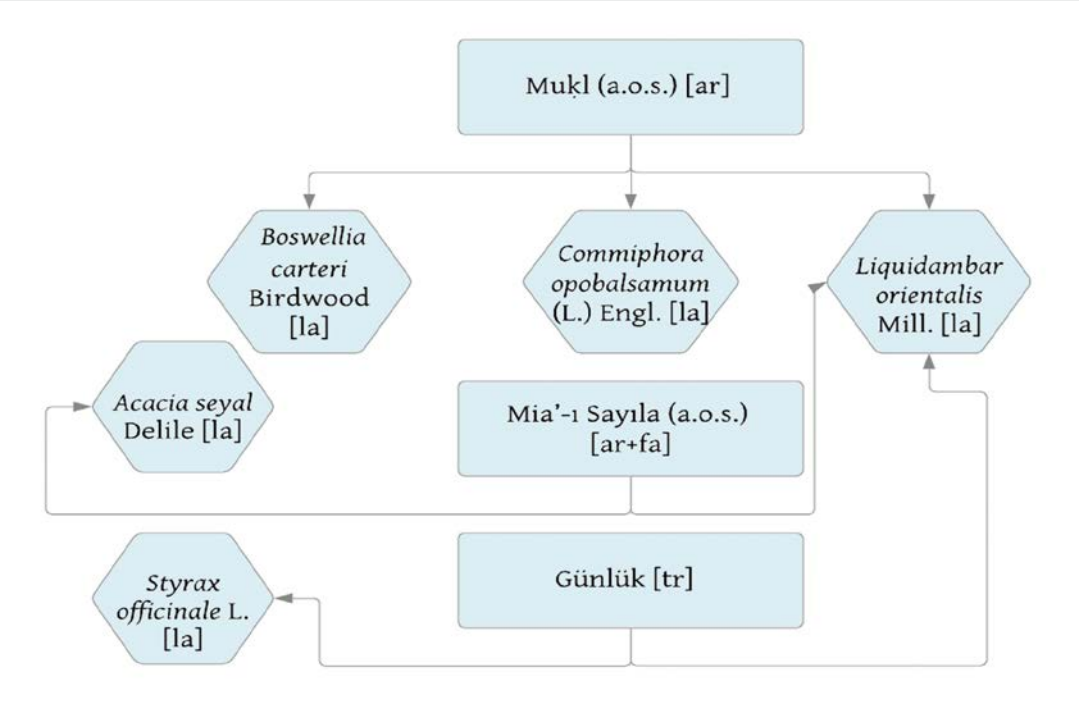

Table 12. *The term muḳl (a.o.s.) its equivalents, and any related problems concerning it in relation to the studies examined.*

Upon examining the data in tables 11 and 12, we encountered the following items:

1. *Muḳl* is defined with the scientific nomenclature of three distinct species: *Boswellia carteri* Birdwood, *Liquidambar orientalis* Mill. and *Commiphora opobalsamum* (L.) Engl.

2. *Mia'-ı Sayıla* is defined with scientific nomenclature of two distinct species: *Liquidambar orientalis* Mill. and *Acacia seyal* Delile.

3. In some studies, *günlük* is used as a general nomenclature to represent species of the genera *Styrax* L. or *Boswellia* Roxb. ex Colebr. In other studies, the definitions are particularized using species names such as *Liquidambar orientalis* Mill., *Styrax officinale* L.

4. Five different plant species belonging to 4 different families are confused directly or indirectly with each other.

The *Review Through Rules of Scientific Nomenclature and Travelogues* section of Okan Ürker's (2014) doctoral thesis (*Oriental Sweetgum Forests in the Context of Environmental Ethics*) gives us competent information about the above confusions.

In that study, Ürker also stated Carl Linnaeus's scientific nomenclature system was not yet known or applied, leading to further confusion about the nomenclature of species. What has resulted is that the nomenclature of various species belonging to the Anatolian genus *Boswellia* sp. Roxb. ex. Colebr. began to be confused with the species referred to by the Turks of Anatolia as *sığla, sığala, suvlag* (*Liquidambar orientalis* Mill.),

whose usage characteristics are quite like *Boswellia* sp. Roxb. ex. Colebr.. The same study moreover indicated that the species belonging to *Boswellia* sp. Roxb. ex. Colebr. had spread naturally, especially in the North-Northeast Africa, East Africa, the Arabian Peninsula, and the Indian Subcontinent, and was also well known among the Ancient Egyptians, the Arabs, and Hindus, Jews, Christians, Muslims, and Buddhists.

These plants (species of the genus *Boswellia* sp. Roxb. ex. Colebr.) are not similar in any way to *Liquidambar orientalis* Mill. in terms of their appearance, but are used for similar purposes, such as burning incense, especially in religious rituals preventing health problems such as asthma and stomach ailments, as well as utilizing the pleasant smell of them in the field of cosmetics because of their components being similar. It's observed that *Liquidambar orientalis* Mill. had also been known as sığla/sığala and used by authorities such as Evliya Çelebi in Anatolia. On the other hand, many species of the genus *Boswellia* sp. Roxb. ex. Colebr. have been commonly referred to as günlük, buhur, or tütsü in Anatolia during the Seljuk and Ottoman Empire ever since the time of Avecenna. It is also known that it had been used in religious rituals, funerals, and in the saving of a person from incantation, as an extension of eastern medicine. (Pamuk, 1986) "*When we examine the etymological origins, it is clear to us that the term 'günlük' and 'günlük ağacı' had been originally used in Old Turkish to describe species belonging to the genus Boswellia sp. Roxb. ex. Colebr.*" (Ürker, 2014).

The same study, in mentioning the confusion the term *Styrax officinale* L. with these terms, states that another erroneous case regarding the naming of species is that the English nomenclature representing the species is quite confusing and varied. For example, when we search for 'Oriental Sweetgum' via keywords such as 'Storax', 'Incense', 'Styrax' in Holland's 1634 English translation of Pliny's 'Natural History', we find many different species and meaning. According to this, 'storax' and 'frankincense' are more likely to describe '*Boswellia* sp. Roxb. ex. Colebr.', while 'styrax' describes '*Styrax officinalis* L.' (Holland, 1634). Satisfactory and clear data on the *'Oriental Sweetgum Tree'* (*Liquidambar orientalis* Mill.) is not available in this resource. While the terms *Storax* or *Levant Storax* are commonly used for *Liquidambar orientalis* Mill. in English before the 18th century, the terms *Sweetgum, Oriental Sweetgum, Levant Sweetgum,* and *Styrax* have been used as we approach from this century to the present. The term *Styrax*, another of the English terms used for *sığla* as well as the term *Storax*, emerged more recently when the *American Sweetgum Tree* was named *Liquidambar styraciflua* L. because of binomial naming. However, especially in ancient times, the term was used for another species called *Styrax officinalis* L. (*Ayı Fındığı* in Turkish) in the records of natural historians such as Pliny. In such cases it has caused various difficulties because it has been mentioned as unnoticed by botanists who continue their research in Turkey (Ürker, 2014).

It can be determined from the sample discussed in this article that the terms such as *Commiphora opobalsamum* (L.) Engl. and *Acacia seyal* Delile which are not stated to be confused with the related terms in Ürker's study may cause indirect or direct confusions related to the mentioned terms for similar reasons. As a result of such complexities, there is a complete irregularity in many indexes and dictionaries of Old

Anatolian Turkish medical manuscripts regarding the scientific Latin terms and their equivalents. Even in different sections of the same studies, contradictory information can be found together.

3. CONCLUSION AND SUGGESTIONS

The sample obtained from the indexes and dictionaries of the medical manuscript studies examined provides us with important data about what exactly causes the confusion in lining Old Anatolian plant names with their proper Latin equivalents. Accordingly:

1. As we have mentioned above with regards to the formation of Old Anatolian Turkish medical terminology, we can say that Islamic civilization had translated almost all of what Greek civilization had accumulated scientifically into Arabic, and that that translated knowledge had eventually reached the Ottomans. This has led to the fact that plant terms, like other medical terms, have more than one equivalent in medical manuscripts written in Old Anatolian Turkish, which in turn leads to many complexities about that. One of the main reasons why these complexities are reflected in the indexes and dictionaries of Old Anatolian Turkish medical manuscripts is because some of these equivalents incompatible with each other which have been put forth by authors of the original manuscripts.

2. Throughout the Turkish-speaking regions, we see that the same plant can have multiple different names, and that different plants can be classed using one common umbrella term across different regions as well. The confusion caused by these discrepancies has been transferred to the basic sources related to Turkish plant terms. Researchers referring to these sources have indirectly maintained this confusion, and this is reflected in the indexes and dictionaries of Old Anatolian Turkish medical texts as a lexicological problem.

3. As we have stated above, plants that are often defined by locals under a single name are often defined by botanists as a taxon that can differ according to the colour of the plant's flower, the appearance of its leaves, and the condition of its roots, etc—hence separate names. The fact that different taxa are defined with the same names in folk nomenclature causes some confusion when it comes to establishing the correct Latin equivalents for indexes and dictionaries of Old Anatolian Turkish medical manuscripts.

4. Given that binomial scientific naming system was not known before the 1700s, scientific manuscript writers would often base their nomenclature on folk terminology, thus causing mass inconsistencies.

5. The problems caused by excerpts from the basic studies of science, most of which are in Greek, are based on translation errors, especially after they have been translated into English. In addition to this, English nomenclature is quite complex and varied, which in turn exacerbates these errors. The indexes and dictionaries of Old Anatolian Turkish medical manuscripts, often rely on modern studies that are riddled with inaccuracies as sources and can sustain these deficiencies by reflecting them in their respective languages.

6. The incorrect use of the binomial nomenclature system, which had been created to eliminate inconsistencies in plant names, in fact leads to even more new inconsistencies.

7. Many researchers who had prepared the indexes and dictionaries of the Old Anatolian Turkish medical manuscripts appear to have had confused certain plant names whose folk nomenclature are lexically similar, and then they reflected these confusions in the data on the Latin equivalents of this terms.

8. Regarding the confusing of different taxa with each other, we observed that the similarity of the appearance of the species increased the margin of error.

9. We also observed that the similarities between the usage areas of the species and their medical characteristics both pose another crucial factor in increasing the margin of error.

10. The lack of careful study on Old Anatolian Turkish by researchers, and the fact that random orientations have led to problems in terms of historical fiction should also both be considered as an important factor behind the lexicological inaccuracies.

11. Only four of the fourteen studies that we examined in relation to medical terms from Old Anatolian Turkish period have a Latin index. This is major obstacle if we are to access proper scientific terminology, granted their importance in medical manuscript research. Future studies need to give more importance to Latin terminology when creating indexes.

12. In this study, we determined inconsistencies with the Turkish equivalents of 24 Latin plant names in Old Anatolian Turkish medical texts that we examined within the sample. We extracted errors that caused inconsistencies and brought to attention correct equivalents of plant names whose Latin equivalents were given incorrectly in some works.

13. Such inconsistencies not only mislead scholars but also present them numerous challenges when it comes to further research. To avoid this, we need to look and treat the issue of plant names through an interdisciplinary lens.

Abbreviations

Abbreviations	Instructions
a.o.s.	And Other Spellings
ar	Arapça [Arabic]
CF	Câmi'ü'l-Fürs Örneğinde XVI. Yüzyıl Bitki İsimleri [Plant Names In XVI.st Century In Model Of Cami'ü'l-Fürs]
CN	İbrahim Bin Abdullah'ın Cerrāh-nāme -Alā'im-i Cerrāhîn- Adlı Eseri (Giriş-Metin Sözlük) [İbrahim Bin Abdullah's Work Named Cerrāh-nāme -Alā'im-i Cerrāhîn (Introduction-Manuscripts-Dictionary)]
EE	Envā-ı Emrāz: İnceleme- Metin- Dizin [Envā-ı Emrāz: (Introduction-Manuscripts-Dictionary)]
EM	Edviye-i Müfrede
fa	Farsça [Persian]
grc	Yunanca [Greek]
K	Kemāliyye
KKN	Hekim Mehmed Nidâî'nin Manzum Tıp Risâlesi Keyf-i Kitâb-ı Nidâî [Mehmed Nidâî's Verse Medicine Treatise, Keyf-i Kitâb-ı Nidâî]
KTH	Kitāb-ı Tıbb-ı Hikmet (İnceleme-Metin-Dizin) [Kitāb-ı Tıbb-ı Hikmet (Introduction-Manuscripts-Index)]
KTL	Kitâb-ı Tıbb-ı Latîf (72b-151b) İnceleme-Metin Sözlük [Kitâb-ı Tıbb-ı Latîf (72b-151b) (Introduction-Manuscripts-Dictionary)]
la	Latince [Latin]
M	Müntehib
MFT	Abdulvehhâb bin Yusuf'un Müntahab-ı Fi'tTıbb'ı (Dil İncelemesi-Metin-Dizin) [Abdulvehhâb bin Yusuf's Müntahab-ı Fi'tTıbb (Language Review-Manuscripts-Index)]
MŞ	Müntahab-ı Şifā II Sözlük [Müntahab-ı Şifā II Dictionary]
TA	Terceme-i Akrabâdîn Sabuncuoğlu Şerefeddin (Giriş-İnceleme-Metin-Dizinler) [Terceme-i Akrabâdîn Sabuncuoğlu Şerefeddin (Introduction- Analysis-Manuscripts, Indexes)]
TBA	XIV.-XV. Yüzyıl Tıp Metinlerinde Türkçe Bitki Adları [Turkish Plant Names in 14th-15th Century Medical Manuscripts]
TKS	Terceme-i Kāmilü's-Sınā'a (Giriş-İnceleme-Metin-Dizin) [Terceme-i Kāmilü's-Sınā'a (Introduction-Analysis-Manuscript-Index)]
tr	Türkçe [Turkish]
Y	Yādigār

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