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THE CREATION AND INNOVATION OF MEDIEVAL
HEBREW MEDICAL TERMINOLOGY:
SHEM TOV BEN ISAAC, SEFER HA-SHIMMUSH*

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INTRODUCTION

During the Middle Ages when Linnaeus had not yet been born and there was no uniform binary system for identifying plants and herbs, the risk of a doctor administering the wrong drug was certainly very real. Such a risk would be especially acute at a time when a doctor would move to and settle in a different country, in a different linguistic environment. Jewish doctors were especially confronted with this problem when several of them emigrated in the wake of the Berber invasions of the Almoravids and Almohads into southern Spain in the eleventh and twelfth centuries, to the Christian northern part of Spain and to southern France, from a society, where Jews used and understood Arabic next to Hebrew and Romance, to a society where they lost their knowledge of Arabic. Because of this shift in languages an

* Note: In this article, which is an adapted version of part of the introduction to the edition of Shem Tov Ben Isaac’s first glossary of medico-botanical terms, I present the reader with some of the results of the research into the Hebrew-Arabic linguistic component featuring in this glossary. The research carried out in the years 2001–2006 is part of an interdisciplinary project running at the Martin-Buber Institute for Jewish Studies of the University of Cologne and at the Department of Romance Philology of the Free University Berlin. The project is dedicated to publishing the edition and the analysis of various unedited scientific texts written in Hebrew characters that belong to the area of medico-botanical literature. Within this project the Cologne group, consisting of Gerrit Bos and Martina Hussein, is responsible for the Hebrew-Arabic linguistic material, while the Berlin group, consisting of Guido Mensching and Frank Savelsberg, is in charge of the Latin-Romance material. This article follows upon a first article published in 2001 (‘Shem Tov Ben Isaac, Glossary of Botanical Terms, nos 1–18,’ JQR 92 [2001], pp. 1–20), in which Bos and Mensching presented the glossary for the first time, followed by a detailed analysis of the first eighteen entries of the list. I thank Gad Freudenthal, Tzvi Langermann and Guido Mensching for their comments to an earlier draft of this article. For the Romance material, see, among others G. Mensching and F. Savelsberg, ‘Reconstrucció de la terminologia mèdica occitano-catalana del segle XIII a través de llistats de sinònims en lletres hebrees. Edició i anàlisi del vint-i-novè llibre del Sefer ha-Ximmuix de Xem Tov ben Isaac de Tortosa,’ in Actas del I congres de l’estudi dels jueus en territori de llengua catalana (Barcelona, 2004), pp. 69–81.
urgent need arose for ‘lexica or glossaries in which technical-medical expressions have been listed alphabetically, especially the names of simple medicines.’

However, this particular literary genre has been sorely neglected by modern research in spite of the fundamental bibliographical surveys composed by Moritz Steinschneider in the nineteenth century, in which he pointed to the importance of this particular genre for the deciphering of individual plant names in pharmacological fragments, and especially recommended the editions of the glossaries composed by Shem Tov Ben Isaac, and another one extant in ms, Florence, Mediceo Laurenziana Or. 17. The only notable exceptions are a recent concise survey of Hebrew medical glossaries in manuscript, composed by J.P. Rothschild as an appendix to an article on the manuscript tradition of the Hebrew-Italian glossary on Maimonides’ Guide of the Perplexed, prepared by Moses of Salerno, and a list with Romance elements edited by Magdalena Nom de Déu. The apparent lack of interest on the part of scholars in this particular field stands in sharp contrast to that in the field of Arabic studies which can boast of a recent bibliographical survey by Ullmann, while one of its best known glossaries, namely that compiled

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4 J.R. Magdalena Nom de Déu (ed.), Un glosario hebraico aljamiado trilingüe y doce ‘aqrabadin’ de origen catalán (Siglo XV) (Barcelona, 1993).

by Maimonides under the title *Sharh asmā‘ al-‘uqqār*, is available both in a critical edition and in French, Hebrew, and English translations.

**SHEM TOV BEN ISAAC**

One of the most prominent composers of such synonym lists was Shem Tov Ben Isaac, who was born in 1198 in Tortosa (Catalonia). He is known to have traveled in the Near East for business. After 1229 he began to study in Barcelona under R. Isaac Ben Meshullam at the age of thirty; subsequently he spent some time in Montpellier, and was then active as a physician and translator in Marseilles. While Marseilles was formerly an independent and sovereign city, it was forced in the year 1257 to recognize the sovereignty of Charles of Anjou who in return gave the inhabitants a constitution (*Les Statuts de Marseille*) which considered Jews and Christians as equal citizens. He protected and intervened on behalf of the Jews when necessary, as in 1276 when he issued a special decree against the inquisitors who tried to introduce even more stringent measures against the Jews than those decided at the fourth Lateran Council in 1215 and in subsequent Councils. The Jewish doctors in Marseilles found themselves in an especially privileged position, not only with regard to their colleagues in the rest of the Provence, but also with regard to their fellow-citizens, as they enjoyed special rights. As Marseilles suffered from frequent epidemics and there were only few Christian physicians, they were by sheer necessity tolerated in the city and sometimes even employed by the municipality.

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contrary to the Jewish doctors in the rest of the Provence. It was in the city of Marseilles that Shem Tov translated into Hebrew the medical encyclopaedia entitled Kitāb al-taṣrif li-man ‘ajiza ‘an al-taṣrif (The Arrangement of Medical Knowledge for Him Who is Not Able to Compile a Book for Himself), composed in the tenth century by the Andalusian physician Abū l-Qāsim Khalaf ibn ‘Abbas al-Zahrāwī, known in the western world as Abulcasis. Calling it Sefer ha-Shimmush, Shem Tov started his translation in the year 1254, completed it in 1258, and then possibly wrote a revision in which he was engaged in the year 1261. Next to the Kitāb al-taṣrif Shem Tov translated Abū Walīd Muhammad ibn Rushd’s Middle Commentary on Aristotle’s De anima, Abū Bakr Muḥammad ibn Zakariyya’ al-Rāzī’s medical encyclopaedia Kitāb al-Manṣūrī, and Hippocrates’ Aphorisms with Palladius’ commentary.

Shem Tov’s translation of al-Zahrāwī’s Kitāb al-taṣrif is especially important as it shows the attempt to create a new Hebrew medical terminology based on the terminology of the Bible, Mishnah and Talmud, as well as the medieval commentaries and translations. And in some cases he uses the method of loan-translation or semantic borrowing for terms not attested in any Hebrew source.

13 On the Kitāb al-taṣrif see D. Jacquart and F. Micheau, La médecine arabe et l’occident médiéval (Paris, 1990), pp. 139–41 and passim.
19 His commentary is no longer extant in Greek, but it has recently been rediscovered by Hans Hinrich Biesterfeldt and Y. Tvi Langermann, who hope to publish soon a preliminary study of Palladius’ commentary, to be followed by a full edition and analysis.
20 S. Muntner (art. ‘medicine,’ in Encyclopaedia Judaica 11, col. 1189) remarks that the translation of al-Zahrāwī’s Kitāb al-taṣrif by Abraham Shem Tov (sic) is ‘of particular
main reason for his translation of the *Kitāb al-taṣrīf* was that the Jews would have easier access to medical knowledge and not be dependent on non-Jewish doctors anymore.\footnote{Cf. Introduction to *Sefer ha-shimmush* edited by Muntner, ‘R. Shem Tov Ben Isaac of Tortosa,’ pp. 324–3, §2–3; E. Feliu and J. Arrizabalaga, ‘El próleg de Semtov ben Isaac, el Tortosi, a la seva traducció hebrea del *Taṣrīf* d’Abū al-Zahrāwī,’ *Tamid* 3 (2000–2001; Barcelona, 2002), pp. 66–95, p. 80, §2–3; Steinschneider, *Die hebräischen Übersetzungen des Mittelalters*, p. 742.} As to his method of translation, he remarks that for diseases the names of which he knows from the Bible or Rabbinic literature or from Romance, he uses either of those names. And that for diseases, organs, drugs, wild and domestic animals, insects and vermin, the names of which he does not know from these sources, he uses the Arabic term, because nowadays knowledge of Hebrew has been lost, due to the length of the Exile.\footnote{Cf. Muntner, ‘R. Shem Tov Ben Isaac of Tortosa,’ p. 326, §9; Feliu and Arrizabalaga, ‘El próleg de Semtov ben Isaac, el Tortosi,’ p. 82, §9; Steinschneider, *Die hebräischen Übersetzungen des Mittelalters*, p. 743. summarizes the text as follows: ‘Alle Krankheiten, Glieder, Mittel etc., für welche er einen Ausdruck in der Bibel, in der Landessprache oder in der Hebräischen Sprache der Weisen und der Mittelalter gefunden, habe er danach benannt, sonst den arabischen Terminus beibehalten, da sich durch das Exil die Kenntnis der hebr. Sprache vermindert habe.’}

In order to stress the intention of his translation once more, Shem Tov extols its qualities, remarking that it is useful for individuals and crowds, wise and foolish, kings and poor people in all times and all places, and emphatically warns physicians against swapping similar remedies or buying a certain remedy they do not know from a pharmacist who then gives them something else instead of it, on purpose or by mistake.\footnote{Cf. Muntner, ‘R. Shem Tov Ben Isaac of Tortosa,’ p. 327, 13, 15–16; Feliu and Arrizabalaga, ‘El próleg de Semtov ben Isaac, el Tortosi,’ p. 84, 13, 15–16.} Shem Tov adds that many people, who were first mistaken themselves, then misled others concerning the names of herbs, seeds and plants in some countries.\footnote{Cf. Muntner, ‘R. Shem Tov Ben Isaac of Tortosa,’ p. 327, 17; Feliu and Arrizabalaga, ‘El próleg de Semtov ben Isaac, el Tortosi,’ pp. 84–5, 17.} As an example he gives the case of a plant that has four species, one of which was called by the Persian doctors ‘fanjangusht’ (chaste-tree, *Vitex agnus castus* L.),\footnote{Cf. Maimonides, *Sharh asmā‘ al-‘ugār*, ed. Meyerhof, no. 308; Dietrich (ed.), *Dioscurides Triumphans*, i, 72. The actual meaning of the Persian term is not ‘five leaves’ but ‘five fingers’ (*panj angush*); cf. Vullers, *Lexicon Persico-Latinum Etymologicum*, i, p. 374: ‘quinque digitii’.} meaning ‘five leaves’, while the Christians called it ‘pentaphyllon’ (*Potentilla*).
which also means ‘five leaves’. This misled, says Shem Tov, many physicians. Some of them think that ‘fanjangush’ is a large fragrant tree that is as large as a man or even so large that a man can hide underneath it, and that its fruits are called ‘agnus castus’, while ‘pentaphyllon’ is a plant that has no stem but only five leaves which grow from the earth. Others say, Shem Tov continues, that ‘fanjangush’ is not the mentioned tree, but a plant which has the effect of completely annulling sexual lust, and that ‘pentaphyllon’ is a plant that has a stem.

Another example of a possible mix-up of remedies, is taken from Maimonides, who warns in the case of the ‘black nightshade’ (*Solanum nigrum* L.) of prescribing the wrong species. For many physicians prescribe one of its species for internal diseases, and another similar species, which can be easily distinguished from the previous one when it has been dried and its fruits become black, when it is still fresh, for external diseases, as it is poisonous. When this last species is mistaken for the first one and its juice is taken internally, it causes severe suffocation, hiccups and nausea accompanied by yawning and vomiting of blood. And how the place where one species is grown can influence its form.

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31 Shem Tov’s quotation is taken from Maimonides’ *On Poisons* (forthcoming ed. and trans. Bos, ch. 91): ‘To the [substances] taken by mistake belongs the soporific type of black nightshade (*Solanum nigrum* and var.), for we often prescribe black nightshade juice among the ingredients to be taken for diseases of the internal organs. One of its varieties that has black seeds and that is soporific is [sometimes taken] by mistake when [the seeds] are [still] green before they turn black. Upon drinking, it immediately causes severe dryness, hiccups and vomiting of blood. Its treatment: hasten to let him vomit by means of the general emetics which have been described before. Then let him vomit for the last time by means of water and honey. Then let him drink a large quantity of water and honey. When he has digested something of it, he should take another drink of water and honey. He should do so for a day and a night. And then he should feed himself as usual…’ Instead of ‘dryness’ Shem Tov has ‘suffocation’ which
is stressed by Shem Tov by quoting from Maimonides’ statement in the 
*Mishneh Torah, Sefer Zera’im* that one species can assume many [different] 
forms depending on the place and on the cultivation of the soil, and 
that these two forms of one species can be so different that they look 
like belonging to two different species altogether.32 Again in the name 
of Maimonides, Shem Tov adds that the opposite can also happen, 
namely that two different species are so similar to one another that 
their appearance seems to be the same. And quoting from the same 
source Shem Tov gives a wide variety of examples, both from plants 
and trees, such as garden lettuce (*Lactuca sativa*) and wild lettuce (*Lactuca 
scariola*), chicory (*Cichorium intybus*) and wild chicory (*Cichorium pumilum*), 
garden leek (*Allium porrum*) and field leek (*Allium ampeloprasum*), garden 
coriander (*Coriandrum sativum*) and wild coriander (*Smyrnium conatum 
Boiss.*).33 Shem Tov concludes his extensive quotation from Maimonides 
by exclaiming that if in the case of crops the Torah is very strict and 
makes it obligatory to know the different forms of plants and trees 
and their fruits because of the prohibition of *kil’ayim* (mixing together 
of different species), how much more so should this be the case for 
remedies when human life is at stake.34 That the wrong administration 
of a drug can have fatal consequences is illustrated by Shem Tov by 
relating an incident that happened around the year 1260 in his home 
town Marseille, in which two Christian doctors administered a patient 
a purgative of half a drachm of white hellebore as a result of which 
the patient died of suffocation.35 The following incident, related by 
Shem Tov, not only endangered the life of the patient, but that of the 
whole Jewish community:

An ignorant, foolish man, a fellow Jew, arrived in the city of Marseilles, 
claiming to be a physician, although he was [in fact] estranged from that

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32 Muntner, ‘R. Shem Tov Ben Isaac of Tortosa,’ p. 328, 19; Feliu and Arrizabalaga, 
‘El pròleg de Semtov ben Isaac, el Tortosi,’ p. 85, 19; Maimonides, *Mishneh Torah, Sefer 
Zera’im, Hilkhot Kil’ayim* III, 1.

33 Muntner, ‘R. Shem Tov Ben Isaac of Tortosa,’ p. 328, 20–21; Feliu and Arrizabalaga, 
‘El pròleg de Semtov ben Isaac, el Tortosi,’ pp. 85–6, 20–21; Maimonides, 
*Mishneh Torah, Sefer Zera’im, Hilkhot Kil’ayim* III, 2–3.

34 Muntner, ‘R. Shem Tov Ben Isaac of Tortosa,’ p. 328, 21; Feliu and Arrizabalaga, 
‘El pròleg de Semtov ben Isaac, el Tortosi,’ p. 86, 21.

35 Muntner, ‘R. Shem Tov Ben Isaac of Tortosa,’ pp. 328–9, 23; Feliu and Arrizabalaga, 
‘El pròleg de Semtov ben Isaac, el Tortosi,’ pp. 87–8, 23; Shatzmiller, *Jews, Medicine and Medieval Society*, p. 79.
science. Worse, he really had no medical knowledge at all. His patient had been bedridden for a long time, suffering from arthritis, retet in Hebrew. In his ignorance [the ‘doctor’] ordered the root of a certain herb to be boiled and that [the patient] should drink the liquid from it. This ignoramus knew neither the strength nor the properties of this herb, nor that it was potentially harmful. As a result of this treatment, the sick man fell into a coma, lost his memory, and [eventually] lost his mind. His face and eyes turned red, his tongue dry, and his throat parched. Unable to speak or breathe, his body turned cold. Saliva and moisture came out of his mouth and he was unable to control it. That night he died suddenly. The ignoramus rose early the next morning to visit his patient, as doctors do. He found him sleeping deeply, in the torpor of death. Nevertheless, he assured [the patient’s] relatives and neighbors that this was the way in which the herb worked and that [the patient] was merely asleep and would eventually wake up. Still [the doctor] decided to go into hiding. When evening came, the bailiff, [shofer] ordered him to present himself before him, otherwise he would be hit with a fine of one hundred marcae. [‘The ‘doctor’] left the city, escaping on the second day of the feast of Passover of the year five thousand and twenty one (March 18, 1261). Had it not been for the fact that the Christian happened to be a foreigner, we all would have been in great danger on his account.36

That Jewish doctors had to be particularly careful and think twice before treating a Christian patient is borne out by the following statement featuring in Sefer ha-yosher, a medical treatise composed at the end of the Middle Ages:

We Jewish doctors in the Diaspora have to possess extraordinary knowledge, for the Christian doctors envy us and challenge us, so that at times we have to provide explanations about our procedures [lit., ‘science’]. And if they discover any ignorance on our part they say, ‘He kills gentiles.’ This is the reason I advise each and every Jew not to [even] touch a gentile if he is not able to answer [the questions of those Christian doctors] in natural sciences.37

36 Muntner, ‘R. Shem Tov Ben Isaac of Tortosa,’ p. 328, 22; Feliu and Arrizabalaga, ‘El pròleg de Semtov ben Issac, el Tortosí,’ pp. 86–7, 22; trans. Shatzmiller, Jews, Medicine and Medieval Society, pp. 83–4; but see as well Crémieux, ‘Les Juifs de Marseille,’ p. 254, who states that never, following the misdemeanor of an individual, a complaint was filed against the Jewish community of Marseille as a whole, because of the spirit of tolerance predominant in the city.

The Synonym Lists

To minimise the risk of mistaking medicinal herbs and drugs, because of ignorance or because of the lack of proper terminology in the actual vernacular, and to provide both Jewish doctors and patients with the proper medico-botanical terminology, Shem Tov composed ‘a list of roots and herbs in the language of the Bible and of the Sages, of blessed memory, according to the interpretation most commentators agreed upon, in the vernacular language and in Arabic, alphabetically arranged.’ This list, which consists of two separate lists of synonyms and is part of book twenty-nine of his translation of Kitāb al-tażrif, is extant in the following manuscripts:

1. Ms. Paris, BN héb. 1163. This manuscript contains books eighteen to thirty and was copied in a Sephardic script in the fourteenth century. The two lists feature on fols. 191a–198a.

2. Ms. Oxford, Hunt Donat 2 (Neubauer 2119). This manuscript contains books seven to twenty-nine and was copied in the year 1369 in a Sephardic cursive script by Asher ben Abraham ha-Kohen in the city of Trets (Provence).

3. Ms. Vatican Ebr. 550. This manuscript dating from the fourteenth, or, possibly fifteenth century, only contains the glossary.

Of the five chapters of the original Arabic text of book twenty-nine, Shem Tov modified the first two chapters to serve his purpose, since, as the author states, the Jews neither need nor profit from a translation of the first two chapters dealing with foreign and different names of plants

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in Greek, Syriac and Persian. In the introduction to the first list the author specifies this list in the sense that it not only covers roots and herbs, but also instruments, bodily parts and other items. As to the second list he remarks: 'I have also composed an explanation of the drugs and herbs in the vernacular and Arabic so that someone who goes on a distant journey will know their names in both languages. And I have arranged them alphabetically.'

Thus, Shem Tov created two independent lists which he added to the *Sefer ha-shimmush*, one starting with the Hebrew or Aramaic term, followed by the Arabic synonym, and then in about seventy percent of the entries the vernacular term which usually is Middle Latin or Old Occitan. This list was intended to help the reader with the identification and clarification of the Hebrew terminology used by the author in his translation of the *Kitāb al-tashrīf*. The second list starts with the vernacular term, followed by its Arabic synonym and sometimes supplemented with its Hebrew or Aramaic equivalent and was to be used and consulted independently from the *Sefer ha-shimmush*. As a source for the proper biblical Hebrew synonym for the Arabic term, Shem Tov consulted Sa'adya ben Yosef al-Fayyūmī, better known as Sa'adya Gaon (882–942) and Abū 'l-Walīd ibn Marwān, i.e. Jonah ibn Janāh (died after 1040). Research has shown that Ibn Janāh in turn relied heavily upon Sa'adya’s biblical translations and commentaries for iden-

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42 Ms. Paris, BN héb. 1163, fol. 191a:
בראשית של ותרכ אלת חתונת בשמישה ותשק מצרים ו竘סם בשמישה והחרז והשמאת שיש לכלבם הדומם בלשון ותראתי אופי.

43 Ms. Paris, BN héb. 1163, ibid.:
שיקל חטבימי כלבימ וחכמים.

44 Ms. Paris, BN héb. 1163, ibid.:
נ摁 חתונת בשמישה חטבימי בלשון ותשק משלו דומם בלשון ושתי חכמים דומם בלשון ששמישה והחרז על דומם בלשון ושתי חכמים דומם בלשון...

45 For Sa'adya Ga'on, philosopher and exegete, poet and polemist, legist and communal leader see H. Malter, *Saadia Gaon. His Life and Works* (Philadelphia, 1942). For a fundamental study of the language comparisons in his linguistic works and for his Bible translations which served as a source for subsequent scholars see Maman, *Comparative Semitic Philology in the Middle Ages*, esp. pp. 162–79. The diffusion of Sa'adya’s works in the Provence is otherwise known from the *Sefer Doreś rešumot* which quotes from Sa'adya’s long commentary on Genesis in Hebrew (cf. Y.T. Langermann, ‘A Citation from Saadia’s Long Commentary to Genesis in Hebrew Translation,’ *Aleph* 4 [2004], pp. 293–7).

46 For Jonah ibn Janāh, the undisputed master of Sephardic linguistics, who lived in the first half of the eleventh century, see *Encyclopaedia Judaica*, viii, cols. 1181–6, s.v. ‘Ibn Janāh, Jonah’ (D. Tenne). For the language comparisons in his works see Maman, *Comparative Semitic Philology in the Middle Ages*, pp. 299–370.
tifying Biblical botanical terms. Shem Tov remarks that he especially chose these two authors because he agreed to their identification of the relevant Hebrew and Arabic terminology. In the case of Sa’adya Gaon, his Arabic translations and/or commentaries to the Torah, Isaiah, Psalms, Proverbs, and Job often provided Shem Tov Ben Isaac with the required Hebrew equivalent to a specific Arabic term.

An example of an identification preserved in Sa‘adya’s writings is the following entry (SeSh1—Alef 1):

אָלוֹלָתָה או אָהֲלִים בֵּ’הַ נבֶר

‘HLWT or ‘HLYM, Arab. ‘ NBR

Hebrew ‘HLWT or ‘HLYM means ‘aloe wood’, Aloexyllon Agallochum and Aquilaria Agallocha, both from India, and features in the Bible, e.g. Ps 45:9 (KB 19; CD 1: 146; LF 3:411–414).


For the identification of ‘HLYM as ‘anbar, cf. Sa‘adya Prov 7:17 (SM 69):

נשים משכבוי מְר או אָהֲלִים וּקְנָם


48 Saadya allegedly also composed a translation of the Five Scrolls and of Ezra. Of the edition of the Five Scrolls with Sa‘adya’s translation by Kafih (Jerusalem, 1962) only Esther is considered to be authentic. For the question of Saadya’s commentaries and/or translations to the Bible see Y. Ratzaby, Tafsir Yesha‘aya le-Rav Sa‘adya. Saadya’s Translation and Commentary on Isaiah (Kiriath Ono, 1993), pp. 7–8; M. Pollack, The Karaite Tradition of Arabic Bible Translation. A Linguistic and Exegetical Study of Karaite Translations of the Pentateuch from the Tenth and Eleventh Centuries C.E. (Leiden, 1997), pp. 77–80.

49 SeSh1—Alef 1 refers to our forthcoming edition of the first list of synonyms from Shem Tov Ben Isaac, Sefer ha-Shimmush, bk. 29. In keeping with the purposes of this article I have omitted the Romance material.

50 Lane, Arabic-English Lexicon, I, 2168, cites various origins for ‘anbar as ambergris as given in the earlier literature: ‘It issues from a source in the sea: a fish, marine beast, or a vegetable in the bottom of the sea’. It is now generally conceded to be a morbid secretion of the sperm whale intestine, which is fragrant when heated.

51 Lane, ibid.

52 Yellow powder from Memecylon tinctorum WILLD. or Flemingia rhodocarpa BAK. (SP 798).
(I have sprinkled my bed with myrrh, aloes, and cinnamon): 53

אָפְּנָבָר וָטַּחְרוּ בָּמַכְמַשׁ שֶׁטֶּנְבֶר וֶטֶּנְבֶר

Ibn Janāh (IJ 24): (this term is explained as ‘sandalwood’), and the gloss in ms. Rouen n. 18: (according to others it is: ‘anbar’).

As for Jonah ibn Janāh, Shem Tov certainly used the Kitāb al-usūl, a dictionary of Biblical Hebrew, as in the following entry (SeSh 1—Samekh 22):

סָמְנֶרֶד ב”ה פְּקָאִית

SMDR, Arab. FQH

Hebrew SMDR means ‘flower buds of the vine’ or ‘(berry) in the building stage’ (KB 759; JD 998; LF 1:72f) and features in the Bible (Song 2:13) and in Rabbinic literature, e.g. in mOrl 1.7.

Arabic fuqqāḥ means ‘a flower, or blossom, of any plant’ (L 2424).

For the identification, cf. Ibn Janāh (IJ 495) on the mentioned Bible verse:

וּרְאָיִית הַגַּבְר

and Maimonides on mOrl 1.7 (MK 1:401). In his translation of the same verse Sa‘ādyā (SH 53) uses the Arabic aequivalent סָמְנֶרֶד for Hebrew סָמְנֶרֶד. See as well MCS 457:1439.

Next to the Kitāb al-usūl Shem Tov probably consulted Ibn Janāh’s Kitāb al-talḥīš, a book on simple drugs, measures and weights in which he gives synonyms of the drugs in a.o. Arabic, Syriac, Hebrew, Greek, Berber, Spanish, and Latin. 56 This work has unfortunately been lost.
but survives in a number of quotations by subsequent authors, as, for instance al-Idrīsī (d. 1166), who was active at the court of king Roger II of Sicily and composed the Қїтқїб ал-жамї’ лї-сїжїт ашїтїт ал-набїт ва-дїрїб аснїа’ ал-мўфрадїт (Compendium of the Properties of Diverse Plants and Various Kinds of Simple Drugs). This work survives in an incomplete manuscript in Istanbul (Fatih Library, no. 2610) and in a complete manuscript in Teheran (Kitābkhāna-i Majlis-i Sanā‘, 18120). These manuscripts actually represent two different redactions, the Istanbul manuscript preserving the synonyms to the names of plants and drugs, while the Teheran manuscript has omitted them. For an example of a quotation from Ibn Janāḥ’s Қїтқїб ал-талькїш preserved by al-Idrīsī see the entry SeSh 1—Alef 14 in our edition. A second author preserving material from Ibn Janāḥ’s Қїтқїб ал-талькїш is Se‘adyah ibn Danān from Granada (fifteenth century) who composed the Sefer ha-shorashim, a dictionary of biblical Hebrew in which he drew heavily on Ibn Janāḥ and quotes him explicitly not less than 77 times. For an example of a quotation see the entry SeSh 1—Alef 14.

With regard to the sources consulted by Shem Tov for the identification of the Arabic synonyms with terminology in Rabbinic Hebrew or Aramaic, we only have the author’s general reference to ‘medieval commentators’. To identify these medieval commentators has proven to be especially problematic. One prominent medieval commentator Shem Tov probably had recourse to, was Sa‘adya Ga‘on who not only was an important Bible commentator and translator, but also a prominent linguist who dealt extensively with the explanation of difficult terms in the Mishnah in a genre known as Aljuz al-Mishnah, of which several examples exist in the Genizah and which consists, as Brody remarks, of ‘a series of short glosses in Arabic on Hebrew words and expressions, according to the order of the Mishnaic text.’ Unfortunately, these lexical explanations only survive partially and are, moreover, for the

57 Facsimile edition in 3 vols. by F. Sezgin (Frankfurt, 1995); see Amar and Sari, ‘Liqqîîm mi-mi-llon shemot ha-refu‘ot shel R. Jonah ibn Janā‘.’
58 Cf. facs. ed. Sezgin, pp. VII–VIII.
60 R. Brody, The Geonim of Babylonia and the Shaping of Medieval Jewish Culture (New Haven, 1998), pp. 268–9. While Allony attributed these lexical explanations to Sa‘adya Ga‘on, Abramson (‘Millon ha-Mishnah le-Rav Sa‘adya Ga‘on,’ Leshonenu 18 [1954], pp. 49–50) and subsequently Maman (Comparative Semitic Philology in the Middle Ages, p. 169, n. 12) argued that they are not Sa‘adya’s at all. According to Brody (The Geonim of Babylonia, p. 269), Allony’s identification was correct, as confirmed by ‘further manuscript...
An example of a derivation possibly going back to Sa'adya's *Alfūz al-Mishnah* is the following entry (SeSh 1—Gimmel 3):

\[
\text{גופנן ב"ה סבסתאן}
\]

**GWPNN, Arab. SBSTN**

The Hebrew term *GWPNN* features in Rabbinic literature (e.g. mDe-mai 1.1) and means 1) ‘fennel’, Foeniculum vulgare MILL. (FM 27) and 2) Cordia Myxa L. (LF 1:296–7; 3:462; AYE 168; DAS 2:295; FZ 241–2).

Arab. *sibistān* or *sabistān* is the Arabic form of the Persian *sag-pistān* (VL 1:360) and is identified with Cordia Myxa L., the fruit of the sebesten-tree (M 202; ID 57:20).

For the identification of the two terms, cf. Sa’adya (SAM 184:78); see as well Maimonides on mDemai 1.1:

\[
\text{גופנן: נתן מ書きול ישנה אלעשבה והייל אלסבסתאן}
\]

(a plant similar to aneth and according to others to sebesten) (MK 1:132).

A second medieval commentator Shem Tov consulted was Maimonides whose commentary on the Mishnah contains a wealth of medico-botanical synonym terminology, and who in turn relied on earlier sources, possibly Sa’adya’s explanatory lists and certainly Ibn Janāḥ’s works as he states explicitly in his introduction to his *Glossary of Drug Names*. As we have seen above, Shem Tov was familiar with Maimonides’ commentary, had access to it and consulted it. In a few cases such a derivation from Maimonides is beyond any doubt as they are literal discoveries in the Genizah, along with a comparison of citations in Se’adyah’s name and interpretations contained in his other works’.

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61 Three of the fragments were published by N. Allony in *Meḥkarē Lashon we-Sifrut*, 1: *Pirqē Rav Sa’adya Ga’on* (Jerusalem, 1986), pp. 137–98. A large Geonic fragment covering the commentary of nearly half the Mishnah is being prepared for publication by the Institute for the Complete Israeli Talmud but has not been published so far.


quotations from his commentary on the Mishnah, as in the following entry (SeSh 1—Shin 45): 64

בָּיתָא יִתְוָﬠַ וַישוﬠ.

Arabic "talḥīd" means 1) ‘forming, pressing, felting, making one’s hair stick together; 2) lining, covering, mending (WKAS 1:109–10).

For the remaining terms the medieval commentary and responsa literature composed by Geonim—that is the heads of the Jewish academies in Babylonia—next to Sa‘adya, proved to be an important source consulted by Shem Tov. These commentaries and responsa contain a wealth of botanical material and are a valuable source of information for the scientific, technical terminology in Arabic and Hebrew. 65 However, with a few exceptions, 66 the consultation of these particular sources is problematic, as some texts have been edited in the past but

64 Other examples are Ayin 32; Quf 27,48; Shin 45; Tav 12.
65 For instance, the responsa composed by Sherira and Hai Gaon contain as S.W. Baron (A Social and Religious History of the Jews, 2nd rev. and enl. ed. [New York, 1952–85], viii, p. 229) remarks ‘so many attempts at correct identification of names [of plants] and their relation to the previously known species.’
66 A major exception is the Oẓar ha-Ge’onim, Thesaurus of the Geonic Responsa and Commentaries (Haifa, 1928–43), the monumental collection of Geonic responsa and commentaries in the order of the Talmud tractates (to Bava Mezi’a), edited by Benjamin Lewin.
without proper indices, other texts are still in manuscript and yet others have to be considered lost.\textsuperscript{67}

An example of a quotation from Geonic sources is (SeSh 1—Alef 22):

\begin{quote}
\textit{אָכָּקִיָּה בַּאֲלֶפֶּאָבָּב}, Arab. \textit{QQYH}
\end{quote}

Aramaic \textit{QQYH} from Greek \textit{ἀκακία} (KG 2:125; LS 46) is the ‘Arabic gum’ won from the acacia tree (Acacia nilotica or Acacia senegal) and features in Rabbinic literature, e.g. in bGitt 69b as \textit{QQY} (variants: \textit{QQYH}, \textit{QQI})\footnote{An example of a text still largely in manuscript is the \textit{Kitāb al-ḥāṣa}, a dictionary on Biblical and Rabbinic Hebrew written in Judaeo-Arabic and composed by Hai Gaon, of which substantial portions have survived in the Genizah; cf. Brody, \textit{The Geonim of Babylonia}, pp. 339–51, and Maman, \textit{Comparative Semitic Philology in the Middle Ages}, pp. 371–4.}, where it is stated: ‘for anal worms one make a dressing of acacia, aloe juice, white lead, silver dross, an amulet-full of phyllon and the excrement of doves and apply it to the affected part’ (cf. JD 113; LW 1:156; SDA 161; LF 2:388). The regular Hebrew term for the acacia tree is the biblical \textit{שֶׁטֶה} (see LF 2:377; FO 98; FEB 236–242).

For the Arabic equivalent \textit{aqāqiyā} (DT 1:70; M 12) to the Aramaic \textit{QQY}, cf. the Geonic Responsum to the Talmudic passage quoted:

\begin{quote}
\textit{אָכָּקִיָּה בַּאֲלֶפֶּאָבָּב} (\textit{QQY}: thus it is called in Babylonia); see LO \textit{Teshuvot} on bGitt 69b, p. 157. The Arabic equivalent for the Hebrew \textit{שֶׁטֶה} is \textit{sant} (cf. Sa’adya’s commentary on Isaiah 41:19 [DS 62]).
\end{quote}

In some cases we could only retrieve a Geonic source indirectly, namely through its quotation in the \textit{Arukh}, a lexicon on the Talmud and Midrashim composed by Nathan Ben Jehiel of Rome and completed in 1101. Most of the Arabic plant names quoted in the \textit{Arukh} are derived from Geonic sources, as Löw pointed out in his monumental \textit{Flora und Fauna der Juden}.\textsuperscript{68} An example of such a quotation from the \textit{Arukh} is
SeSh 1—Dalet 8 in our edition. A final author who preserved material from earlier sources which are otherwise lost and which were consulted by Shem Tov is Tanhum Ben Joseph Ha-Yerushalmi, who was active in Jerusalem in the thirteenth century and composed a dictionary of difficult terms featuring in Maimonides’ Mishneh Torah, entitled Kitāb al-murshid.69 For his lexicographic explanations of these terms Tanhum consulted a variety of sources, amongst them different Geonic authors such as Sa’adya, Sherira, Hai, but above all Nathan’s Arukh, Ibn Janah’s works and Maimonides’ commentary on the Mishnah.

However, some of the terms featuring in the list composed by Shem Tov cannot be retrieved neither in biblical nor in rabbinic literature, nor in the standard lexica, nor in the medical and botanical literature. An example of such a botanical term is the following (SeSh 1—Aleph 16):

אָר הָאָרֶץ בֵּא מָמוֹרִין

RY H’RS, Arab. M’ŻRITN

Hebrew RY H’RS, lit., ‘lion of the earth’ designates Daphne mezereum und Var. The Hebrew term is not attested in secondary literature (cf. BM 387, n. 2) and was possibly coined by Shem Tov as a loan-translation of the Arabic مَازَرِيْن which in turn is a loan-translation (via Syriac?, cf. LA 33) of the Greek χαμέλεων (LS 1975; DT 4: 135, esp. n. 4; cf. al-Idrīsī (IJS 1:272): مازريون...بالعربية آسَد الأَرْض.

Māzayyūn is the standard Arabic term for the same plant (cf. DT 4:135; M 237). It features, for instance, in Maimonides’ Medical Aphorisms (XXI, 85) and is translated by N as: לבריאולה and by Z as: מאזריון לבריאולה and by Z as: מאזריון לבריאולה.

These terms not only belong to the field of botany and pharmaceutics but also to that of pathology such as in the following example (SeSh 1—He 11):

69 The Kitāb al-murshid was edited by B. Toledano, letters Alef-Kaf (Tel Aviv, 1961), by J. Dana, letter Tav (MA thesis [Jerusalem, 1969]), and by Hadassa Shy, letters Lamed-Tav (doctoral thesis, [Jerusalem, 1975]). For a study of this dictionary and excerpts from it see W. Bacher, Aus dem Worterbuche Tanhum Jeruschalmi’s (Strasbourg, 1903). An anonymous summary of this work can be found in Qīzzur al-Kaf, ms. Berlin 153. A new edition and study of this work prepared by Hadassa Shy has been published recently: Al-Murshid al-Kāfī: The Lexicon of Tanhum ben Yosef Hayyushalmi to Mishné Torah of Maimonides, with a translation from Judeo-Arabic into Hebrew and references (Jerusalem, 2005).
Hebrew *HM DT HMTM* which is not attested in secondary literature is possibly coined by Shem Tov as a Hebrew loan-translation of the Arabic *zalaq al-amā* ‘Dysenteria spuria’ (SN 111; KZ 37; cf. BM 1117). The Arabic term features in Maimonides’ *Medical Aphorisms* (XXII, 36; XXIII, 80, 90, 93, 94), and is translated by N as:

The source of the identification could not be retrieved. As far as we know Shem Tov probably introduced the Hebrew term in the sense of ‘vertigo’ by semantic borrowing from the Arabic.
Especially striking is the creation of a new special terminology in the field of different kinds of inflammations or tumors all of them in combination with the Hebrew term זカメラ which already features in Rabbinic literature in the special sense of ‘morbid growth, swelling, ulcer’. Thus we find זכמות (SeSh 1—Zadeh 20) for Arabic dhāt aljanb (pleurisy); זצמח בטרפשא (SeSh 1—Zadeh 21) for Arabic sha‘esha (pleurisy); זצמח בלובן חומש (SeSh 1—Zadeh 22) for Arabic sirsam (phrenitis); זצמח ז,ep (SeSh 1—Zadeh 23) for Arabic zurqa (glaucoma); זצמח זאמדם (SeSh 1—Zadeh 24) for Arabic falghamiīn (inflamed tumor); זצמח זוג נטמ続く (SeSh 1—Zadeh 25) for Arabic makhba (an ulcer affecting the flesh, not the bones or tendons); זצמח זאמת ראה (SeSh 1—Zadeh 26) for Arabic dā‘is (whitlow); זצמח זאמה התלוש (SeSh 1—Zadeh 27) for Arabic ḏafda (ranula), and finally: זעצם זהורה זיבב (SeSh 1—Zadeh 27) for Arabic ḏafda (ranula). Therefore, these terms did not leave any trace in subsequent literature as far as we know now, possibly because the term זкам—ambiguous at it was—was not a very felicitous one as a general term for inflammation or tumor. Instead of it, the term זمارس became the common one in medieval Hebrew medical literature, representing the Arabic waram and Latin tumor.

**Outlook**

The occurrence of these terms in the list raises the question of their originality. Are they the product of the translation activity of earlier or contemporary Jewish translators or medical authors whose works Shem Tov had access to, or was he the first one to coin these new terms, in order to fill the gap of a missing Hebrew technical lexicon? In order to answer this question we have to see which Hebrew translators were active before or simultaneous with Shem Tov, so that he might have been able to consult their translations of medical works, and especially pharmaceutical ones, for the medical-pharmaceutical terminology.70

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70 We can disregard those works in which pharmaceutics and pharmaceutical therapy played no role, as in Samuel ibn Tibbon’s translation of Ḍār al-ḥabīb’s commentary to Galen’s Arz jāren (Cf. Ullmann, Die Medizin im Islam, pp. 158–9) which he translated in Béziers in the year 1199 under the title Perush Melakhah qeta‘annah. See Stein’s, Die beurischen Übersetzungen des Mittelalters, pp. 733–4; Jewish Encyclopedia, vi, pp. 549–50 (Max Schloessinger); G. Freundt, ‘Les sciences dans les communautés juives médiévales de Provence,’ REJ 152 (1993), pp. 29–136, p. 49; D. Romano, ‘La
The only major translator who qualifies is Moses Ben Samuel ibn Tibbon who was active between 1240 and 1283, possibly first in Naples and then in Montpellier from 1254 on. Thus, he translated, previous to Shem Tov, Maimonides’ *Fi tadbīr al-ṣūḥa* in 1244 under the title *Al Hanḥagat ha-beri‘at*. And contemporary to Shem Tov he translated in 1257 al-Rāzi’s antidotarium *Kūth al-aqrābādhihīn al-kabīr* under the title *Aqrabādin*, in the same year or in 1267 Maimonides’ *Commentary on Hippocrates’ Aphorisms*, in 1259 Ibn al-Jazzār’s medical encyclopaedia *Zād al-musāfīr* under the title *Ẓedat ha-derakhim*, and in 1260 Averroes’ commentary on Ibn Sīn’s medical encyclopaedia *Zād al-masāfīr* under the title *Ẓadat ha-derakhim*, and in 1260 Averroes’ commentary on Ibn Sīn’s poetical summary of the *Qānūn*, entitled *al-Urjūza fi ‘l-tibb*. Of unknown date are his translations of Maimonides’ treatises *On Poisons* and *On Hemorrhoids*. As none of these works, with the exception of the antidotarium, is a pharmaceutical handbook that could have been consulted easily by Shem Tov and as most of these translations are contemporary to the time in which Shem Tov translated the *Kitāb al-tavīf*, it seems unlikely that he consulted Moses ibn Tibbon’s translations. A final verdict in this matter has to wait until these translations have been analyzed with regard to their Hebrew medical-botanical terminology. Two other major thirteenth-century translators of medical works from the Arabic into Hebrew, namely Nathan...
ha-Meʿati\textsuperscript{81} and Zerahyah Ben Isaac Ben Sheʿaltiel Hen,\textsuperscript{82} mentioned above, were both active in Rome subsequently to Shem Tov, as Nathan was active between 1279 and 1283 and Zerahyah between 1279 and 1291. Therefore, the occurrence of a similar botanical terminology in their translations of Maimonides’ Medical Aphorisms (see below) is to be ascribed to the influence of Shem Tov on these translators, unless they drew on another hitherto unknown source. The question whether Shem Tov had access to other synonym lists composed by earlier authors, is open as most of these lists are anonymous, undated and research into them is still in its infancy.\textsuperscript{83} However, a first selective enquiry into some of these lists provided a negative answer to this question. The same holds good for Arabic compendia which contain alphabetical lists of plants with synonyms in different languages, amongst them Hebrew, such as al-Idrīsī’s Kitāb al-jāmiʿ li-ṣifāt ashlāt al-nabāt. Research into this compendium showed that the novel Hebrew terminology used by Shem Tov does not feature in this medical compendium. A final source Shem Tov might have consulted is original medical compositions in Hebrew with synonym terminology composed at an earlier date than his glossary. The only surviving examples are the Sefer Asaph also called Sefer refuʾōt, a book that was known in southern Italy in the tenth century and was reedited (or possibly even composed) by the southern Italian doctor Shabbetai Donnolo (913–982),\textsuperscript{84} and the Sefer ha-yakar also called


\textsuperscript{83} For some first results see Bos and Mensching, ‘Hebrew Medical Synonym Literature.’

Sefer merkabot likewise composed by Shabbetai Donnolo. However, the consultation of these works during the editing of Shem Tov’s first list has shown us that the terminology featuring in these works is very different from that used by Shem Tov.

To summarize, Shem Tov Ben Isaac applied two procedures in order to create a Hebrew medical terminology. On the one side he consulted the works of Sa’adya Ga’on, Jonah ibn Janāḥ and the Geonim in order to find the Hebrew-Aramaic equivalent to the Arabic term at hand, on the other side he saw himself forced to fall back on terminology created through the method of loan-translation and semantic borrowing because of a gap in the existing Hebrew medical-botanical lexicon. As far as we know at the moment several of these loan-translations are attested for the first time in Shem Tov’s list, were coined by him after the Arabic and were then adopted by other translators such as Nathan ha-Me’ati and Zerahyah Ben Isaac Ben She’altiel Hen.

List of Abbreviations

FM J. Feliks, Ma’ot ha-Mishnah, Seder Žera’im (Jerusalem, 1967).

86 For a list of these terms see the introduction to our edition of the first list.
MEDIEVAL HEbrew MEDICAL TERMINOLOGY

FO J. Feliks, Olam ha-‘Zome’ah ha-Miqraḥ (Tel Aviv, 1957).
FZ U. Feldman, Zunchei ha-Mishnah (Tel Aviv, n.d.).
ID A. Issa, Dictionnaire des noms des plantes en Latin, français, anglais et arabe (Cairo, 1930).
JD M. Jastrow, A Dictionary of the Targumim, the Talmud Bavli and Yerushalmi, and the Midrashic Literature (New York, 1950).
L E.W. Lane, Arabic-English Lexicon (London, 1863–79).
LA I. Löw, Aramäische Pflanzennamen (Leipzig, 1881).
LO B. Lewin, Oṭzar ha-Geonim. Thesaurus of the Geonic Responsa and Commentaries (Haifa, 1928–43).
M Maimonides, Shirah asṣmaʿ al-tajjār, ed. M. Meyerhof (Cairo, 1940); English translation from the Hebrew translation by S. Muntner by F. Rosner (Haifa, 1995).
MCS A. Maman, Comparative Semitic Philology in the Middle Ages. From Saʿādiah to Ibn Bāzin (10th–12th C.) (Leiden, 2004).
MK Mishnah ‘im Perush Rabbeinu Mosheh Ben Maimon. Makor ʿeẓer-Targum, ed. J. Kafih, 6 parts in 7 vols. (Jerusalem, 1963–69); MK 1 = Zeraʿim; MK 2 = Moʾed; MK 3 = Nashim; MK 4 = Nezikin; MK 5 = Kodashim; MK 6 = Toharot.
N Nathan ha-Meʾati
SAD M. Sokoloff, A Dictionary of Jewish Babylonian Aramaic of the Talmudic and Geonic Periods (Ramat Gan, 2002).


WKAS  M. Ullmann et al., Wörterbuch der klassischen arabischen Sprache (Wiesbaden, 1957–).

Z  Zerahyah Ben Isaac Ben She’altiel Hen