Medieval Egyptian Judaeo-Arabic Prescriptions

*(and the edition of three medical prescriptions)**

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The literature on medicine in medieval Muslim countries in general[1] and in Egypt in particular is vast and detailed.[2] Yet study and assessment of the practical aspects of medicine in the Mediterranean society of the Middle Ages requires examination of authentic, practical medical knowledge. At present this can be extracted mainly from the prescriptions found in the Cairo Genizah; these supply a different and valuable dimension. On the importance and the potential of research into the medical aspects of the Genizah documents, mainly prescriptions, Goitein wrote in 1971 that "these prescriptions have to be examined by experts in the history of medicine".[3]

In this spirit, the article attempts to contribute to a better understanding of everyday practical medicine in medieval Cairo as revealed by the prescriptions, mainly those written in Judaeo-Arabic (Arabic written in Hebrew script). Accordingly, answers are sought to the following research questions: A. Who wrote these prescriptions? B. Who prepared the medical recipes? C. Why did these practitioners use Judaeo-Arabic? D. What can be learnt from the Judaeo-Arabic prescriptions (about 1. medicine, 2. public/community health, 3. the use of *materia medica*, 4. level of scientific medical knowledge, 5. the relationship between medieval medical theory and practice)?

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I wish to thank the Syndics of Cambridge University Library for their permission to publish the Genizah fragments.

[1] M. Ullmann, *Islamic Medicine* (Edinburgh, 1978); M. Levey, *Early Arabic Pharmacology* (Leiden, 1973); D. Campbell, *Arabian Medicine and its Influence on the Middle Ages* (Amsterdam, 1926); L. I. Conrad, 'Arab-Islamic Medicine', in *Companion Encyclopedia of the History of Medicine* eds. W. F. Bynum & R. Porter (London, 1993), I, pp. 676–727; E. T. Hermann, 'Early Arabian Medicine', Bulletin of the Medical Library Association, 25 (1936–7), pp. 113–117; T. Arnold and A. Guillaume, *The Legacy of Islam* (Oxford, 1965); E. Savage-Smith, 'Medicine', in *Encyclopaedia of the History of Arabic Sciences*, ed. R. Rashed (London and New York, 1996), III, pp. 903–962; P. E. Pormann, and E. Savage-Smith, *Medieval Islamic Medicine* (Cairo, 2007).

[2] See, e.g., M. W. Dols (trans.) and A. S. Gamal (ed.), *Medieval Islamic Medicine, Ibn Riḍwān's Treatise* "On the Prevention of Bodily Ills in Egypt" (Berkeley, Los Angeles, London, 1984).

[3] S. D. Goitein, *A Mediterranean Society: the Jewish communities of the Arab world as portrayed in the documents of the Cairo Genizah* (Berkeley, Los Angeles, London, 1967, 1971), I, p. 210; II, p. 253.

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Description of the research

This research is based mainly on the Taylor-Schechter Genizah collection at Cambridge. All other collections are much smaller and some have not yet been catalogued. To date, beside Isaacs's catalogue[4] and our work in process on the Mosseri and John Rylands collections,[5] no specialist catalogue of medical fragments in the other Genizah collections has been published. A survey of the collections at the British Library, the Bodleian Library at Oxford, and the Hebrew University in Jerusalem shows that these contain very few Genizah fragments relating to medicine; mostly they are parts of books.[6]

All Genizah fragments at the Taylor-Schechter collections that were identified as medical by Isaacs and Baker, and a few dozen that have been identified as such since their book was published, have been studied carefully and were re-categorised according to certain criteria into five groups: books, notebooks, letters, lists of *materia medica*, and prescriptions.[7]

The main criteria applied in this research for a Genizah fragment to be identified as a prescription are as follows:

1. It names medicinal substances and quantities, and gives instructions on preparation.
2. A prescription is usually written on one page.
3. It is usually written on one side of a sheet of paper (very rarely vellum).
4. It is often written on reused paper (at times in the margin or in between the lines of other documents or even books).

The following elements are found rarely, but they are very helpful in identifying a fragment as a prescription:

1. Benedictions at the beginning or end of the recipe,[8] or both.[9]
2. Symptoms/diseases.[10]
3. The name of the inventor of the recipe.
4. The name of the medicine.[11]
5. Instructions for use (how many times a day, special diet, and quantities).[12]
6. The patient's name.[13]

Findings

By using these criteria while sifting through the Taylor-Schechter Genizah collection we were able to trace prescriptions, among other documents. One hundred and forty-one unique

[4] H. D. Isaacs with the (assistance of C. F. Baker). Medical and Para-medical Manuscripts in the Cambridge Collection (Cambridge, 1994).

[5] E. Lev, 'A Catalogue of the Medical and Para-Medical Manuscripts in the Rylands Genizah Collection, together with the edition of two medical documents' (forthcoming).

[6] Personal observations.

[7] E. Lev and Z. Amar, 'Medieval *Materia Medica* – Practice vs. Theory – the Case of the Cairo Genizah', *Medical History*, 51 (2007), pp. 507–526.

[8] E.g., T-S Or. 1081.J.39.

[9] E.g., T-S Ar.30.305.

[10] T-S NS J89; T-S K25.116; T-S NS 265.62.

[11] T-S AS 150.59.

[12] E.g., T-S Ar.30.305; T-S AS 142.22.

[13] T-S Or.1081.J.39.

prescriptions were found in the Genizah collection in Cambridge University Library, out of which eighty-three were written in Arabic, fifty-six in Judaeo-Arabic, one in Judaeo-Persian,[14] and one in Hebrew.[15] That only fifty-six of them, less than forty percent, were written in Judaeo-Arabic, the most widely used language and dialect in the daily life of medieval Cairo, calls for an explanation.

The Judaeo-Arabic prescriptions can be divided into three groups according to their state of preservation and origin: full/complete text,[16] damaged/partial texts,[17] and prescriptions in letters.[18] We consider these prescriptions an important element of medical knowledge in its practical form. These prescriptions reflect the state of medicine that actually existed; a unique aspect of the information that emerges from them is their originality.

Three medical documents

To give an idea of the various shapes of Judaeo-Arabic prescriptions that were found in the Genizah collection, three fragments have been chosen for publication. Here a picture of the original, the transcribed text, and a translation are presented.

1. T-S Ar.30.305 Prescription

Text:

1. بسم الله الرحمن الرحيم
2. בזר הינדבא וערק סוס מחכוך מן כל א' ג' דרה' חב
3. ברבאריס ותמר טרפא וקשר אלפסתק אלאעלי
4. מן כל א' ב' ורד מנזוע יגלא אלג'מיע
5. פי מאיה דרה' מא חתי יעוד אלי אלתלת ויצפא
6. עלי אוקיתין רב ספרג'ל ורבע דרה' טבאשיר
7. ויברד ויתנאול גרעה גרעה ואלגדא מן
8. פרוג במא חצרם ולוז מחמץ
9. نافع ان شاء الله

Translation:

1. In the name of God, the Merciful, the Compassionate
2. Chicory seeds and liquorice stems, of each three *dirham*s.
3. Berberry seeds, tamarisk, and pistachio shells, of each two
4. [*dirham*s], prepared rose. Boil it all

[14] T-S NS 281.158.

[15] T-S NS 90.65.

[16] T-S K25.116; T-S K25.212; T-S Ar.30.16; T-S Ar.30.305; T-S Ar.30.65; T-S Ar.43.238; T-S Ar.43.338; T-S Ar.43.47; T-S Ar.43.54; T-S Ar.43.71; T-S Ar.44.162; T-S Ar.44.181; T-S AS 148.22; T-S AS 152.34; T-S AS 155.365; T-S AS 173.3; T-S AS 214.96; T-S NS 194.70; T-S NS 218.21; T-S NS 222.34; T-S NS 223.82–83; T-S 12.33; T-S 16.291; T-S 8J14.3; T-S 8J15.20; T-S Or.1081.1.66; T-S Or.1081.J.39.

[17] T-S K25.116; T-S K25.212; T-S Ar.30.16; T-S Ar.30.305; T-S Ar.30.65; T-S Ar.43.238; T-S Ar.43.338; T-S Ar.43.47; T-S Ar.43.54; T-S Ar.43.71; T-S Ar.44.162; T-S Ar.44.181; T-S AS 148.22; T-S AS 152.34; T-S AS 155.365; T-S AS 173.3; T-S AS 214.96; T-S NS 194.70; T-S NS 218.21; T-S NS 222.34; T-S NS 223.82–83; T-S 12.33; T-S 16.291; T-S 8J14.3; T-S 8J15.20; T-S Or.1081.1.66; T-S Or.1081.J.39.

[18] T-S Ar.30.286; T-S Ar.46.97.

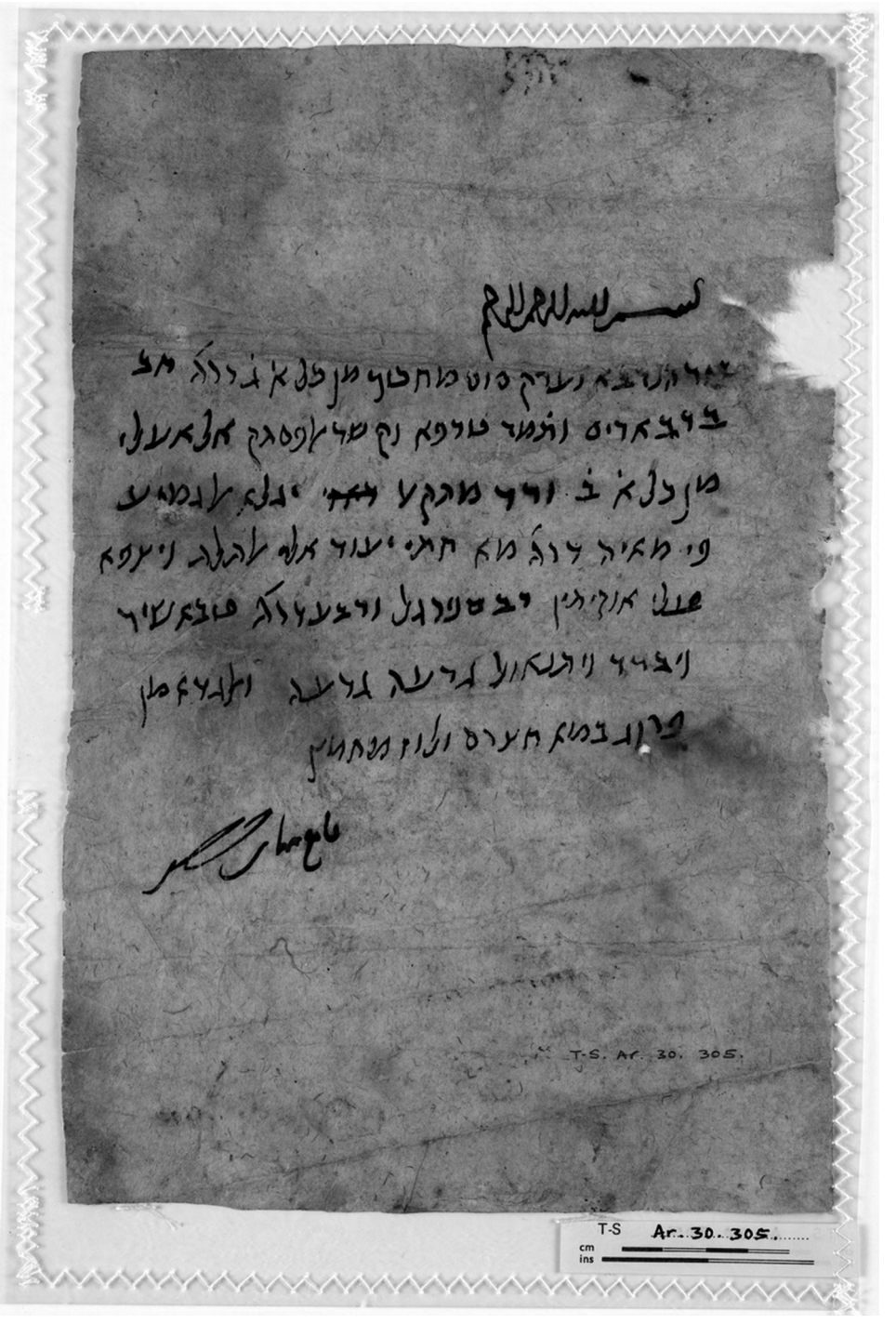

Fig. 1. Judaeo-Arabic prescription – with Arabic benedictions (T-S Ar.30.305).

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Fig. 2. Judaeo-Arabic prescription – with the name of patient written in Arabic at the beginning of the document and a benediction at the end (T-S Or.1081.J.39)

5. with one hundred *dirham*s of water until reduced to a third [of that amount]. Strain it
6. over two *ūqiyya*s of quince jam and one quarter *dirham* of chalk.
7. Cool it and take it mouthful after mouthful with a dish of
8. pullet [cooked] in sour grape-juice and pickled almonds.
9. Beneficial, if God wills.

2. T-S Or. 1081. J.39 Prescription (recto)

Text:

1. الشيخ ابو الحي
2. יוכד אהלילג כאבלי דרה' תרבד וגאריקון ויארג פיקרא מן כל א' נצף דרה'
3. ראונד ואפתימון ואפסנתין מן כל א' דנקין מקל אזרק ומלח דראני
4. ומצטכי מן כל א' דאנק יסחק אלגמיע ויצ'אף אליה דאנקין מחמודה ויעגן אל
5. גמיע בשראב ורד ויתנאול עלי חמיה סחרא במא חאר ופי אלסאעה
6. אלי? ישרב טוק רגלי פיה כף זביב אחמר מנזוע אלעגם וליסאן תור
7. ובסבאיג מרצוץ וסנא? מן כל א' דרה' ורד טרי מנזוע אלאקמאע
8. ה' עדדא ויקשט עלי שראב ורד ובזר ריחאן מגסול ואלגדא דגאגה
9. א ס בי ר ב א ג ויגיר אל - ענד אלקשט בכמר אביץ نافع ان شا الله؟

Translation:

1. The *shaykh Abū al-Hayy*
2. Take chebulic myrobalan, one *dirham*; turpeth and agaric and hiera picra, of each half a *dirham*;
3. rhubarb and dodder and absinth, of each two *dāniq*s; blue bdellium and *Andarānī* salt
4. and mastic, of each one *dāniq*. Grind all of it, and add to it two *dāniq*s of scammony and knead

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5. everything with rose syrup and take it at daybreak with hot water and at the time
6. drink from a circle of hard ground in which is a handful of red raisins cleaned of stones, and borage
7. and crushed polypody and senna, of each one *dirham*; fresh rose, cleaned of thorns,
8. five in number, skim over rose syrup and washed basil seed. Eat chicken
9. A S B I R B A J and change the . . . when skimming white wine. Beneficial if God wills.

3. T-S Ar.30.65 (recto)

Text:

1. [- - - - -]
2. יוכד עלי ברכתה שרב
3. כאבולי והנדי מן כל ואחד אוקיה
4. בלילג' ואמלג' מן כל ואחד רט[ל]
5. סנה מכי ואפיתמון אקריטי אוקיה
6. ואסתוכודוס ולבאן ולסאן תור שאמי
7. מן כל ואחד ה רט חגר ארמני וחגר
8. לאזורד מ נ ו ו ה מן ואחד ג' רט
9. זביב אחמר ועינוני מן כל ואח רט רטל
10. מנזוע מן אכד הר ק ט
11. חואיג' וירק אלזביב עלי חרה
12. ויצאף ללחואיג' ג' אואק סכר
13. ויוכד רט רטל ~~סכר~~ שראב
14. ג'לאב יעג'ן בה ויערק ערק
15. אן ג'ייד נ י ב ר א ת ו ם מ נ ב י י' רטל
16. ג' איאס מ ר א ו ל ב ו י ו כ' רטל ח ת ו א ט
17. שראב ורד ומא ורד ודהן ורד
18. וכ'מ ר א ם ו ת ק נ י ב ר י ו נ ר
19. ומחמודה
20. ללכראמיה

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Fig. 3. Judaeo-Arabic prescription – with a benediction at the beginning and the name of the patient at the end of the document [both in Judaeo-Arabic] T-S Ar.30.65 (recto)

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Translation:

1. [Unclear]
2. Take with God's blessing
3. Kabul and Indian [myrobalan] – of each one *ūqiyya*
4. Beleric and embolic [myrobalan] – of each one *dirham*
5. Mecca senna and Cretian dodder – of each one *ūqiyya*
6. Lavender and Syrian borage –
7. of each 5 *dirham*s; Armenian stone
8. and lapis lazuli – of each 3 *dirham*s
9. Red raisins and globular raisins – half a *raṭl* each,
10. to be pounded separately,
11. not together with the medicaments listed.
12. Add to the medicaments 3 *ūqiyya*s of sugar,
13. take half a *raṭl* of julep
14. for soaking the whole of it,
15. and knead it well. Use in doses of 10 *dirham*s
16. over 3 consecutive days.
17. As an appetiser take with rose sherbet, or rose oil,
18. or wine. God willing [the medicine will help]; for strengthening [its effect] take deodar and [or]
19. scammony.
20. For the *Karāmiyya*.

Discussion

As mentioned in the introduction, this article is concerned mainly with one aspect of the history of medicine of the Jewish community of Cairo (as a reflection of medieval Middle Eastern societies): the practical prescriptions written in Judaeo-Arabic as a source of medieval medical knowledge. Sources for such research of a medieval community are generally extremely rare, since all records of practical medicine naturally vanish over the years. The discussion is divided into seven subdivisions that emerge from the research questions and the study of various Genizah and other sources:

A. Jewish practitioners in medieval Cairo (who wrote these prescriptions?)

According to the Genizah, many medieval Egyptian Jews chose the medical profession for a wide range of reasons. That a large number of Jews engaged in the medical profession in Egypt and other Muslim territories emerges from other historical sources as well, mainly books by medieval biographers and historians of medicine such as Ibn Abi Uṣaybi'a.[19] This writer mentions more than fifteen Jewish practitioners whom he met or knew of in Cairo in his time and before.

[19] Ibn Abī Uṣaybiʿa, *ʿUyūn al-ʾAnbāʾ fī Ṭabaqāt al-ʾAṭṭibbāʾ* (Beirut, 1965) (Arabic).

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So far, sifting through Genizah fragments as part of an ongoing long-term project[20] has yielded the names of more than fifty physicians. Of several explanations for this phenomenon, Goitein's is still convincing and relevant, based as it is on his deep knowledge and understanding of medieval Mediterranean society, particularly its Jewish sector. Goitein explains the phenomenon of Jewish predominance in medicine not as the "continuation of the pre-Islamic tradition but as a contemporary development owing to the revival of the Greek sciences in Islam on the one hand and the efflorescence of trade with India and the Far East on the other". In his opinion medicine and pharmaceutics then experienced unprecedented exuberance and became almost new professions.[21]

Most of the fifty Jewish physicians found to date in the fragments lived and practised medicine in Cairo, with a few more in Alexandria and several small cities in Egypt, between the eleventh and the thirteenth century. Their titles (all signifying 'doctor'), according to the Genizah fragments, were *al-mutatabbib*,[22] *al-tabib*,[23] *ha-rofe*,[24] and *hakim*.[25] In a few cases titles reflect other communal positions the physician held, such as head of community: *nagid*,[26] prominence in the community: *parnas*,[27] or physician and judge.[28] Maimonides was called also *rais al-yahud*, which according to Goitein means official leader of the Jews.[29] For some of them we even have information on their specialisation: eye doctors,[30] a wound specialist,[31] and a physician who worked in a hospital.[32] As noted, most of the physicians worked privately in Cairo[33] or Alexandria,[34] others pursued their careers in small villages,[35] some practised in hospitals[36] and a select few in rulers' courts.[37] The Genizah fragments have immensely increased our knowledge of Jewish physicians practising in the Middle East and their status.[38]

B. Pharmacy, Jewish pharmacists and *materia medica* (who prepared these recipes and where?)

Pharmacy was the most popular of all branches of the healing art, according to the Genizah manuscripts. Goitein writes: "One need not delve deeply into the writings of the Cairo

[20] E. Lev, 'Work in progress – the research of medical knowledge in the Cairo Genizah – past, present and future', in *The Written Word Remains – The archive and the achievement*. Ed. S. Reif, Taylor-Schechter Genizah Research Unit at Cambridge University Library (Cambridge, 2004), pp. 37–51.

[21] Goitein, *op. cit*. note 3 above, II, p. 266.

[22] T-S AS 119.315v.

[23] T-S 13J5.1.

[24] T-S Or.1080 J 7.

[25] T-S 13J34.5.

[26] T-S T-S 13J8.1.

[27] T-S 10 J 7.8

[28] T-S 13J3.4; T-S 13J14, f.25.

[29] S. D. Goitein, "Maimonides' Life in the Light of the Geniza Documents', *Peraqim,* 4 (1966), pp. 29–42.

[30] BM Or.5566B.

[31] T-S NS J422.

[32] T-S NS 306.48v.

[33] See in detail Lev *op. cit*. note 20 above.

[34] T-S AS 152.131.

[35] See, e.g., a letter from physician who left his practice in a small village near Cairo and tried to establish a medical career in Cairo – T-S Or. 1018 J5.

[36] Goitein, *op. cit*. note 3 above, II, pp. 241–250.

[37] T-S NS 321.34.

[38] A. L. Motzkin, 'A Thirteenth-Century Jewish Physician in Jerusalem', *Muslim World*, 60 (1970): 344–349.

Genizah in order to discover that a great many of them refer to the professions connected with the processing and sale of drugs, spices, perfumes and potions for medical and culinary uses".[39] Elsewhere he states, "The prominence of the Jews in the professions of druggist and pharmacists during the High Middle Ages – which is paralleled by their equally strong representation in the fields of medicine on the one hand, and in that of the international trade in spices and drugs on the other – calls for comment".[40] The use of hand-books, classical *materia medica*, and medical books such as that of Dioscorides was an important part of their work. The Jewish religion too, as it developed in post-Talmudic times, had become very scholarly.

Ṣaydalānī[41] or *ṣaydalī* is usually translated as pharmacist or apothecary. There were specialists such as the *sufūfī* or preparer of medical powders.[42] The word *ṣaydalānī* is traditionally explained as dealer in sandalwood (*Santalum sp.*), so *ṣaydalānī*, like *ʿaṭṭār*, originally designated a perfumer.[43] The pharmacists were trained to collect and preserve the various medicaments brought from near or far-off lands.[44] The occupation of *ʿaṭṭār*, usually translated as perfumer or druggist, is among those occurring most commonly in the Genizah.[45] The *ʿaṭṭārūn* usually operated in a special section in the market named *sūq al-ʿaṭṭārīn*;[46] the equivalent *murabbaʿat al-ʿaṭṭārīn* is mentioned as well.[47] Very often patients bought their medicines from a drug seller. This roving herbalist probably relied for his sales not on a doctor but on his own diagnoses and suggested method of treatment, or on his clients' prescribing for themselves, that is, their self-medication (see Fig. 4).

Regarding the *materia medica* used in the recipes, 242 different substances were traced in prescriptions found in the Genizah, of which 195 are of plant origin, 27 are inorganic, and 20 are of animal origin.[48] Two hundred and six substances were traced in lists of *materia medica*.[49] Altogether, 278 substances were recorded in practical medical Genizah documents.[50]

C. Medical and pharmaceutical books as literary sources of practical formulae found in prescriptions (where did the medical know-how come from?)

Every medical book found in the Genizah belonged, in some way or at some stage of its existence, to a Jewish person, especially one in the medical profession.[51] According

[39] Goitein, *op. cit.* note 3 above, II, p. 261.
[40] Goitein, *op. cit.* note 3 above, II, p. 265.
[41] T-S NS.340.50, and few more, e.g., T-S 20.168; T-S K15.45.
[42] Goitein, *op. cit.* note 3 above, II, p. 261.
[43] *Ibid.*; see for examples of *ʿaṭṭār* T-S Ar.39.356r; T-S NS 340.50v.
[44] H. D. Isaacs (with the assistance of C.F. Baker). *op. cit.* Note 4 above, p. xi.
[45] See in detail Lev *op. cit.* note 20 above, table 1.
[46] T-S Or.1080 J23.
[47] T-S Or.1080 J38.
[48] E. Lev and Z. Amar, 'Reconstruction of the inventory of *materia medica* used by members of the Jewish community of medieval Cairo according to prescriptions found in the Taylor-Schechter Genizah Collection, Cambridge', *Journal of Ethnopharmacology*, 108 (2006), pp. 428–444.
[49] E. Lev, 'Drugs held and sold by pharmacists of the Jewish community of medieval (eleventh to fourteenth centuries) Cairo according to lists of *materia medica* found at the Taylor-Schechter Genizah collection, Cambridge', *Journal of Ethnopharmacology*, 110 (2007), pp. 275–293.
[50] Lev and Amar, op. cit. note 7 above.
[51] E. Lev and Z. Amar, *Practical Materia Medica of the Medieval Eastern Mediterranean according to the Cairo Genizah* (Leiden, 2007), pp. 16–17.

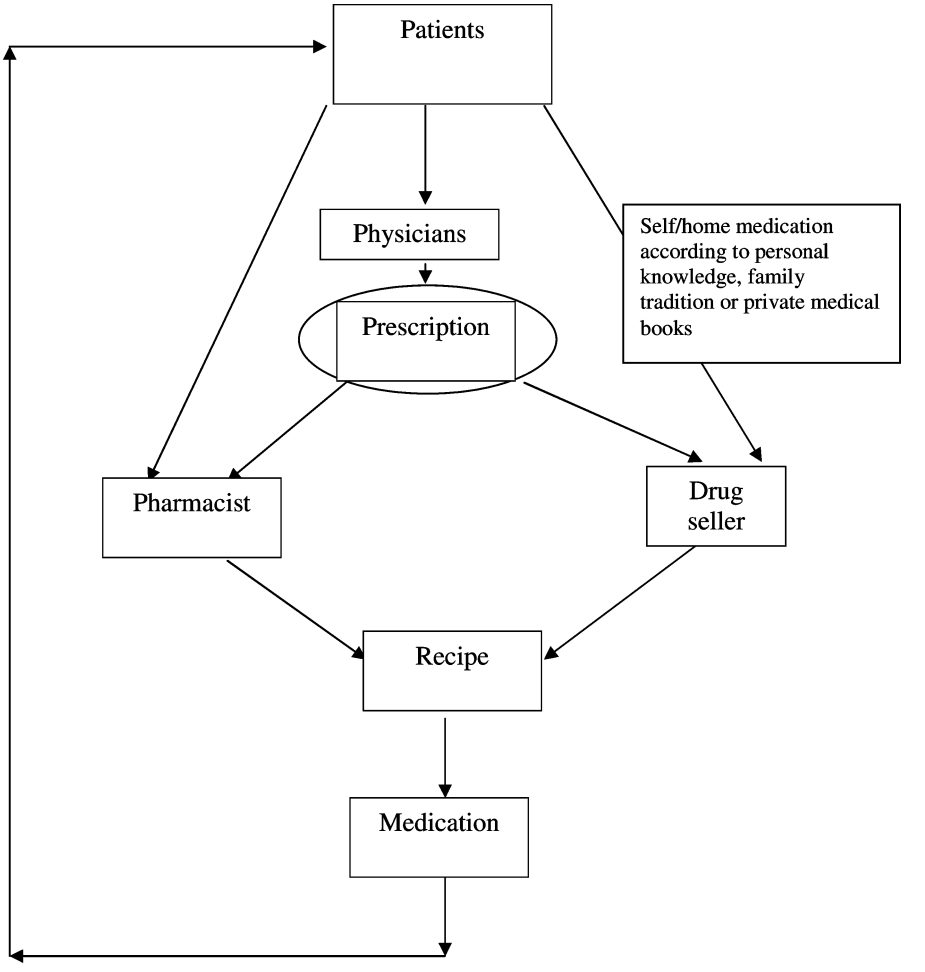

Fig. 4. The treatment cycle in medieval Cairo.

to our preliminary survey 35 different titles of medical books have been identified so far.[52]

Medieval pharmacists and physicians were required to be acquainted with the current handbooks of medicaments, such as the famous *Dustūr al- bīmāristānī* (Hospital Handbook)[53] by the Jewish (Karaite) physician Ibn Abī al-Bayān (thirteenth century) which was characterised by his pupil Ibn Abī Uṣaybiʿa as "comprising the compound medicaments generally prepared in the hospitals of Egypt, Syria and Iraq and in the shops of the apothecaries".[54] Though the book is short the author claims it contains all the medicaments

[52] See in detail Lev *op. cit.* note 20 above, table 3.

[53] Dāwud Ibn Abī al-Bayān, *al-Dustūr al-Bīmāristānī* (Arabic) in 'Le Formulaire des hôpitaux d'Ibn abil Bayan, médicin du bimaristan annacery au Caire au XIIIe siècle', P. Sbath (ed.), *Bullétin de l'Institut d'Egypte*, 15 (1932–33), pp. 9–78.

[54] Ibn Abī Uṣaybiʿa, *op. cit.* note 19 above, p. 584.

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commonly prescribed. Several parts of this book have been identified among Genizah fragments.[55]

A much bigger book, *Minhāj al-dukkān fī al-adwiya al-nāfiʿa lil- insān* (The shop guide – or How to run the [apothecary's] shop),[56] was written in 1259–60 by Abū al-Munā al-Kūhīn al-ʿAṭṭār. With time, this book became even more popular and was printed several times between 1870 and 2003. It served as a guide for traditional drug sellers, and still does.[57] A fragment of this book,[58] for example, was recently identified, and a critical edition of its eight pages has been published.[59]

These two books written by members of the community were among those most popular for the Genizah practitioners according to the number of fragments found and recognised as deriving from them, and according to the similarity of content of original Genizah prescriptions. As an example, one prescription,[60] written in Judaeo-Arabic, was copied, in all probability, from a recipe found in Ibn Abī al-Bayān's book al-*Dustūr al-bīmāristānī*, a treatment of eye diseases (Ṣifat al-shiyāf al-sabʿīni).[61] However, it seems to have been amended: not all the substances are the same and the quantities have been slightly altered. We presume it was part of the process of transforming theoretical knowledge (written in a book) into a prescription for use (depending on the existence and availability of medicinal substances in the markets and pharmacies).[62] More evidence of the same process is the several dozen personal notebooks identified in the Genizah collections. Their contents are medical theories, methods of healing, and selected prescriptions chosen and then copied for their own use by medical students or practitioners from books and oral knowledge coming from famous physicians whom they worked with or under. Preliminary research into this bulk of notebooks has revealed that most of them (written in Judaeo-Arabic) concentrate on one area of medicine, such as ophthalmology,[63] gynaecology,[64] or dentistry,[65] and others deal with various recipes. These can give us a first clue as to the most prevalent diseases among the members of the community.

D. Jewish patients in medieval Cairo (who used these prescriptions?)

Only a few prescriptions with patients' names have been found, presumably because the patient's identity would be obvious as prescriptions were individual. Patients were expected to receive their prescription directly from the physician and then bring it to the pharmacist

[55] E. Lev, L. Chipman, and F. Niessen, 'A Hospital Handbook for the Community: Evidence for the extensive use of Ibn Abī 'l-Bayān's *al-Dustūr al-bīmāristānī* by the Jewish practitioners of medieval Cairo', *Journal of Semitic Studies* 53 (2008), pp. 103–118.

[56] Abū al-Munā Dāwud b. Abī Naṣr al-Kūhīn al-ʿAṭṭār al-Isrāʾīlī, *Minhāj al-Dukkān wa-Dustūr al-ʾAʿyān fī ʾAʿmāl wa-Tarākīb al-ʾAdwiya al-Nāfiʿa li-l-ʾInsān* (Cairo, 1940) (Arabic).

[57] Goitein, *op. cit.* note 3 above, II, p. 264–265.

[58] T-S Ar.40.91.

[59] L. Chipman and E. Lev, 'Syrup from the apothecary's shop: A Genizah fragment containing one of the earliest manuscripts of *Minhaj al-dukkan*', *Journal of Semitic Studies*, 51 (2006), pp. 137–168.

[60] T-S AS 161.23.

[61] Ibn al-Bayan, *op. cit.* note 53 above, p. 59.

[62] Lev and Amar, *op. cit.* note 51 above, pp. 48–49.

[63] T-S K14.32.

[64] T-S Ar.45.21.

[65] T-S Or 1080 7.17.

to have it made up, so it would be clear for whom the prescription was meant. Even if a prescription was meant for someone too ill to leave the house, the bearer of the prescription would know who it was for. Here are some examples and a brief discussion of the most important names of patients found in prescriptions written in Judaeo-Arabic:

A. T-S Ar.30.65 – Karāmiyya (a woman from the Karām family, a common name in the twelfth to thirteenth century).[66]
B. T-S Or.1081.J.39 – The elder Abū Yaḥyā [shaykh Abū al-Hayy] (probably Nahray b. Nissīm).[67]
C. T-S NS 223.82–83 – Twelve short prescriptions were found written on a single sheet of paper, and they all had names of males and females, some of whom were related: al-Nafūs, al-Damīriyya, *zawjat* Abraham (wife of Abraham?); Ibn Siḥān (son of Siḥān), *zawjat* Ḥasan (wife of Ḥasan), Maḥāsin (male), Bintuhu (his daughter), al-Najīb, *ibnuhu* (his son) Farīj, Umm al-Zabbānī (mother of al-Zabbānī), *ibnuhā* (her son).[68] Sometime a pious wish, as a way of confirmation, was added too.

In several cases Goitein was able to identify the handwriting of the physician who wrote the prescription (e.g., T-S 1081.J.39; T-S Ar.30.65; T-S Ar.53.33).[69]

E. Health and diseases (what did the Jewish patients suffer from?)

Prescriptions can teach us about the prevailing diseases, and their symptoms, that members of the community actually suffered from. Unfortunately, in most cases neither the symptoms nor the patient's name appear on the prescription. However, analysing the prescriptions and some of the notebooks with the help of contemporary pharmacopoeias shows that eye diseases were the most prevalent ailments. The many fragments concerned with ophthalmology from many different medical books dealing with eye diseases are more evidence of this.[70] Other ailments were skin diseases, headaches, fevers, internal diseases (liver), intestinal problems, and haemorrhoids, as well as many others such as urinary trouble, ulcers, swellings, cough, and gynaecological illnesses.[71]

F. Reconstruction of the medieval Mediterranean medical treatment cycle (how did it actually work?)

Medical treatment usually began with a patient visiting a physician at his clinic, continued with the latter writing a prescription, which was subsequently put to use by the preparation of the formula by a pharmacist at his pharmacy. In the cases of self-medication, or when the patient consulted a pharmacist directly, no written prescriptions were involved in the process. Sometimes the physician saw patients in a rented room at the back of the pharmacy.[72] The

[66] Goitein, *op. cit.* note 3 above, II, p. 267, note 44.
[67] Goitein, *op. cit.* note 3 above, II, p. 266, note 29.
[68] E. Lev, L. Chipman and F. Niessen, 'Chicken and chicory are good for you. A Unique Family Prescription from the Cairo Genizah (T_S NS 223. 82–83)', *Jerusalem Studies in Arabic and Islam* (forthcoming).
[69] Goitein, *op. cit.* note 3 above, II, p. 266.
[70] Isaacs and Baker, *op. cit.* note 4 above, see indices.
[71] Lev and Amar, *op. cit.* note 51 above, p. 47.
[72] Isaacs and Baker, *op. cit.* note 4 above, p. xiv.

prescription stage is usually missing from historical records for various reasons: in some cases the physician made up the formula himself so no prescription existed, but presumably in more cases there was no reason to keep the prescriptions, and they were torn up or thrown away (see Fig. 4). This reconstruction is based upon Genizah texts, medieval medical literature,[73] as well as ethnopharmacological surveys and studies conducted in Israel,[74] Jordan,[75] Egypt,[76] Syria,[77] and other Middle Eastern[78] and Muslim countries.[79]

G. Medical prescriptions written in Judaeo-Arabic

The Judaeo-Arabic prescriptions generally have the following fundamental parts: 3–10 substances (mainly of plant, animal, and inorganic origin); quantities of the substances to be used (*awqiyya*, *dirham*), and cooking instructions (boil with, soak in, stir). On this basis, two main variations of Judaeo-Arabic prescriptions were found:

First variation[80] (see Fig. 1)
In the name of God, the merciful
Take xx, yy, zz,
Quantities (e.g., of each one *dirham*),
Instructions
Diet (eat/drink/use with . . . . .)
Help with God's will.

Second variation[81] (see Fig. 2)
Treatment / medicine for xxx/name of recipe/name of patient
Take xx, yy, zz
Quantities

[73] M. Levey, *The Medical Formulary of the Aqrabadhin of al–Kindi* (Madison, 1966); Ibn al-Bayan, op. cit. note 53 above; al-Kūhīn al-ʿAṭṭār al-Isrāʾīlī, *op. cit.* note 56 above.

[74] E. Lev and Z. Amar, 'Ethnopharmacological Survey of Traditional Drugs Sold in Israel at the End of the 20th Century', *Journal of Ethnopharmacology*, 72 (2000), pp. 191–205**;** E. Lev and Z. Amar, *Ethnic Medicinal Substances of the Land of Israel* (Tel Aviv and Jerusalem, 2002) (Hebrew); Y. Reiani, *Medicinal Substances of the Yemenite Jews.* Unpublished M.Sc. thesis, The Hebrew University in Jerusalem, 1963 (Hebrew); A. Ben-Yaʿakov, *The Traditional Medicine of the Babylonian Jews* (Jerusalem, 1992) (Hebrew); A. Abu-Rabia, *Folk Medicine among the Bedouin Tribes in the Negev* (Sde Boqer, 1983) (Hebrew).

[75] E. Lev and Z. Amar, 'Ethnopharmacological Survey of Traditional Drugs Sold in the Kingdom of Jordan', *Journal of Ethnopharmacology*, 82 (2002) pp. 131–145.

[76] M. Meyerhof, 'Der Bazar der Drogen und Wohlgeruche in Kairo', *Archiv für Wirtschaftsforschung im Orient* (Weimar), (1918), pp. 1–40, 185–218; M. A. H. Ducros, 'Essai sur le Droguier Populaire Arabe de l'Inspectorat des Pharmacies du Caire', *MIE*, 15 (1930); J. W. Estes and L. Kuhnke, 'French Observations of Disease and Drug Use in Late Eighteenth Century Cairo', *Journal of the History of Medicine and Allied Sciences* 39 (1984), pp. 121–152.

[77] G. Honda, W. Miki and M. Saito, *Herb Drugs and Herbalists in Syria and North Yemen* (Tokyo, 1990); F. Sanagustin, 'Contribution à l'Etude de la Matiere Medicale traditionelle chez les Herboristes d'Alep', *Bulletin d'Etudes Orientales*, 31 (1983), pp. 65–112.

[78] D. Hooper, *Useful Plants and Drugs of Iran and Iraq. Field Museum of Natural History*, Publ. 387 (Chicago, 1937); M. S. Ahmed, G. Honda and W. Miki, Herb Drugs and Herbalists in the Middle East (Tokyo, 1979); A. al-Rawi and H. L. Chaakravarty, *Medicinal Plants of Iraq*, Ministry of Agriculture Technology, Bulletin No. 146 (Baghdad, 1964).

[79] Ahmed *et al.*, op. cit. note 78 above.

[80] See, e.g., T-S Ar.30.305.

[81] See, e.g., T-S K25.116; T-S 8J15.20.

Instructions
Diet
Benediction.

Two letters written by Maimonides, in Judaeo-Arabic, containing medical advice and other issues have been discovered and are considered as prescriptions. These might be regarded as the "Third variation".[82]

Conclusions

It is important to state here that the author, like other scholars, strongly believes that theoretical and practical medicine among the members of the Jewish community of Cairo was the same as among the Muslim and Christian inhabitants of Cairo and the eastern Mediterranean. This was Graeco-Arabic medicine, irrespective of the language in which the books/prescriptions were written. However, prescriptions written in Judaeo-Arabic are clear-cut evidence and a reflection of practical medicine within the Jewish community of Cairo. Muslim or Christian physicians would not have used this language.

Understanding the reconstructed cycle of medical treatment and analysing it for the use of Judaeo-Arabic can lead us to the following insights/speculations, which also supply answers to most of the research questions set out at the beginning of the paper:

1. A Judaeo-Arabic prescription would have been written when at least two, more especially three, of the following agents (patient, physician, pharmacist,) were Jewish. We presume that a Jewish physician would not have written a prescription in Judaeo-Arabic for a Muslim or Christian patient, to prevent suspicions. Neither would a Jewish physician write in Judaeo-Arabic if the pharmacist was a Muslim or Christian (he would not have been able to read it).
2. A prescription was not needed at all if the patient went directly to the pharmacist or drug seller, or in the case of home/self-medication (see Fig. 4).
3. The "used" prescriptions were kept by the pharmacists or by the patients, and were deposited later with the rest of the written materials in the Genizah.
4. In a few cases the prescriptions are written in Judaeo-Arabic but the benedictions that open and close it are written in Arabic script (Fig. 1).
5. Letters written by medical practitioners contained detailed practical medical advice which can be considered prescriptions.[83]
6. We can also speculate that the reason most of the prescriptions (as well as fragments of medical books and lists of *materia medica*) were written in Arabic is that this was the daily and most used language, and commercial activity widely involved Muslims and Christians.
7. Medical treatment was a more private and intimate activity conducted within the limits of the various communities, so a substantial number of prescriptions were written in Judaeo-Arabic.

[82] E.g., T-S Ar.46.97; T-S Ar.30.286; see also S. M. Stern, *Corpus Codicum Hebraicorum Medii Aevi* (Copenhagen, 1956). Part I, III, pp. 12–21.
[83] E.g., T-S Ar.46.97; T-S Ar.30.286.

8. Moreover, all medical notebooks so far discovered in the Taylor-Schechter and other British collections are written in Judaeo-Arabic. This feature might be explained in various ways: the main one is that the Jewish practitioners (physicians as well as pharmacists) preferred to write in this language when copying medical information (including recipes) from books in Arabic and in Judaeo-Arabic into their private notebooks for their private and professional use.[84]

[84] I intend to deal with this issue in detail in a future publication.

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