Hayyim Vital’s “Practical Kabbalah and Alchemy”: a 17th Century Book of Secrets

Gerrit Bos

The Wellcome Institute for the History of Medicine, London, UK

Introduction

Hayyim Vital (1542–1620) is known primarily for his activities in the field of Kabbalah.¹ He recorded and edited the Kabbalistic teachings of his master Isaac Luria in the Shemonah Se’arim and added his own interpretation. Thanks to his activity Lurianic Kabbalah became the dominant system of Jewish mystical thought, eclipsing all others. But he was active in other literary fields as well. His Sefer ha-Hagyonot (Book of Visions) is an impressive autobiographical document which chronicles his inner emotional struggles and their manifestations in his dreams as well as his daily life.² In addition to his esoteric works, he composed responsa, commentaries on the Talmud, and sermons.

About the special interest he took in secular sciences we are informed by his work on astronomy entitled Sefer ha-Tekhunah,³ and by his Kabbalah Ma’asit we-Alkimah (Practical Kabbalah and Alchemy), which is extant in

¹ I thank my friend Eric Pellow for proofreading the manuscript, and for pointing out parallel sources in Vital’s Kabbalistic writings.
² For his bio- and bibliographical data see Gershom Scholem, Kabbalah, Jerusalem 1974, pp. 443–8.
an autograph MS in the Musayyoff collection. Gershom Scholem was the first to draw the attention of the scholarly world to this text in an article published in 1925. Meir Benayahu dealt with it in two articles and in his monograph on the "biography" of Vital's teacher, Isaac Luria (the Ari). In the articles he gave a brief description of the MS, its history and contents, as well as some concrete examples of different remedies recommended by Vital; in his monograph Benayahu discussed the texts dealing with exorcism. After Vital's death in 1620 the MS passed into the hands of his son, Samuel, who added indices and some incantations in Ladino. It had several other owners as well, some of whom added material of their own. On the date of composition of this MS, Benayahu remarks that it was penned in Vital's later years, after 1610, while he was living in Damascus. He notes, however, that Vital was already engaged in the study of magic and science when he was still a young man, between 1566 and 1568.

**Structure of the text**

The first part of the *Kabbalah Ma'asit*, originally consisting of nine folios with different praxes by means of holy and demonic names, seals and incantations, is no longer extant. The second part, fols. 10a–33b, contains a variety of operations, natural and magical, as well as remedies. The third part of the MS, fols. 34a–101b, deals with chemical operations concerning the seven metals. It consists of two sections, fol. 34a-fol. 47b, and fol. 48a-fol. 101b. The latter section is divided into two sub-sections. In the first sub-section, fol. 48a-54b, Vital records experiments which he performed with some success, but which he did not repeat often enough to verify. The second sub-section, fol. 55a-fol. 101b, contains experiments which he did not carry out himself, but either derived from ancient sources or heard from reliable informers. The fourth part of the MS probably covers fol.

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4 I thank the Ben Zvi Institute for providing me with a copy of the microfilm of this MS in their possession. For the MSS of the Musayyoff collection see Joseph Avivi, *Obel Shen*, Jerusalem 1992; for this MS see no. 219 in the catalogue.


6 See op. cit., note 3 above and his "Liqquṭim mi-Sefer ha-Refu'ot ve-ha-Segullot shel Rabbi Hayyim Vital," *Qunt* IX, 5–6, Jerusalem 1987, pp. 91–112.

7 *Sefer Toledot ha-Ari*, Jerusalem 1967, pp. 100–2, 290–306.

8 See fol. 130a: "Since I found these magical remedies (Segullot) written by my blessed father and teacher I have gathered strength and added indices."

9 See Benayahu, op. cit., note 3 above, p. 6.

10 See Benayahu, op. cit., note 3 above, p. 7; Avivi, op. cit., note 4 above.

11 See Benayahu, op. cit., note 3 above, p. 5.

12 In this section fols. 86b–87b and 89a–b are missing on the microfilm of the Institute of Microfilmed Hebrew MSS at the Hebrew University.
102a until fol. 109b; it deals with things which Ḥayyim Vital heard from true informers and which were thoroughly tested. The fifth part, from fol. 110a until fol. 123a, contains praxes which Ḥayyim Vital found in books, and which he did not try, or did not try successfully.

The following sections have been added to Vital’s original text:
1. Fols. 2a–4b: a list of plant names in Ladino by R. Shlomo Musayoff;
2. Fols. 7a–9b: heterogeneous material, for instance, a section with different amulets against the plague by Vital and Abraham Azulai.
3. Fols. 11a–15b: different remedies and amulets; for instance, an amulet by Shalom Mizrahi against the plague (fol. 14a).
4. Fols. 116a–b: fol. 116a contains two fragments entitled “Arba’ Kittot she-Einan Meqabbilot Penei Shekhinah,” and “Inyan Hibbuṭ ha-Qever” added by Ḥayyim Vital himself, and introduced by the remark that they do not belong over here; fol. 116b deals with a variety of subjects.
5. Fols. 118b–120b: this section contains a variety of magical praxes and subjects.
6. Fols. 125a–126b.
7. Fol. 129b: To this leaf material was added by Samuel Vital, and by his son Moses.

The work in historical context

The text of the *Kabbalah Ma’asit* covers a wide variety of subjects, mostly in the form of practical recipes, in the fields of magic, medicine, technology, metallurgy and chemistry. A collection of so many different recipes from these fields in one composition does not make the *Kabbalah Ma’asit*

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13 My description of the last two parts is based on the remarks of Benayahu, who noted the ambiguous division of the latter half of the MS. It is difficult to determine where the third part ends and the fourth begins because Vital did not indicate a division and because his son imposed a different five part structure on the latter half of the MS. See Benayahu, op. cit., note 3 above, p. 9. In this section fols. 105b–106b are missing on the microfilm.

14 Of this section the first part dealing with remedies found in books and originally covering fols. 110a–113b, is incomplete, with fols. 111b–113b wanting. It should be noted that the text of the whole treatise has an original numbering, in accordance with the indices by Samuel Vital, and an additional one, taking into account the sections added later on. The pagination used here is that of Samuel Vital, since it concerns the original treatise. When I discuss the different recipes given by Ḥayyim Vital, I will refer to this original numbering.

15 It deals with the production of a magical ring for protection: “Ma’aseh ha-Tabba’at ha-Amitti Li-Shemirah.”

16 This pagination taking into account the additional sections, is the one added later on.

17 For the term *Kabbalah Ma’asit* (practical Kabbalah) as opposed to *Kabbalah ‘Iyyunit* (theoretical Kabbalah) see Schollem, op. cit., note 1 above, pp. 182–9; esp. p. 183: “In effect what came to be considered practical Kabbalah constituted an agglomeration of all the magical practices that developed in Judaism from the talmudic period down through the Middle Ages.”
similar to encyclopaedias composed by Jewish physicians, such as the *Sheveti Emanuah* by Me'ir Aldabi (c.1310–1360), which is basically a popular medical encyclopaedia, but to a genre of “catch-all recipe books” or “do it yourself formularies” known as the “books of secrets.” Such collections were, as Multhauf remarks, “made up with slight discrimination from many sources medical, alchemical and practical, and achieved enormous popularity in the sixteenth and seventeenth centuries.” One might say that Vital’s *Kabbalah Ma’asit* is a kind of Hebrew counterpart to these “catch-all recipe books,” the prototype of which may have been the 13th century *Liber sacerdotum*. In Arabic literature such a treatise has not yet been discovered. Vital made his collection even more complete by adding magical material to it. Sometimes the recipes recommended by the author in the various fields discussed by him, like magic, medicine, and technology have a distinctly Jewish character.

Vital’s *Kabbalah Ma’asit* displays an aspect of his personality completely different from the one revealed to us in his theosophic works. In it he stands revealed as someone deeply involved in major scientific areas, not only on a theoretical level, but also on an experimental one. Many of the experiments reported in this work were performed by himself. His chemical experiments give us a picture of a chemist who not only describes and assesses experiments found in chemical literature and known to the goldsmiths, but also tries novel procedures. Although he quotes the theory of transmutation, alchemy plays no role in the central section on chemical manufacturing processes. In these aspects his activity is reminiscent of that of contemporary chemists who had, according to Holmyard, “shaken themselves free from the bondage of the past and were extending the bounds of empirical chemical knowledge.” His activity surpasses that of the author of the *Probierbüchlein*, a small handbook for the use of miners and mining chemists or assayers which was very popular in the West from the 16th until the 18th century. For its author had, according to Ciscop—

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18 For the argument that the *Kabbalah Ma’asit* is similar to Aldabi’s *Sheveti Emanuah* see Benayahu, op. cit., note 3 above, p. 5. Besides the medical element the *Sheveti Emanuah* is characterised by a strong theoretical element, with long excursions on different subjects. It is not in the first place a collection of recipes.


20 Ibid., p. 212.

21 Ibid., p. 159, esp. n. 40.

22 “Ke-Derekh she-‘Osin Kol ha-Ẓorefim” (As all the goldsmiths do). This phrase returns repeatedly in the section on chemistry, cf. fol. 40a, nrs. 58–9; fol. 40b, no. 63; fol. 39b, no. 57: “ka-Nahug be-Yad Kol ha-Ẓorefim”.


24 Cf. *bergwerk- und Probierbüchlein. A translation from the German of the Bergbüchlein, a sixteenth century book on mining geology*, by Anneliese Grünhaldt Sisco, and of the *Probierbüchlein, a sixteenth century work on assaying*, by Anneliese Grünhaldt Sisco and Cyril Stanley Smith, with technical annotations and historical notes, New York 1949 (hereafter *Probierbüchlein*).
Smith, "clearly not worried about why things should be done the way they were, and he never encourages experiment to find a quicker, better, or even cheaper way of achieving his ends."  

The section on magic, which betrays the strong influence of Ashkenazi sources, shows us someone deeply involved in magic, on both the theoretical and active planes, and absolutely convinced of its efficacy. Magic played a central role in the daily life of the people in the 16th century, both in the Middle East and in Western Europe, as we know from the penetrating study by Keith Thomas. Magic was also an important aspect of 16th century medicine, and many of the recipes recommended by Vital have an unmistakably magical character. Animistic and magical lore was prominent in the Near East already prior to Islam, and was thus a feature of medical discussion from the very beginning. It was, for instance, prominent in the composite Syriac Book of Medicine, "which highlights a society in which some practitioners had a detailed knowledge of the materia medica of Dioscorides and the works of Galen and other formal medical writers, but in which people were also wary of the evil eye, convinced of the powers of charms and amulets . . . ." Vital thus continues an old tradition combining the data of scientific Galenic medicine with contemporary folklore.

The section on medicine portrays Vital as a practising physician, thoroughly acquainted with medieval scientific medical theory. This theory is based on the works of Galen (2nd century AD), which were by the second half of the ninth century almost completely translated into Arabic and thus accessible to Arabic and Jewish physicians. The compendia comprising summaries of Galen's major works, produced in Alexandria and called the "Summariar Alexandrinorum" were also readily available in translation. Galen's teachings thus had a dominating influence on Jewish and Islamic physicians, including Vital.

But the Kabbalah Ma'asit not only shows us different aspects of Vital's personal activity, but also of the economic life of Safed in his days. Galilee in general and this city in particular profited much from the large influx of exiles from Spain in the 16th century. It became an important center for the manufacture and sales of fabric, which was concentrated around a particular marketplace and which provided ample employment for Rabbis and scholars. Other special markets were for the traders in currency, especially gold and silver, and for agricultural products. The different facets of the

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25 Ibid., p. 188.
Safed economy are reflected in many recipes featuring in this composition.

Another interesting aspect of this work is linguistic. Vital employs a remarkably varied terminology, and many of the technical terms in his recipes are in Arabic, which are often accompanied by the relevant term in Ladino. In some cases Vital uses Greek and Portuguese terms, and once a Turkish, a German, and an Italian term. The Arabic technical terminology betrays a thorough familiarity with the standard vocabulary as it features in the relevant Arabic literature. In one case magical praxes are recommended containing adjudations in Arabic, and in another case recipes for the coagulation of mercury are given in Arabic. The Hebrew vocabulary employed by the author contains several technical terms which are not found in the dictionaries of Ben Yehuda and Even Shoshan. Examples are: ba-Mayim ba-Hazaqim (nitric acid); Gofrit ha-Lavan (white lead); Melah Shuten (sal volatile); Harig ha-Barzel (iron channel). The term Even Bohan (touchstone) does feature in the dictionaries, but is registered as modern by Even Shoshan, and as post-Geonic by Ben Yehuda, while the example given by him is from the Reshit Limmudim by Barukh Lindau (1759–1849).

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20 Some divinations (kehashin) in Ladino were added to the text by R. Ḥayyim Ben R. Abraham; see fol. 54a, nrs. 89–92, fol. 54b, no. 103, for incantations against different diseases as, for instance, erysipelas (esh zartez; fumos) which are introduced by: “In nombre del Dios”.
21 See, for instance, the section on technology, dealing with the dying of garments, where he employs the term bil armenike (Armenian earth).
22 Fol. 29b: In a recipe for carbuncles he recommends to take a plant called “yerba hayra” in Portuguese (bi-Leshon Portugal); fol. 85a, in a recipe for bladder stones he recommends the leaves of a plant called “pinheiro del infiero,” see Benayahu, op. cit., note 6 above, p. 93.
23 In a recipe for lice in the beard (fol. 73b, no. 310) he recommends to take “mevzaq bi-Leshon Togarmah.”
24 Fol. 24b, no. 173: In a recipe for nose bleeding he recommends to take the juice of nettles which are called “ortiga” in Spanish (be-Latos) and “urtia” in German (bi-Leshon Ashkenaz).
25 Fol. 50a, no. 42: A herb called “cardinila” in Italian (bi-Leshon Italiad).
26 Fol. 91a, nrs. 164–7; see section I, nrs. 9, 11.
27 Fols. 92a–b, no. 178.
29 See section IV.
30 Fol. 61a, no. 64; Arab. isfida; Lat. blanchetuer, see Dietlinde Goltz, Studien zur Geschichte der Mineralien in der Pharmazie, Chemie und Medicin von den Anfängen bis Paracelsus. Wiesbaden 1972, pp. 246–7.
32 Fol. 39b, no. 53; see section IV; it possibly means a kind of “iron crucible.” For the term Harig, Aramaic harige, see Marcus Jastrow, Dictionary of Talmud Babli, Yerushalmi, Midrashic literature and Targumim, 2 vols. New York, 1950, vol. 1, p. 502: “channel, Targum Joshua 11, 8 Harige yaamah: “channels for the manufacture of salt”; the Hebrew text has mikrafol.”
Sources


Since the text is not very well organized and similar material can be found scattered throughout, I have sorted the recipes into four basic categories that reflect the interests of the author. These categories are: I. Magic. II. Medicine. III. Technology. IV. Metallurgy and Chemistry. At the end of my survey I add a section with some material belonging to neither of the mentioned areas, but rather to that of folklore, superstition, and astrology. Since Vital’s treatise is very extensive containing hundreds

which has yet another title, namely, Sefer Hakhmot ha-Yad (p. 16), while on p. 127 a section starts with yet another, namely, Divrei Hakhomim (cf. Steinschneider, Cat. Bodleian, 929ff.). It should be noted, however, that this MS contains much magical material parallel to that in Vital’s treatise. A striking example is the computation if a sick person will recover from his illness or is going to die, which is accompanied by a drawing of two circles on pp. 57–8, and in Vital’s treatise on fol. 82a, no. 111 (see section II, esp. note 350).

* Fol. 66b, no. 174. The following text is cited from this work: “When someone who has been bitten by a snake sees copper, he will die immediately.” I could not identify this author.

* This text is quoted twice: a. Fol. 69b, no. 242. This quotation, discussing different dates of giving birth for a woman, namely, 271 days, 278 days, or 222 days, does not feature in the existing version edited by Daniel Chanan Matt, The Book of Mirrors: Sefer Mar‘ot ha-Zore‘ot by R. David ben Yehudah he-Hasid, Chico, Scholars Press, 1982. It is thus another indication for Matt’s suggestion that this work was originally longer (see Matt, p. 8); b. Fol. 72b, no. 289: This quotation dealing with the Sad (mystical secret) hidden in the verse “the same ritual and the same rule shall apply to you and to the stranger who resides among you” (Num. 15: 16), features in Matts edition, p. 289, 1. 28–p. 290, 1. 10.

* Fol. 72b, no. 295. The tradition recorded here by Hayyim Vital deals with a magical praxis for protection against rulers. For another tradition quoted in the name of Rashi see the section on superstition.

* Fols. 55a–57b, nrs. 1–89: It is a popular encyclopaedia, composed by Meir Aldabi (see introduction).

* Fols. 79a–81a, nrs. 1–92. Vital quotes 100 segulot (remedies, often of a magical nature). Its author is Judah Aryeh of Modena (1571–1648).

* Fol. 121a. My transcription of this surname which features as “ALBMW”, but also “BMW”, is hypothetical. This section (fols. 121a–123b) deals with several magical praxes, but above all exorcisms, about which Hayyim Vital remarks that they all have been tested by R. Yehoshu‘a Album; see section I, nrs. 1, 10.

* Fol. 78a, no. 408; see section III.

* Fol. 114b, no. 11. Unfortunately, the first name is completely wiped out, while the surname misses the first letter; the other letters are: “qysps”. The recipe deals with the hardening of lead.

* Fol. 114b, no. 10; it concerns a formula given by the Rambam to his student for turning tin into gold.


* Fol. 51b, no. 62; fol. 69b, no. 236 (see the section on superstition, below); fol. 86a, no. 76; fol. 90a, no. 153; fol. 108b, no. 154.

* Much magical material can also be found in the section dealing with medicine.
of recipes, I have restricted myself to a, in my view, representative selection from these areas.

I. Magic

Because of his youthful obsession with magic between 1566 and 1568, when he used to visit fortune-tellers, Vital was rebuked by his teacher Isaac Luria. When he heard about these magical experiments of his student, Isaac Luria told him to “rectify” (le-Taggen) the two and a half years that he neglected his study of the Torah. However, Luria was not opposed to magic, and especially that of holy names, on principle; his opposition was rooted in ritualistic considerations, for instance, that his generation lacked the required degree of purity, that it wanted the ashes of the red heifer, or that the holy names had become distorted in the process of transmission. Vital repeats these reasons in his warning against their use as aids in the mystical ascent in his Sha'arei Qedushah, which he composed around 1590. From the text of the Kabbalah Ma'asit, however, it is evident that Luria’s attitude towards the use of holy names was not always negative. Hayyim Vital records an incantation against robbers consisting of the holy names YH YHWH Zeva’ot TG\*SH, which he received from Luria, and which he reports has been tested. In Sha’ar Ru’ah ba-Qodesh Vital relates how he heard from Rabbi S. Sagis that Luria’s father was saved from robbers by means of an incantation of the name MZMZYT. The extent of Vital’s own magical activities is revealed in his statements that he wrote more than two thousand amulets for the protection of the new-born against Lilith and that they were all effective, and that he has repeatedly tried an incantation against a roaring sea. Even if one allows for exaggeration, such statements surely indicate a protracted period of magical activity. It is therefore reasonable to assume that in spite of the rebuke by his master, Vital continued to practice certain kinds of magic while living in Safed, especially those connected with his activity as a physician. But when he moved to Damascus around 1598 and started to

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74 See Benayahu, op. cit., note 3 above, p. 5; cf. idem, op. cit., note 7 above, pp. 290–5; Aescoly, op. cit., note 2 above, p. 152.
75 See Benayahu, op. cit., note 7 above, p. 291.
76 Sha’arei Qedushah, Jerus. 1926, III, chs. 6,7.
77 Fol. 63b, no. 95. See as well section I, no. 3, for an amulet for favour with rulers and kings received from Isaac Luria.
78 Sha’ar Ru’ah ba-Qodesh, Jerus. 1912, fol. 29b.
79 See below, section I, no. 4, and section II; and see addenda.
80 Benayahu, op. cit., note 7 above, p. 291, suggests that Vital gave up magic after the rebuke by the Ari and became active again after the death of Isaac Luria, and especially when he moved to Damascus; see as well idem, op. cit., note 3 above, p. 5.
study with R. Yehoshu’a Album, he not only continued these magical practices, but became deeply involved in other ones as well.\textsuperscript{86} It was here that he consulted an Arab exorcist named Ibn Ayyub in the year 1604 with regard to a severe illness affecting his eyes.\textsuperscript{87} In 1609 he accompanied R. Yoseph Segora to consult another Arab exorcist, who in his turn visited Vital the next day.\textsuperscript{88} In 1610 R. Yehoshu’a Album adjured an angel to descend for consultation by Vital.\textsuperscript{89}

Prominent themes in the field of magic treated in the \textit{Kabbalah Ma’asit} are:

1. \textit{Necromancy}: The “She’elat Halom” praxis, in which one adjures the dead to appear during one’s dream in order to answer a question. Vital remarks:

To summon the dead to appear in someone’s dream. Go to his grave, imagine that he is standing asleep before you, call him three or four times, so that if he would be alive he would wake up, and tell him: Know that I only came to disturb you because I want to hear from you about so-and-so, therefore come to me this night in a dream and answer my question. I am taking some earth from your grave and with that I am taking your spirit (ma’al), so that you will be forced to answer me my question and I adjure you in the name of Dumah,\textsuperscript{90} angel of the souls and of ‘Azuzi’el, master of the spirits, in charge of the bones of the dead, and in the name of the angel Hofni’el his master,\textsuperscript{91} who has one thousand mouths and in every mouth one thousand tongues and from every tongue come forth one thousand flames to burn the spirits who revolt and do not listen to the adjurations of mankind, that you will come to me this night and give me an answer to my question. Thereafter when you go to sleep during the night, take the earth in your hand while dressed in a white linen garment and repeat the mentioned adjuration and put the earth at your head between your pillow and mattress. It is good when you adjure a dead person who is honest and decent, for he will not refuse. This is a common tradition.\textsuperscript{92}

Vital’s many and variable accounts of the “She’elat Halom” technique,\textsuperscript{93} probably reflect its importance to his contemporaries. Moreover, we know that he actually tested several variants of this praxis, the results of which experiments he recorded in the section entitled: “I also tested these magi-

\textsuperscript{86} See Benayahu, op. cit., note 7 above, pp. 291–5.
\textsuperscript{87} \textit{Sefer ha-Hayyim}, op. cit., note 2 above, pp. 11–22.
\textsuperscript{88} \textit{Ibid.}, pp. 13–8.
\textsuperscript{89} \textit{Ibid.}, p. 37.
\textsuperscript{90} For Dumah, already featuring in Rabbinic literature (TB Berakhot 18) as angel of the dead, see Moïse Schwb, \textit{Vocabulaire de l'angéologie d'après les manuscrits hébreux de la Bibliothèque Nationale}, Paris, 1897, p. 101.
\textsuperscript{91} For Hofni’el, in charge of the angels, see Re’uven Margaliot, \textit{Ma’akhei ‘Elyon}, Jerusalem 1945, p. 60.
\textsuperscript{92} Fol. 8a, no. 45. All translations are by the present author, unless indicated otherwise. Since the text is highly elliptical, the translation is paraphrastic rather than literal.
\textsuperscript{93} Fol. 67a, no. 176; fol. 71b, no. 400; fol. 77a, no. 390; fol. 82a–b, no. 6 (hailing from Fes); fol. 83a, no. 11 (amulet ensuring the success of this technique); fol. 84b, no. 45 (from the \textit{Ramah} which he heard from R. Shabbetai), nrs. 47–9; fol. 88b, nrs. 111–2; fol. 90a, no. 152; fol. 104b, no. 64; fol. 121a, no. 8 (tested by R. Yehoshu’a Album).
cal techniques, but without success." One of these techniques which he learned from R. Lappidot, is described as follows: "Pronounce the verse: 'Open my eyes that I may perceive etc.' (Ps. 119: 18) thirty-three times. Ask your question and go to sleep. But take care not to get angry during that whole day."

The "She'elat Halom" praxis is well attested in medieval literature. It features in the writings of the Hasidei Ashkenaz (12th-13th century), whence it entered the literature produced by the Kabbalists of Spain (13th-15th century). It features, for instance, in the Ma'amor 'al ha-Agitut ha-Semalit by Isaac Ben Jacob ha-Kohen (13th century). Later we find the same technique being employed by the Kabbalists in Safed (16th-17th century). However, the praxis was not restricted to those seeking mystical revelations. Several Halakhic authors refer to this technique for solving legal problems. Jacob of Marvège (13th century) devoted a monograph entitled She'elot u-Teshuvot mi ha-Shamayim, to the Halakhic insights he gained using this method. A "She'elat Halom" often involved special preparations, such as fasting, ritual cleaning, and the wearing of certain garments. Such preparations may have induced an altered state of consciousness. The answer to a "She'elat Halom" usually consisted of a Biblical verse which was interpreted according to certain rules. A different version of this technique, mentioned by Vital, is the "She'elah be-Haqiqot," in which the answer to one's question was received when one was awake.

2. Magical tricks: To find out which of three people is holding the gold piece, which the silver piece, and which the copper piece, in their hands, or to discern the precise hour of the day or night. To create an optical illusion Vital suggests that one:

Make a hole in a wall, put a live frog in it, seal it well, leaving a small hole no larger than an eye in it. Draw on the outside of the wall the form of a crow in a way that its eye will be exactly in the place of the hole. Put a burning lamp close to that hole, and when the live frog in the hole sees the lamp it will croak loudly. The listeners, however, will think that it is the crow which has been drawn on the wall that is croaking.

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54 Fols. 116a–117a, nrs. 5–22.
55 Fol. 116a, no. 9; cf. addenda.
56 Ma'amor 'al ha-Agitut ha-Semalit, ed. by Gershom Scholem in: Madda'ei ha-Yahadut, vol. 2, Jerusalem 1927, pp. 297–8. For my account of this technique I am indebted to Professor Moshe Idel who dealt with it extensively in a seminar given at The Hebrew University in the academic year 1984–85.
57 Ed. by Re'uvén Margaliot, Jerusalem, 1956. In the introduction Margaliot gives an extensive account of many different sources mentioning this technique.
58 Fol. 64b, no. 108; fol. 117b, no. 23.
59 Fols. 7a–b, nrs. 38–44.
60 Fol. 66b, no. 159.
Other optical illusions discussed are those of a house full of snakes or of vines, and a house through which flows a large river. These magical tricks belong to the category of nirandj, a term derived from the Persian, which designates the operations of white magic, such as fakery, counter-fakery, and the creation of illusions. These techniques were already popular in Hellenistic times, and can be found in a literary genre called khawass (physica), allegedly originated by Bolus of Mendes (c. 200 BC). This subject enjoyed a great popularity in the Muslim world judging by the large number of monographs treating it.

3. Favour. The following incantations and amulets are recommended: “If you mention the name ATNIQ prior to your appearance before a ruler who is angry with you, you will find favour in his eyes. “If you hang [the name] ZMRKD on a silver plate on your arm you will find favour in the eyes of the king.” Another technique to find favour with kings and rulers, which technique Hayyim Vital took from the Rama? (perhaps Moses Cordovero), is to make a ring from metals such as silver, gold, copper, tin, lead, iron, and bronze; it should be prepared on Saturday night before cockcrow, under the astrological sign Sagittarius. According to a tradition derived from ha-Ashkenaz (Isaac Luria), a magic ring must be made of gold on Monday or Thursday during the reading of the Torah, or according to another version, when the cock crows during the week of the portion “Jacob lived.” Then one should engrave the name BPPY on the ring and concentrate one’s thoughts on him who is to wear it. The bearer of the ring will find favour in the eyes of kings and rulers, just like Joseph when he stood before Pharaoh.

4. Protection: For travellers: Different incantations are recommended for dangers such as enemies, robbers, demons, and losing one’s way. A distinctly Jewish praxis recommended for someone who has lost his way, is to imagine the place where he left the willow-branch and Lulav on Hosha"na.

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103 Fol. 92b, nrs. 183–4, 186.
104 See Encyclopedia of Islam. New Edition. Leiden 1960ff (hereafter E.I.), vol. 8, pp. 51–2, s.v. niranaj (T. Fahl); Manfred Ullmann, Die Natur- und Geheimwissenschaften im Islam (Handbuch der Orientalistik I, Ergänzungsband VI, 2), pp. 393–426; see also addenda. For another trick how to win with dice see fol. 86a, no. 71, and fol. 90a, no. 148 for the taming of a hen which can then be used for thefts from houses.
106 Fol. 72b, no. 288; for other praxes see fol. 91b, no. 168; fol. 96a, no. 213; fol. 116a, no. 2.
107 Ibid., no. 290. The identification is a conjecture since only the letters RM are readable, and the last letter is unreadable because of a stain.
108 Gen. 47, 28–50, 26. This weekly portion (Parashah) was read from 9 until 16 Teret. The quotations from the Bible are from the JPS translation, Philadelphia 1985.
109 The derivation of the Aleph by Vital from the verse “Ben Porat Yoseph Ben Porat ‘Alei ‘Ayin” (Gen 49: 22) is not clear to me.
110 Fol. 72b, no. 294.
111 Fol. 88a, nrs. 99, 102, 107; 109; fol. 90b, no. 161; fol. 91b, no. 170; 87a, nrs. 234–5.
Rabba after their ritual use. If, for instance, he left them at the east side of his house, his mental image of the Lulav and willow-branch will point him to the east, and before he has travelled one or two miles he will find the way. 110 Another praxis deals with the miraculous shortening of a traveller’s journey which is called “Qefizat ha-Derekh.” 111 This phenomenon is mentioned in Rabbinic literature in connection with the Biblical figures of Eliezer, Jacob, and Abishay Ben Seruya and recurs in medieval magical, mystical and homiletical literature. 112 In Islamic magical literature it is called “ṭay al-arḍ” (the folding of the earth). 113 A very interesting account of this technique is found in a text attributed to Vital, known as “Ma’amor Nesī’otav shel Avraham Avinu.” 114 Examples of Qefizah in published mystical literature — that was known to Luria and Vital — may be found in Berit Menuhah. 115 To protect seafarers from armed attacks Vital gives a magical praxis derived from a liturgical commentary by Joseph Zavyaḥ, namely, to recite seven times: “Let the sea and all within it thunder” (Ps. 96: 11; 98: 7), while meditating upon the three letters YHW. 116 Against drowning Vital recommends a praxis which he received from R. M. ha-Zarfati: to enter the ship with one’s left foot first and recite three times: “A’asbileš and Michă’el, rulers of the water.” 117 For protection in stormy seas one should pronounce an adjuration which Vital tried repeatedly: “Say ten times: ‘Ascribe to the Lord, O divine beings, etc.’ (Ps. 29) and at the end of every recitation the name ‘Adiriron’.” 118 For prisoners: a variety of recipes is given, generally to effect magical escapes. 119 In case the prisoner wants to escape from a tower too high for a normal jump, he should pronounce the “name of the jump and fall” (Shem ha-Dillag we-ha-Nesilah): ’BNKH WKB’ B2RP”, 120 and then say: “In His hand is every living soul and the breath of all mankind (Job 12: 10); Into Your hands I trust my spirit, You redeem me, O Lord, Faithful God”

110 Fol. 91b, no. 170; another means repeatedly referred to, is the adjuration of Sandalphon.
111 Fol. 90a, no. 151.
112 For Rabbinic literature see TB Sanhedrin 95a–b; and see addenda.
114 Ed. in Sha‘ar Ma’amorim Razal, Jerus. 1959, fol. 8aff. This text, which includes references to Aristotle, the philosophers, critics of Luria, etc., etc., has never received the scholarly attention that it merits.
117 Fol. 88a, no. 103.
118 Fol. 94b, no. 194. For this divine name see Schafer, op. cit., note 103 above, §§ 72, 204, 220, 419, 516, 938; Margalioth, op. cit., note 90 above, pp. 2–3, no. 5; for other praxes see fol. 88b, nrs. 115–6; fol. 90b, no. 159; fol. 96b, no. 225; fol. 102b, no. 22; fol. 105a, nrs. 78–9.
119 Fol. 86a, nrs. 77–9; fol. 88b, no. 117.
120 This name consists, as Vital remarks, of the initial letters of the following two verses.
121 Fol. 88b, no. 118; For another magical technique to escape from prison see fol. 90b, no. 158.
(Ps. 31: 6), and then jump.\textsuperscript{122} Evidently Vital remained unconvinced of the efficacy of this praxis, for he warns that one should only attempt this “when necessary.”

\textit{Against enemies}: “Say in your heart: ‘Yala Žimžumo Hamfsako’; tested by Rabbi Abraham Abukarat, of blessed memory, who was pursued by a gentle with a drawn sword but saved.”\textsuperscript{123}

\textit{Against robbers}: “Say three times in the correct order and three times reversed: ‘Terror and dread descend upon them’ etc. (Ex. 15: 16); pronounce the name \( \text{TFTFYH} \)\textsuperscript{124}, which is the result of the initials of \( \text{Tafel Tafas Yehi} \).”\textsuperscript{124} The injunction to do things in reverse is, as Trachtenberg remarks, “a familiar characteristic of magic, whereby Biblical quotations were often recited both forward and backward, mystical names were reversed.”\textsuperscript{125} The intention was to “capitalize the mystery of the bizarre and unfamiliar, and the power that is associated with the ability to reverse the natural order of things.”\textsuperscript{126} A recipe in the name of R. El’azar ibn Yoḥai recommends recitation of the “Parashat ha-‘Aqedah”\textsuperscript{127} with perfect intention.

\textit{Against torture}: After several incantations of holy names, Vital refers to another tradition he has found, namely, to imagine the name \( \text{BYT} \) in the colour purple.\textsuperscript{129} The technique of visualization is part of a tradition rooted in the Kabbalah; various Kabbalistic texts mention it in the context of prayer, where the different names of God or the \textit{Sefirot} are visualized in their specific colours.\textsuperscript{130} The name \( \text{BYT} \) appears in various contexts in Lurianic texts (e.g. in the \textit{Kawwanot} of Hanukkah, etc.). However, a close parallel to the tradition recorded by Vital, can be found in \textit{Zohar ba-Raqi’i} a: “Know that the name \( \text{BYT} \), which is the result of the verse “Because he is devoted to Me I will deliver him” (Ps. 91: 14) is good for protection. Its numerical value is equal to \( \text{HYH} \). Moses mentioned this name when he appeared before Pharaoh.”\textsuperscript{131}

\begin{enumerate}
\item Fol. 63a, no. 89; see as well fol. 83b, no. 29, and fol. 88a, no. 105.
\item This name already features in the \textit{Heikhalot} literature as one of the ninety-two names of Menatron, cf. Schiffer, op. cit., note 103 above, ff. 76, 387. It also features in the \textit{Sha’ar ba-Kawwanot}, Jerus. 1902, fol. 14b, as a protection against plagues.
\item Fol. 63a, no. 90; the name \( \text{TFTFYH} \) is of course the result of the first two consonants of the three words “\textit{Tafel Tafas Yehi}” (Ps. 119: 69, 70, 76); see as well fol. 77b, no. 406; fol. 87a, no. 93 and fol. 78a, no. 411 for other praxes against robbers.
\item Trachtenberg, ibid.
\item The biblical section on the sacrifice of Isaac (Gen. 22: 1–19).
\item Fol. 60a, no. 51.
\item Fol. 90b, no. 157. This name appears in various contexts in Lurianic texts (e.g. in the \textit{Kawwanot} of Hanukkah, etc.).
\item See Idel, op. cit., note 64 above, pp. 103–111.
\item \textit{Zohar ba-Raqi’i} a, Sighet 1875, fol. 59d–60a.
\end{enumerate}
Against hanging: Hayyim Vital recommends to wear an amulet with the name ARQHN’L, which the Ramaq (Moshe Cordovero) handed over to his teacher (Isaac Luria). If someone wears this amulet someone else will be hanged in his place, but he will neither be seen nor recognised.  

Against demons and wild animals: “I found written in the Sefer Legah Tor that if someone who keeps the “sign” of the Holy Covenant and does not befoul it with any sin, is afraid of wild animals and demons, he should uncover his “sign” and show it to them for then they will not be able to harm him.” The “sign” of the Holy Covenant is the penis which through circumcision becomes a “sign” of the Covenant between God and Israel. Sins committed with this “sign”, i.e. sexual transgressions, are therefore an infringement on the Covenant itself. This idea is stressed repeatedly in the Zohar. The statement that someone who shows his “sign” need not fear demons, presupposes another Zoharic idea, namely, that at the moment of the circumcision a Divine name is engraved in the flesh [of the penis] of the child, so that he does not any longer belong to the realm of the Devil (sitra ‘arba) and is protected against his plagues in this world and in the world to come. Another form of protection from demons is the so-called “Shir shel Pega’im” (Ps. 91), the medieval anti-demonic Psalm par excellence.

Against the evil eye: One of the praxes recommended by Vital is to place five small grains of salt into one’s mouth, every morning upon rising, then spit them out into an earthen pot and urinate on them. It is well known that belief in, and fear of, the power of the evil eye was widespread among many peoples until modern times. Accordingly, numerous means of protection were contrived. In the Islamic world the number five (khamasa) was, and still is considered one of the most effective protective symbols. The

[Notes]

Fol. 83a, no. 8.

I have not located this quotation in the Sefer Legah Tor composed by Moshe Najara (Constantinople 1575), or in that composed by Yom Tov Zahalon (Safed 1577).

Fol. 66b, no. 169.


Fol. 88a, no. 109; see Trachtenberg, op. cit., note 125 above, pp. 112–3. For charms for the protection against Lilith see section II.

Fol. 59b, no. 40; for other recipes see fol. 65a, no. 119, fol. 68b, no. 212, fol. 71b, no. 401, fol. 86a, no. 75; fol. 96a, no. 214; fol. 96b, no. 228.
quickest method of employing the symbol is to stretch one’s five fingers towards the evil glance of another person and say to him: “Five on (in) your eye.” Another method involves representations of the number five in a variety of forms: five fingers, a bean-pod containing five beans, a pentagram or five-pointed star and many others. Löw refers to the use of salt as an apotropaic ingredient under the Muslims and under the Palestinians for protection against the evil eye. He also refers to the custom of the fellahin in Palestine to strew salt amongst the crowd of onlookers during the wedding procession through the village. But salt was also used as a protective device by Jews. See, for example, R. Shemtov Gaugine’s *Keter Shem Tov.*

5. **Success:** “If one says Uri’el thrice upon waking, and one’s hands are clean, one will be successful that whole day.” For success in every undertaking Vital recommends an amulet containing Ps. 47.

6. **Memory:** “Take three leaves of the Rubus sanctus (Genish),” on the first leaf write TTYTYTYH; on the second SSS, and on the third leaf PPPYH; erase the names with wine or water and drink this. Even if one has only learned Himash (Five Books of Moses), his heart will be opened (Yippatah Libbo) so that the miracle will be great.” A similar tradition against forgetfulness has been preserved in the Heikhalot literature. It stipulates certain preparatory acts, such as immersion and fasting, and the writing on three leaves of the olive tree. Another recipe is quoted by Vital in the...
name of Baruch Zarfati. To remember something one has forgotten one should pronounce the name ZGNZG'I three times. The strengthening of the memory by medical, magical and other mnemotechnical means received much attention in ancient and medieval literature, that is, before the invention of the printing press made books widely available. It was a central theme for the adherents of Judaism and Islam because of their oral traditions. Only by memorizing and retelling their religious traditions could Jews and Muslims ensure the survival of their religions. Another example of a magical memory technique provided by the Heikhalot literature, contains a formula for conjuring the Sar ha-Torah (Angel of the Torah), a technique which enables the adept to study the Torah and to retain it perfectly. In fact, Vital questioned how this praxis which had been employed by the great Tannaitic scholars R. Yishma’el and R. Akiva, had become prohibited. His master, Isaac Luria responded that later generations did not meet the requirement of absolute purity. An admirable summary and evaluation of the different memory techniques was written by Judah Aryeh of Modena (1571–1648). In his Lev Aryeh he distinguishes between three methods of strengthening the memory: 1. the magical, 2. the medical, and 3. the classical. He was strongly opposed to the first two methods, but regarded the third one, the classical method of the ancient Greeks and Romans, positively.  

7. Love and hatred between man and wife. To win the eternal love of a man Vital recommends the following magical praxis:

Take a piece of cloth from the trousers of the man, from the crotch, and take virgin wax in the name of the man. [From the cloth] make three wicks for three lamps in the name of the man. Take a chair with three legs and turn it upside down, put the lamps on the legs and light them from left to right, the way in which the Christians write, and say when you kindle them: Thus may the heart of so-and-so burn for me. Leave the wicks until they have been half consumed. Then immerse them in water and extinguish them and say: As I immerse these wicks so may the heart of so-and-so be immersed [by love] for me so that he forgets all the other women for me.

Another spell recommends that a woman who wants to win the love of her husband hang the left eye of a hoopoe around her neck. For then he

149 Fol. 84a, no. 39. For other recipes see fol. 84b, no. 72; fol. 96b, no. 222.  
150 Cf. Margaliot, op. cit., note 91 above, p. 55, no. 94.  
151 Fol. 96b, no. 226. For other recipes against forgetfulness see section II, no. 1.  
152 See Schäfer, op. cit., no. 103 above, nrs. 278–280.  
153 See Benayahu, op. cit., note 7 above, pp. 290–1.  
154 See note 146 above.  
155 Cf. section II, no. 1; for a more extensive treatment of this subject in Jewish and Muslim literature see my forthcoming “Ibn al-Jazzār’s Risāla fi al-nisyān (Treatise on Forgetfulness),” critical edition with English translation and extensive commentary (Wellcome Asian Series published by the Royal Asiatic Society).  
156 Fol. 72b, no. 292.
will never love someone else, even if his own wife if very ugly.\textsuperscript{157} This love-charm is possibly derived by Vital from the \textit{Sefer Raz\‘i el ha-Mal' akh}.\textsuperscript{158} Trachtenberg quotes this charm amongst a small number of other charms which "owe a great deal to German superstition, and can easily be matched in non-Jewish writings."\textsuperscript{159} To chase rival lovers away from a women he recommends that her husband buy a small quantity of camphor, and sew it in her garments without her knowledge.\textsuperscript{160} To make a man hate his wife one should take some of the woman's excrement, put it in one of her husband's shoes and say: "As this shoe stinks, so may so-and-so stink for so-and-so and may she be hated by him as long as he lives."\textsuperscript{161} To the realm of relationships between husbands and wives belongs a recipe to draw the innermost secrets out of a reticent person: "If you put the tongue of a frog on the clothes of someone who is asleep, opposite his heart, he will answer all your questions."\textsuperscript{162} The earliest source for this tradition is Democritus (Bolus of Mendes, c.200 BC), as preserved by Plinius: "Democritus indeed tells us that if the tongue, with no other flesh adhering, is extracted from a living frog, and after the frog has been set free into water, placed over the beating heart of a sleeping woman, she will give true answers to all questions."\textsuperscript{163} This tradition was widely promulgated in different variations in ancient and medieval literature. Thus, in texts attributed to Hermes Trismegistos: "If someone cuts and removes the tongue of a frog while alive, and writes on the tongue 'chouchedamenof' and puts it secretly on the breast of a sleeping woman, she will tell him everything she has done in her life."\textsuperscript{164} Al-Qazwini (13th century) remarks: "If its tongue be laid on the heart of a sleeping woman, she will tell whatever she may have done."\textsuperscript{165} Al-\textit{Dāmīrī} (14th century) states: "If its tongue is hung on a sleeping woman, she will tell everything she knows while awake."\textsuperscript{166} Following Democritus ancient and medieval superstition held that the same effect was achieved by the tongue and

\textsuperscript{157} Fol. 72b, no. 285; for other love charms see fol. 78b, nrs. 423, 425; fol. 96b, no. 221; fol. 105a, no. 92; fol. 109b, no. 182; fol. 115b, no. 19.

\textsuperscript{158} \textit{Sefer Raz\‘i el ha-Mal' akh}, ed. Amsterdam 1701, fol. 41a.

\textsuperscript{159} Trachtenberg, op. cit., note 125 above, pp. 129–130, 294, n. 23.

\textsuperscript{160} Fol. 72b, no. 286.

\textsuperscript{161} Fol. 78a, no. 420; for other recipes see fol. 78b, fol. 424; fol. 96b, no. 230; fol. 97a, no. 236.

\textsuperscript{162} Fol. 59a, no. 13; cf. fol. 84a, no. 34 for an amulet for the same purpose to be put between the breasts of the woman.

\textsuperscript{163} Plinius, \textit{Natural History} XXXII, 49 (transl. W.H.S. Jones); for an extensive account of this magical technique see Max Wellmann, \textit{Die Physika des Bolos Demokritos und der Magier Anaxialos aus Lorisse}, vol. 1 (Abh. der Preussischen Akad. der Wiss., Jahrgang 1928, nr. 7), p. 22; cf. Ullmann, op. cit., note 102 above, pp. 413, 416.

\textsuperscript{164} Wellmann, \textit{ibid.}


heart of various birds, such as the goose or eagle owl. It was also believed that certain stones had the power to draw out secrets. Thus Marbode of Rennes (1035–1123) notes: “He who desires to know whether his wife is an adulteress, let him place magnetite under her sleeping head.”

8. Supernatural talents: Invisibility: “Go to the nest of a raven, kill one of its young without attracting the parents’ attention, and bind it to the nest so that they cannot throw it out. The male raven will then fetch a stone to hide the dead bird from sight. Take this stone and place it under the tongue, for then one will see without being seen.”

To see demons: “Take the bone from a dog’s foot, pulverize it and put the powder in one’s eyes at night, for then one can see them and converse with them.”

To teach the language of ravens to one’s child. When one’s wife is pregnant one should bury a raven’s head on the roof of one’s house, after one has put dry coriander seeds in the orifices [eye sockets etc.]. When she gives birth one should take the coriander which is growing from the raven’s skull, extract its juice and put it on the palate of the child before it has sucked or tasted anything. When it grows up, the child will understand the language of ravens. The ability to understand the language of birds is part of folklore in general. In the Jewish and Islamic traditions this gift was particularly ascribed to Solomon. Isaac Luria also had this gift, and in particular understood the speech of ravens, as Vital informs us in his Sha’ar ha-Kavanot. Moreover, what Vital terms “Ḥokhmah Yedidat Zifzufi ”Ofor” (the knowledge of the twitter of birds) was integrated into Luria’s theory of revelation (prophecy, holy spirit, Maggidim, etc.).

Automatic writing: YTHWZQYH should be invoked; the parchment should be prepared by a Jew on the first day of the week, while the pen should be made on the fourth day. This technique was common among certain Jewish mystics after the exile from Spain for the composition of mystical writings. One work composed in this way is the well-known Sefer ba-Meshiv.

167 Marbode of Rennes, De lapidibus, considered as a medical treatise with text, commentary and C.W. King’s translation, together with text and translation of Marbode’s minor works by John M. Riddle (Sudhoff’s Archiv, Beiheft 20), Wiesbaden 1977, p. 57.
168 Fol. 91a, no. 160; for other means with the same effect see ibid., and fol. 105a, no. 91.
169 Fol. 91b, no. 167; cf. Blau, op. cit., n. 125 above, p. 54.
170 Fol. 91b, no. 169.
172 Op. cit., no. 123 above, fol. 86b; see as well the stories and references in op. cit., note 7 above. I hope to discuss the subject of the speech of birds more in detail in a separate article, which I am preparing together with Eric Pellow.
173 Sha’ar Ra’ah ba-Kodesh, op. cit., note 83 above, fols. 5b–6a.
174 Fol. 60a, no. 48. See Scholem, op. cit., note 1 above, p. 188; Isaiah Tishby, Meshiḥat Yit ha-Dor Gemanei Seferad u-Shonegal, Jerus. 1985, pp. 55–6; Rachel Elior, “Meqabbalei Dar’ah,” Pe’amim 24, 1985, pp. 64–5.

To foretell events that will happen every week: pay attention [to the oil lamps] every shabbat evening. If, while you are watching, a spark falls from the burning oil lamp and is extinguished before it touches the ground . . . it is a sign that someone will die in the city in that week. The number of dead will correspond to the number of sparks. But if the spark is only extinguished when it touches the ground, it is a sign that a foreign visitor will arrive.\(^{173}\)

Other divinations containing incantations in Arabic enable one to discover whether someone far away is alive or dead, and if someone will live or die within the next year.\(^{176}\) Another praxis allows to find out which woman has been decreed for someone by Heaven.\(^ {177}\)

10. *Exorcism.* Vital deals with the exorcism of demons and evil spirits.\(^ {178}\) Fols. 121a–123b contain a detailed report on exorcisms performed by R. Yehoshu’a Album in Damascus. Benayahu has discussed this material in his *Sefer Toldot ha-Ari*, and pointed to Album’s influence on Hayyim Vital.\(^ {179}\) One method of exorcism not included in Benayahu’s discussion is “to write the name Bedaite’el on a piece of paper and hang it on the possessed; when the demon should be driven from the house, one should pronounce this name in the four corners [of the house] morning and evening for three consecutive days.”\(^ {180}\) In the case of someone who has been injured by a demon Vital advises:

> clean the house . . . change the blankets of the bed so that they will be clean, and let the patient lie down on it; stand alone next to him and recite over him, in a quiet voice, the entire psalm “O you who dwell in the shelter of the Most High” (Ps. 91), seven times in the correct order, and seven times reversed in [this] manner: “my salvation, and show him” etc. It is even better to recite it nine times in the correct order and nine times backwards.\(^ {181}\)

The number seven was very popular in magical praxes, second only to the number three. About the number nine Trachtenberg remarks that “it appeared hardly at all in Jewish thought until the Kabbalah shed its fantastic light upon it. In the Jewish magic and superstition of Northern Europe nine achieved a sudden importance for which there was no warrant in the Jewish tradition. Demons have a special affinity for this numeral: they congregate in groups of nine, . . . Incantations must be repeated nine times.”\(^ {182}\)

\(^ {173}\) Fol. 67a, no. 188. This recipe is followed by several others derived a.o. from the condition of the water and the oil in a lantern in which water and oil are mixed together; see as well fol. 107b, no. 157, and Re’uven Margalioth, *Sefer ha-Razim*, Jerusalem 1967, p. 71, l. 90-p. 72, l. 107; pp. 102–3; transl. Michael A. Morgan, Chico 1983, pp. 29–30; 74–5; Trachtenberg, op. cit., note 125 above, pp. 214–222.

\(^ {176}\) Fol. 91a, nrs. 105–7; see as well fol. 108b, no. 158.

\(^ {177}\) Fol. 97a, no. 232.

\(^ {178}\) Fol. 60a, nrs. 52–3.

\(^ {179}\) See op. cit., note 7 above, pp. 290–306.

\(^ {180}\) Fol. 72b, no. 285.

\(^ {181}\) Fol. 68b, no. 213; this case is also not mentioned by Benayahu.

\(^ {182}\) Trachtenberg, op. cit., note 125 above, pp. 119–120.
11. **Personal gain: Treasure-hunting.**

Take the intestines of someone who has been killed and boil them in water. Take the fat floating on the water, or the fat in the rest of his body; make a candle of it, with a wick in the same way that a candle is made from wax. Light the candle, and [the flame] will shrink [when one approaches] the place where the treasure is [hidden]. But know that sometimes a treasure has been hidden somewhere with a spell, and demons guard it whom one must fear when one would take the treasure. Therefore when you dig in the place where the candle [flame] shrank and see that there is a treasure, take [the blood of?] a young dove and if you cannot find a dove, extract three drops of blood from your little finger and drip it on the treasure. However, an Israelite is forbidden to do so.\(^\text{161}\)

Since this magical praxis is intended for personal gain, it clearly belongs to the realm of so-called “black” magic, which, after the boundaries between white and black magic had become blurred, became an integral part of treatises on “practical Kabbalah.”\(^\text{164}\) One of the ambiguities of this text is Vital’s final remark — what does it refer to? Does it refer to the use of corpses, or to drawing blood from one’s finger? Both of these acts are problematic from a halakhic point of view. The major problems with the use of corpses are: (a) desecration of the corpse (Ninawul ha-Met), (b) benefit from corpses. The major problem with drawing blood is that Jewish law forbids unnecessarily “wounding” the body. The use of human body parts and animals in sympathetic magic is a central theme in the *Kutub manāfi ‘al-bayawan* (On the benefits of animals), a genre initiated by Xenocrates of Aphrodisias (2nd century). He introduced the use of animal organs into therapeutics and had a strong influence on the Arab authors who practised and further developed this genre. One Arab author who dealt with these praxes extensively in his medical encyclopaedia was al-Tabari.\(^\text{165}\) Although the use of human organs seems to have been exceedingly rare in Jewish practice, it was very popular in medieval Christian Europe. Christian magic prescribed, as Trachtenberg remarks, “the most various and obscene ingredients, such as human and animal blood, fat, hearts, sex organs, brains, excrement, etc., for internal and external application, largely because of their homeopathic virtues.”\(^\text{166}\)

If one wishes to hide a treasure in the ground, one should add some iron to it, lest it be taken by the demons, especially after twelve months.\(^\text{167}\) The use of iron as an anti-demonic agent was very common in the magic of the Jews of Northern Europe.\(^\text{168}\)

\(^{161}\) Fol. 65a, no. 118 for other recipes see fol. 84b, no. 50; fol. 90a, no. 156; fol. 91a, no. 164 records an incantation in Arabic.

\(^{164}\) See Scholem, op. cit., note 1 above, p. 183.


\(^{166}\) Trachtenberg, op. cit., note 125 above, p. 128.

\(^{167}\) Fol. 51b, no. 66. See ibid. for a magical procedure to retrieve a lost object.

\(^{168}\) See Trachtenberg, op. cit., note 125 above, p. 46 and see addenda.
Robbery:

Take candles prepared from the fat of a human being; place two candles upright on the [right] foot of the person asleep on the bed and two on his left foot, and two in his right hand and two in his left hand. Even if he opens his eyes and sees everything that you take from his house, he will not say anything to you, but will be dumb, not opening his mouth at all. You may also ask him where his money is, for he will tell you, and take it, for he will not protest.  

Parts removed from corpses were highly valued and were especially in demand for thieves’ magic in medieval Christian Europe.  

12. To eliminate one’s enemy: “Take a male frog when your enemy is a man, and a female one when your enemy is a woman; sew up its mouth and eyes and all of its orifices and say: ‘As I bind and sew up this frog, so may all the orifices of so-and-so be sewed up and closed.’ Throw the frog under the bed, and as it gradually shrinks, so will your enemy until he dies.” This technique and many others mentioned by Vital belong to the category of sympathetic magic. Similar techniques were known to the Jews in medieval Europe. Another praxis to overcome one’s opponent even when he is a king: “Hang the tongue of the hoopoe on the right side of your heart.”  

13. To neutralize the effects of magic: Vital recommends several magical praxes. One of these is: “Take a living fish from the water, urinate in its eye, put it back in the water immediately and say: ‘As I let you free so may I be free from all the spells put on me and witchcraft practised against me.’” Another magical praxis for someone who has been bewitched is:

Go to a shop (apothekeary) and ask if there is mercury [for sale], but do not buy it. Visit three shops in this fashion, and then return to the first one, buy the mercury, and say: ‘I [buy this in the name of so-and-so.’ Undress the one who is bewitched until he is completely naked; let him stand in a large copper bowl or on a large bed sheet; pour the mercury over him so that it flows down from the crown of his head over his body to his feet, and falls into the bowl or onto the sheet. Collect the mercury and pour it over him again, and repeat this three times. Take a hazel nut, make a hole in it, remove its contents, put the mercury into the empty shell, seal the hole with wax, and have him swallow it. When he defecates, look for it, and, when you have found it, wash it thoroughly, and roll it in wax. Sew a piece of cloth to the wax and have him carry it hanging around his neck.”

191 Fol. 76b, no. 373.  
192 Trachtenberg, op. cit., note 125 above, p. 128.  
193 Fol. 69a, no. 220; for variants see ibid. nrs. 219, 221; for another recipe see fol. 96b, no. 223.  
194 Trachtenberg, op. cit., note 125 above, pp. 124–5. For incantations from the Genizah with the same purpose see Lawrence H. Schiffman & Michael D. Swartz, Hebrew and Aramaic Incantation Texts from the Cairo Genizah. Selected Texts from Taylor-Schechter Box K1, Sheffield 1992, p. 48.  
195 Fol. 73a, no. 297; this charm is also quoted by Trachtenberg as “owing a great deal to German superstition”; see n. 159.  
197 Fol. 70b, no. 258.
Another magical praxis deals with the specific case of someone bound by witchcraft so that he cannot have sexual intercourse with his bride.\textsuperscript{196} According to various Jewish sources the dangers besetting the bride and groom culminate at the moment of sexual union on the wedding night. For then the evil forces are most desirous to “frustrate the act that is responsible for the propagation of human life.”\textsuperscript{197} How deeply people were convinced of the reality of this kind of witchcraft is demonstrated by the Responsa literature, which has preserved important cases involving witchcraft.\textsuperscript{198} Vital’s interest in this magical praxis may well reflect his personal experience. For in his \textit{Sefer ha-Hezyonot} he relates how he was bound by witchcraft for nine months when he married his wife Hannah. Consequently he could not have sexual intercourse with her, and suffered from nocturnal pollutions.\textsuperscript{199}

Finally, it should be noted that Vital formulates certain rules for the writing of amulets: “When you cut the parchment say: In the name of God; God, the Almighty of the Hosts, Be with us etc.; God, the Almighty of the Hosts, blessed is the man etc.; God, the Almighty of the Hosts, Save etc., and concentrate on the name MPZZ. And when you start to write say: ‘I write this amulet in the name of God for-so-and-so for such a purpose,’ and while you repeat the word ‘God’ three times, you should pass the amulet through both your hands.”\textsuperscript{200} This formula is only one of several stipulations which feature in Ashkenazi Jewish magic. Other stipulations are, for instance, ritual and physical cleanliness; certain types of material, and certain times for the composition of the amulets.\textsuperscript{201}

\section*{II. Medicine}

Of the many different diseases treated by Hayyim Vital, some feature repeatedly in his Book of Secrets.\textsuperscript{202}

1. \textit{Diseases of the head and brain: Headache.} For a severe headache Vital recommends the following concoction: “Take fine bread crumbs, knead them with good wine and add pounded dry mint to it \textit{(bierbabuena; na’na)}\textsuperscript{203}; put this on a linen cloth and apply it to the forehead from ear to ear; leave it

\textsuperscript{196} Fol. 16b–17a, no. 88; see as well fols. 96b–97a, no. 231; fol. 108b, no. 161. Cf. fol. 72b, no. 281: “La-Niqshar ‘im Ishro.”

\textsuperscript{197} See Trachtenberg, op. cit., note 125 above, p. 48; ibid., p. 127: “We hear much complaint in medieval Hebrew literature about the bewitching of man and wife so that they cannot cohabit.”

\textsuperscript{198} See the forthcoming article by R. Weinstein: “Impotentia u-Shelemut ha-Mishpahah ba-Kehillah ha-Yehudit be-Reshit ha-’Et ha-Hadasah.”

\textsuperscript{199} \textit{Sefer ha-Hezyonot}, op. cit., note 2 above, pp. 42, 139, 154, 157.

\textsuperscript{200} Fol. 84b, no. 44.

\textsuperscript{201} See Trachtenberg, op. cit., note 125 above, pp. 143–5.

\textsuperscript{202} Some treatments are discussed by Benayahu, op. cit., note 6 above.

\textsuperscript{203} Spanish and Arabic for “mint”.
for a day or a night.” Vital quotes the following recipe in the name of Ibn Sinā: “Take thirty kernels of peaches pounded with egg white and apply this to the head.”

Forgetfulness: Medieval physicians, following Galen, considered it a disease of the brain, located in the posterior ventricle, and caused by excessive cold and/or moisture. Accordingly, warm, dry drugs were prescribed in order to restore the balance of the bodily fluids. One of the most famous was *balāḏurus* (Semecarpus anacardium L., marsh-nut); this drug also figures in the cures quoted by Vital. Jewish literature repeatedly refers to a compound drug of varying composition called “balāḏūr qaṭān” as an antidote for memory loss. Vital remarks that the Provençal scholars used to give it to their sons every morning for “the opening of their hearts” (*Petithat Lev*).

**Blows on the head:** Vital recommends a variety of compound remedies. About the preparation of one remedy he remarks explicitly that it is according to the habit of the physicians from Persia.

2. *Eye diseases.* The text contains recipes for eye pain, red eyes, cataracts, to clean the eyes, to sharpen eye sight, and for a variety of ophthalmic diseases. A special section (fols. 100a–101b) deals with cataracts and their treatment. The many references to eye diseases may serve as an indication of their frequent occurrence in the Middle East. Sources dating from pre-Islamic times until recent years confirm this impression. Both Vital and his son Samuel suffered from eye problems at various points in their lives. With regard to Hayyim Vital, note the interesting story about his eye pain and Luria’s “cure” in *Sha’ar ha-Mizvot.*

Scholem’s remark: “After a severe illness in 1604, his sight was impaired and at times he was even blind,” is based on *Sefer ha-Hegyonot.* Thus, his early (1571 or 1572) symptoms of eye disease became a full blown impairment later in life.

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204 Fol. 67b, no. 193; see as well fol. 73a, rrs. 299–302; fol. 110a–b, rrs. 207–9.
208 Fol. 110a, rrs. 200–2; fol. 110b–111a, no. 223–5.
209 Fol. 110b, no. 223.
210 Fol. 48b–49a, rrs. 14–21; fol. 75a, rrs. 339–341, 343, 345; fol. 75b, rrs. 352–3; fol. 99b, rrs. 277–8; fol. 102b, rrs. 13–4; fol. 110a, no. 197; fol. 111a, rrs. 232–247.
212 See *Sha’ar ha-Mizvot,* Jerusalem 1905, fol. 37b–38a.
213 Scholem, op. cit., note 1 above, p. 444; *Sefer ha-Hegyonot,* op. cit., note 2 above, pp. 37b–38a.
3. **Toothache.** Among the cures recommended by Vital we find the following: “Boil the lower jaw of a lamb in water, take the bone itself, complete and still warm, with the teeth attached to it; put it in your mouth and keep it between the painful teeth; repeat this two or three times until the pain stops, with God’s help. Or fumigate with colocynth.” Vital illustrated one rather complicated magical praxis with a sketch of a mouth with thirty (the accompanying text claims thirty-two) teeth and three magical names. The sufferer was expected to carefully copy the text, pierce the magical names with a nail and insert the point of the nail into the aching tooth. Vital explicitly states that he has tested one of his cures several times and found it to be effective for people with a certain temperament.

4. **Earache:** One cure for earache caused by cold or defluxion reads: “Take an earthenware flask which is normally used for olive oil; empty it completely so that not even one drop of olive oil remains; put it on the fire so that it becomes hot; put your ear against its opening so that it will receive the hot vapour rising from the flask; do this two or three times and cover your ear immediately because of the cold.” Vital explains that the reason why one must drain the olive oil completely is that purulent matter falling from one’s ear into the flask may cause the hot oil in the flask to splash on one’s ear and burn it.

5. **Nasal catarrh (romadizo):** The definition of this disease given by Vital — i.e., that it is a catarrh streaming from the brain to the nose — may be traced to the ancients, and was generally accepted in Islamic medicine. It presupposes the existence of open passages between the brain and nose. One suggested cure consists of sniffing the smoke of burnt garlic cloves in the morning and in the evening, and of covering one’s head when one goes to sleep.

6. **Throat disorders:** Among the remedies recommended for cough is the following: “Immerse quince seeds in water overnight; in the morning crush them, extract their juice, boil the juice with sugar; drink one spoon of this evening and morning, for several days.” Vital claims that eructation may

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214 Fol. 75b, no. 359.
215 Fol. 75b, no. 361.
216 Fol. 18b, no. 102; his approval of this recipe is to be found on fol. 24b–25a, no. 175. For other recipes see ibid. and fol. 10a, no. 6; fol. 18a, nrs. 99–101; fol. 59a, no. 21; fol. 59b, no. 41; fol. 68b, no. 204; fol. 96a, no. 220; fol. 104a, nrs. 53, 56, 58; fol. 107b, no. 133; fol. 116a, no. 3.
217 Fol. 18b, no. 103; for other recipes see ibid., no. 104; fol. 24a, no. 168, fol. 67a, no. 186, fol. 75b, 356; fol. 83a, no. 16; fol. 104a, nrs. 60–1; fol. 109b, no. 186.
218 Benayahu’s interpretation of romadizo as raumatismo (rheumatism) is incorrect (see op. cit., note 6 above, p. 108).
219 See my “Qusṭa ibn Liqāʾ’s medical regime”, op. cit., note 211 above, ch. 6.
220 Fol. 18b, no. 105; see as well ibid. nrs. 106–7; fol. 49a, no. 24; fol. 83a, no. 15; fol. 103b, no. 47; fol. 109b, no. 181.
221 Fol. 76a, no. 364. For other recipes see ibid., and fol. 19a, nrs. 115–7; fol. 64b, no. 110; fol. 97a, no. 237; fol. 102b, no. 23.
occur when one is mentioned by a friend or relative in one’s absence. The suggested remedy is to mention the names of one’s friends and relatives; when the sufferer pronounces the name of the person who mentioned him, the eructation will stop.\footnote{Fol. 76a, no. 366.} The text contains remedies for hoarseness, injured neck muscles, tonsillitis (agallas), and croup.\footnote{Fol. 76a, nrs. 363, 367–8; fol. 76b, no. 369; fol. 103b, no. 44.}

7. \textit{Intestinal diseases:} (a) For worms in the belly the Book of Secrets recommends potions prepared from orange blossom extract, mint extract, or absinth. Lemon juice may also be efficacious, particularly if it is exposed to the moon during the night and used in the morning with some saffron.\footnote{Fol. 77a, no. 388; see as well fol. 59b, no. 35.} (b) Colics.\footnote{See fol. 59b, no. 53; fol. 78b, no. 429; fol. 89a, no. 126; fol. 102a, no. 1; fol. 104b, no. 68; fol. 108a, no. 149.} (c) Diarrhea: A cure for diarrhea accompanied by blood is to drink two rafi\footnote{Vital remarks that every rafi is 600 dirhams; cf. Walther Hinz, \textit{Islamische Masse und Gewichte umgerechnet ins metrische System} (Handbuch der Orientalistik I, Ergänzungsband I, 1). Revised and augmented, Leiden/Cologne 1970, p. 30, where he remarks that the rafi of Damascus was always 600 dirhams, which is 1,85 kg.} of sour milk (halat hamuzah, leche agria).\footnote{Fol. 64b, no. 114; cf. fol. 81b, no. 101; fol. 99b, no. 269; fol. 105a, no. 82. For regular diarrhea see fol. 33a, no. 203; fol. 49b, no. 32; fol. 72a, nrs. 275, 277; fol. 72b, no. 280; fol. 89a, no. 127; fol. 99b, nrs. 274, 276; fol. 108b, no. 163.} Diarrhea

8. \textit{Kidney and bladder stones:} In an interesting case history Vital records how he cured a two-year-old boy suffering from bladder stones who had been unable to urinate for two days. Vital applied plasters to the stem of the penis to soften the urethra, used different purgatives and potions to dissolve the stone, and means of a fumigation with cotton seeds to widen the narrow urethra in order to extract the stone.\footnote{Fol. 26a, no. 186; Benayahu, op. cit., note 6 above, pp. 91–3; cf. idem, op. cit., note 3 above, p. 11. For other recipes see fol. 48a, no. 11; fol. 67a, no. 185; fol. 83a, no. 13; fol. 83a–b, nrs. 52–4; fol. 96a, no. 217; fol. 102b, no. 10; fol. 107b, no. 143.} "Kidney and bladder stones:"

9. \textit{Sciatica:} A favoured cure for sciatica involves a clyster prepared from three roots of squirting cucumber which have been boiled well and to which olive oil has been added. If the pain does not disappear, one should prepare two or three clysters from the urine of a young boy, mixed with olive oil in which two or three cloves of garlic have been fried.\footnote{Fol. 20a, no. 138; see as well fol. 23b–24a, no. 162; fol. 67a, no. 184; fol. 68b, no. 208; fol. 99b, no. 280.} "Sciatica:"

10. \textit{Haemorrhoids:} One antidote states: ‘Fry snails (babasas) in sesame oil, add a small quantity of wax and smear this on the haemorrhoids in the morning and evening.’\footnote{Fol. 68b, no. 213; see as well ibid., no. 214; fol. 66b, no. 165; fol. 76b, no. 378; fol. 81b, no. 99; fol. 83b–84a, nrs. 20–1; fol. 96a, no. 216; fol. 101a, no. 282; fol. 102a, no. 5; fol. 107b, no. 140; fol. 109a, no. 167.}
11. Skin diseases: Vital mentions exanthema (ẓemahin),\(^{231}\) trichophytosis (neteq),\(^{232}\) garav,\(^{233}\) bobaq,\(^{234}\) and shehin.\(^{235}\) A recipe for bobaq is: "Melt an amount equivalent to one bean of corrosive sublimate (solmān) thoroughly in a small volume of water; apply this to the bobaq. Although it may hurt allow it to dry naturally. One or two days later a fresh black boil will form, which will dry until the scab can be removed and it heals. Know that this very painful."\(^{236}\)

12. Wounds: Specific treatments are provided for wounds inflicted by sword, stone or knife.\(^{237}\) The text also includes generic remedies for all kinds of wounds.\(^{238}\)

13. Bleedings: Vital offers several cures — some of them magical — for nosebleeds.\(^{239}\) He also notes that the circumcisers favor a powder prepared from burnt eggshells and burnt myrtle to stop the bleeding caused by circumcision.\(^{240}\)

14. Fever: The text includes remedies — mostly consisting of natural ingredients — for constant, tertian, and quartan fever.\(^{241}\) For tertian fever the following amulet is prescribed:

Write the following names on a ḫaṣṭer [piece of] parchment: RPRŠ, MRPRŠ, MRPRONYS, SOLNY, BṬṬWN, BṬṬWN, BṬṬWN. Roll the parchment up and bind it with a thread; when the cold season starts bind it to the middle finger. Sometimes it is also effective for constant fever whose onset is accompanied by coldness. The writer should know the name of the patient and of his mother; these names should be on his mind (Yēkha'wōn habem) and before his eyes throughout the writing of the amulet.\(^{242}\)

\(^{231}\) Fols. 17b–18a, nrs. 95–8; fol. 26b, no. 189; fol. 64a, no. 100; fol. 89b, no. 146; fol. 92a, no. 174.
\(^{232}\) Fols. 74b, nrs. 335, 338; fol. 81a, no. 97; fol. 108b, no. 159; fol. 109a, nrs. 172, 179; fol. 109b, no. 180; fol. 110a, nrs. 194–5.
\(^{234}\) For bobaq see Preuss, ibid., p. XXXIX: "A characteristic of a skin disease — white scurf or scaling (e.g., as in psoriasis or ulcerous leprosy)."
\(^{235}\) Fol. 26b, no. 188; fol. 81a, no. 95; fol. 102a, no. 3; fol. 102b, no. 109. For shehin see Preuss, ibid., p. LXXXII: "A skin disease, leprosy, inflammation, proliferous boils, etc."
\(^{236}\) Fol. 19a, no. 123; see as well fol. 81b, no. 110; fol. 102a, no. 4.
\(^{237}\) Fol. 65b, no. 132; cf. fol. 19b, no. 128; fol. 92a, no. 174; fol. 102a, no. 7; fol. 105a, no. 84.
\(^{238}\) Fol. 81b (featuring twice), nrs. 2, 104; fol. 109b, no. 185.
\(^{239}\) Fol. 24b, no. 173; fol. 52b, no. 73; fol. 74a, nrs. 326, 329, 332; fol. 96a, no. 212.
\(^{240}\) Fol. 74a, no. 331; for other recipes see fol. 59a, no. 15, fol. 74b, no. 334; fol. 109a, nrs. 178–8. Fol. 19b, no. 131 gives a cure for bleeding caused by blows, for nosebleeds and for the bleeding caused by circumcision.
\(^{241}\) See fols. 19a–b, nrs. 125–7; fol. 24a, no. 185; fol. 67a, no. 180; fol. 86a, no. 70; fol. 89b, no. 131; fol. 90a, no. 150; fol. 92a, no. 175; fol. 96b, no. 227; fol. 102b, nrs. 16, 19, 20; fol. 107b, no. 135.
\(^{242}\) Fol. 77b, no. 404.
The requirement that the writer must know the name of the patient’s mother conforms to the Rabbinic dictum that “all incantations which are to be repeated must contain the mother’s name.”

Accordingly, in many amulets the name of the mother appears next to that of the patient. For quartan fever Vital quotes from “Sefer Serapion”: “If one takes three roots from the herb called “falantini” with four and a half ounces of wine which has been diluted with an equal amount of water, it cures tertian fever; and if one takes four roots . . . it cures quartan fever.”

Serapion is the Latin name for the physician Yohannan bar Seraphyon who composed c.873, an extensive medical handbook in two versions: a larger one comprising twelve Maqalat (chapters), and a smaller one comprising seven Maqalat. The latter version was translated into Arabic by Musâ ibn Ibrahim al-Hashitî and Ibn Bahli and, subsequently into Latin. The Latin translation became very popular and was frequently printed.

Vital records his treatment of a patient of his who suffered from this kind of fever: on the first day, when the patient felt cold, Vital administered nine falantini leaves, and, when he had a fever, twenty dirhams of falantini extract. The second day he gave the patient eight leaves, but no extract. Every day thereafter Vital administered one leaf less until, on the ninth day, the patient received one falantini leaf, and was cured. Next to these diseases Vital discusses the following issues in the field of medicine:

Sleep disorders: Vital discusses different sleep disorders and recommends various solutions, most of which are magical. To prevent sleep he recommends that the patient bind the head of a bat in a black cloth and hang it on himself, or place it beneath his pillow. An alternative is to take a live wolf, loosen its teeth with iron tongs, and remove two of them, and hang them on his body. To wake during the night and not to be overcome by sleep Vital recommends recitation of the verse “When you walk it will lead you” (Proverbs 6: 22). These prescriptions may well reflect the custom to rise at midnight in order to study Torah, to weep over the Galut (Exile) of the Shekhbinah (Divine Presence), and to perform Yibidim (mystical meditations or “unifications”). This custom became especially popular in Safed, where it developed into a fixed ritual called Tiqqun Hazot. In the context of

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243 TB Shabbath 66b.
244 See Schiffmann & Swartz, op. cit., note 192 above, p. 33; Trachtenberg, op. cit., note 125 above, p. 115.
245 I do not know the identity of this herb.
246 Fol. 19b, no. 126.
248 One dirham equals 3.125 grams, see Hinz, op. cit., note 226 above, pp. 13–4.
249 Fol. 76b, nrs. 370, 374.
250 Ibid., no. 370; for another praxis see fol. 103a, no. 33.
251 Fol. 76b, no. 375.
sleep disorders Vital mentions two sedatives to promote sleep.  

**Gynecology and obstetrics:** Remedies of a magical character are especially prominent in the field of conception, contraception and childbirth. To stimulate pregnancy the following recipe is recommended:

> On the eve of her ritual purification, the [infertile] woman should drink of the burned skin of a fox, which has been pounded [and mixed] with honey. The dose should be equivalent to what the outstretched palm of your hand can contain. Another recipe: Bind the concealed fat of the stomach of a young female hare with some camel hair into a pessary and insert it into her uterus two days before her purification; then she should purify herself and have sexual intercourse.

The Middle Ages were, according to Trachtenberg, “especially prolific of fertility potions, many of them concocted of parts of animals which were noted for their fecundity.” The same holds true for the Muslim world, where a special genre of literature on the subject of ḥāb (coitus) developed; in this literature aphrodisiacs and fecundity drugs feature prominently.

To prevent a miscarriage Vital recommends magical praxes such as the following: “When she is pregnant she should watch an ant hill; when she sees an ant carrying one kernel of wheat in its mouth, she should take the kernel with her thumb and middle finger, [being careful] not to let it fall to the ground. She should collect seven kernels in this manner. She should bind these in a rag and carry them on her.”

However, Vital’s Book of Secrets also contains formulae for contraceptives and abortifacients. One of the abortifacients discussed is to fumigate her uterus with burnt wheat. These recipes for abortifacients are remarkable when one considers the fact that abortion was restricted by Jewish law to cases in which the mother’s life was endangered. It shows how deeply entrenched Vital was in the Islamic culture surrounding him. For the use of contraceptives and abortifacients as a way of birth control was permitted in the Islamic society, and was sanctioned by Islamic law. The numerous discussions of contraception and abortion in different genres of Islamic literature — medical, legal, erotic and popular — are wit-

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252 Ibid., nrs. 371–2; for other recipes see fol. 92b, nrs. 185, 187; fol. 103a, no. 33.
253 Fol. 59a, no. 16. An amulet for pregnancy is mentioned on fol. 69b, no. 241. For other magical praxes see fol. 70b, no. 252; for a natural remedy in the form of a pessary see fol. 25b, no. 179.
254 See Trachtenberg, op. cit., note 125 above, p. 188.
256 Fol. 70a, no. 249; see as well fol. 102b, no. 24.
257 Fol. 104a, no. 52; fol. 105a, no. 89.
258 Fol. 69a, no. 224; to extract a dead foetus see fol. 83b, no. 26.
259 See David M. Feldman, *Birth control in Jewish law*, New York-London 1968, pp. 251–297, for a detailed treatment of this question based on all the relevant material; and see addenda.
nesses to this liberal attitude. On the other hand, preparations to induce abortion were known even in medieval Christian Europe, where more conservative religious doctrines prevailed.

For a difficult childbirth Vital recommends: “Write PWQ on her forehead; if she does not give birth write WPQ thrice; if she does not give birth write QWP thrice; if she does not give birth write PQW thrice; if she does not give birth write QPW thrice; if she does not give birth write WPQ thrice. These are six combinations.” One of the rationales for these permutations is the numeric equivalence of the term “maqom” — a divine epithet in Rabbinic literature, and perhaps more importantly the term for “space”, which there is too little of at this point in the pregnancy — and the permutations QWP etc. Vital prefacces another praxis with the following remark:

Copied from a work by R. S. Sirillo of blessed memory. Although he forbids any magical activity in a case of difficult childbirth, it helps a woman in danger. Heat an iron lamp until it becomes red, then engrave the name LMQPNGL in it with a knife. Put oil and a wick in the lamp and light it in front of the woman suffering from difficult childbirth. When she looks at it she will give birth immediately. Be careful not to perform this praxis, nor any other one, until the cervix is dilated.

S. Sirillo is almost certainly identical with Solomon Sirillo, the famous commentator on the Jerusalem Talmud. This text adds another dimension to the portrait of this scholar, who is remembered solely as a legal scholar. In Arabic medical literature, especially in genres such as “medicine for the poor”, magic also figures prominently in discussions of conception and contraception.

To prevent conception immediately after childbirth Vital recommends that one take the first dish that she eats from after parturition, and place it upside down under her bed. For as long as it remains in that position she will not conceive.

To ensure the survival of children Ḥayyim Vital recommends a technique mentioned by David ibn Rosh, namely, to call one’s sons Gamli’el

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261 See Trachtenberg, op. cit., note 125 above, p. 188.

262 Fol. 69a, no. 225. For other praxes see ibid. nrs. 226, 228, 231; fol. 102b, no. 21; fol. 103b, no. 39; fol. 108b, no. 155.

263 Fol. 69b, no. 229.


266 Fol. 70a, no. 273.
or Zuriel. For protection against Lilith he borrows a praxis from the work Kaf ha-Qetoret: write on the head of a woman in labour the Biblical verse “Do not deliver Your dove to the wild beast” (Ps. 74: 19). Another form of magical protection against Lilith — who Vital comments, is also called “burusha” (=broxa) — is to hang the stone known as “ojo de gato” or “ayn al-hirr” on a new-born child. Vital records some of his own experiences in the ongoing battle with Lilith:

I have written these well-known amulets more than two thousand times and they were always effective. Once it happened that an infant remained healthy until the twentieth day after his birth. On the night of the twentieth he choked and no longer nursed. They gave him milk by means of a bottle and he survived for four days, after which he died. I did not know if this happened because the amulets were not completely efficacious, or because the mother left the room so that the infant remained alone [for a while] and was harmed. I also tried the following on that occasion: I put circumcised foreskin in the mouth of the infant and gave him some blood from a newborn hedgehog (I took care that a hedgehog would be in the house before the child’s birth). But all this was to no avail. Why, I do not know.

Though he may have exaggerated the number of amulets that he wrote, this account reveals how deeply involved Hayyim Vital was in magic, on a practical as well as on a theoretical level. The use of hedgehog blood in the praxis has parallels in Muslim literature. According to the Islamic naturalists, the organs of the hedgehog possess numerous therapeutic qualities.

The various praxes recommended by Vital for the survival of infants are a reflection of the high mortality rates in medieval Middle Eastern Societies, particularly among new-born infants, children less than two years old, and children of the lower socio-economic strata. Indeed Vital’s own

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267 Fol. 69b, no. 235. For other means see ibid.
269 Cf. Trachtenberg, op. cit., note 125 above, p. 278, n. 34: “Broxa”, “maleficas et sortilegas muliereculas . . . quae vulgaret Broxae nuncupantur” (Ducange, s.v.); Spanish, broxa; Provençal, bruscher, originally denoted an unwholesome night-bird, and came like sbx to mean “witch”. 270 Spanish for “cat’s eye”.
272 Fol. 67b, no. 198; for other praxes see fol. 71a, no. 260; fol. 104a, no. 48; fol. 107b, no. 147.
273 Trachtenberg, op. cit., note 125 above, p. 169, refers to the custom that mothers do not leave the house until after the circumcision of their newborn ones.
274 Fol. 50a, no. 41; and see addenda.
276 See Avner Gil’adi, Children of Islam, Concepts of Childhood in Medieval Muslim Society, Oxford 1993, pp. 69–78.
family, typical of others in the 16th century Middle East, suffered from an elevated infant and child mortality rate. His eldest son Yosef, died at 18 months; his second son, Nehemiah, died at age 13; his daughter Angela died in Damascus in 1609, probably as an adolescent.²⁷⁷ Vital also recommends natural remedies for problems engendered by childbirth. Thus the text includes a treatment for a woman whose perineum was severely torn by the hands of the midwife during the parturition.²⁷⁸ Other gynecological issues discussed in Vital’s Book of Secrets are a test to determine if a woman’s inability to conceive should be attributed to her or to her husband,²⁷⁹ and another to discover if a foetus is male or female.²⁸⁰ To find out whether a girl is still a virgin Vital suggests the following: “take three dried figs and a small quantity of pure frankincense, ground them, mix the compound with water, have the girl to drink it on an empty stomach and wait for a quarter of an hour. If she is a virgin, she will have to yawn with such intensity that tears will almost come out of her eyes.”²⁸¹ When a widow who remarries after a long time, or a virgin with a narrow vagina, suffers from bleedings as a result of sexual intercourse, Vital prescribes one qirāf²⁸² of civet (algilā, zabād) — odorous, of a good quality, and unadulterated — which should be applied to the glans of the husband’s penis shortly before intercourse.²⁸³ Male sexual disorders: Vital discusses a variety of male sexual disorders. For a man who suffers from impotence, especially when he has not had sexual intercourse for a long time but has been craving it, Vital recommends a maʿjam (electuary) concocted from dates which have been steeped in goat’s milk, pine apples, and honey. The ingredients should be boiled and then mixed with spices such as ash-tree, sweet reed, and galangale. He also advises the impotent man to overcome his sadness and to strive for joy, pleasure, and enjoyment with his wife.²⁸⁴ Although several Arab authors had recognized the role of psychological factors in sexual disorders, it was left to Maimonides to stress the primacy of these factors.²⁸⁵ And Vital,

²⁷⁷ See Benayahu, op. cit., note 3 above, pp. 15-6, n. 8.
²⁷⁸ Fol. 26a, no. 183.
²⁷⁹ Fol. 70a, no. 245.
²⁸⁰ Fol. 70b, no. 250; fol. 108b, no. 157.
²⁸¹ Fol. 70b, no. 253.
²⁸² Is 0.2232 grams; see Hinze, op. cit., note 226 above, p. 27.
²⁸³ Fol. 49b, no. 28. Cf. the section on cosmetics where Vital gives a recipe for the adulteration of civet.
²⁸⁴ Fol. 25b, no. 178. For other remedies see fol. 83a, no. 18; fol. 92a, no. 176; fol. 109a, no. 174; fol. 109b, no. 190; see as well fol. 83a, no. 19 for a regimen, derived from the work of an eminent physician to increase one’s sexual vigour.
²⁸⁵ Maimonides, Fi al-jinām; (Hebrew transl.) ed. H. Kroner in Ein Beitrag zur Geschichte der Medizin des XII. Jahrhunderts an der Hand zweier medizinischer Abhandlungen des Maimonides auf Grund von 6
whose erudition certainly included Maimonides’ legal, philosophical and medical works, was undoubtedly influenced by his illustrious predecessor’s views.

An anaphrodisiac that Vital recommends involves the focused recitation of “Sanvi, Sansanvi, Semangelaf,” the names of angels usually invoked in the Jewish tradition for the protection against Lilith. To prevent a nocturnal emission Vital recommends several praxes. One of them is to eat a small quantity of the seed of harmel. Another is to take a dirham of camphor, place it in some pepper, bind it in cotton, and to hang it around one’s neck. The importance attached to the prevention of a nocturnal emission by Vital becomes understandable in the light of the fact that the Zohar and, later, the Kabbalists of 16th century Safed regarded such “wasteful” or “destructive” emissions as grievous sins. One indication of how seriously Vital regarded this sin is the fact that some five years after he had experienced an improper emission of semen he was still concerned with the spiritual consequences of his act and attempting to achieve a complete Tikkun (rectification). One of the most complete Tikkunim found in Sha’ar Ru’ah ha-Kodesh is for “Shikhvat Zera” le-Bhaṭṭalah” (wasteful emission of sperm). Also, as Samuel Vital notes, Luria interpreted the Shema recited before one retires at night as, in large measure, a Tikkun for this sin.

Pediatrics: In a section in which several children’s diseases are discussed, we find one of the rare instances where Vital discusses aetiology. In the case of a young child who cries constantly, Vital mentions three possible causes: (1) The child is wicked and bad-tempered. (2) He suffers from abdominal pain. (3) He was always left alone when he was an infant and, consequently, suffers from a spirit that comes to him from without and causes him to weep. Other children’s diseases treated in this section are

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Footnotes:

286 Fol. 76b, no. 382.
288 Fol. 59a, no. 26 (No. 26 features twice, the first time for a remedy for lice).
289 Fol. 76b, no. 380. For other means see nrs. 381, 384; fol. 48a, no. 3; fol. 103b, no. 46.
290 See discussion of nocturnal emission in Jewish law and mysticism in Feldman, op. cit., note 259, ch. 6, esp. pp. 114–119.
291 See section II on magic, no. 13, esp. n. 199.
293 Ibid., fol. 23a (Tikkun 27).
295 Fols. 71a–72a. For other children’s diseases see fol. 26b, nrs. 189, 190.
296 Fol. 71a, no. 264.
epilepsy, mouth-ache, teething pain, and cough.\textsuperscript{297} In this context Vital also provides rare descriptions of the preparation of such remedies as oil of absinth (\textit{ya\textipa{2}ba blanca}; a\textit{f}as\textit{a}nt\textit{m}) and oil of mastic. Another case in which Vital considers possible causes is that of extreme thirst in children. The causes that he suggests are: (1) The flight of an owl (\textit{b\textipa{1}ma}) in the sky above a child.\textsuperscript{298} It is evident that this cause, which Vital claims to have verified with his own eyes, belongs more to the realm of superstition and folklore than to that of medicine. (2) Teething, which causes diarrhea and fever as well as extreme thirst.

The manufacture of drugs: In one section of his Book of Secrets Vital describes the manufacture of different syrups. His source of information is, he acknowledges, “a work known to the physicians for syrups (\textit{shar\textipa{b}\textipa{1}b\textipa{2}t}) and the like, which are prepared in various ways.”\textsuperscript{299} In Arabic medical literature the medicinal syrups are described in special manuals on compound remedies, called “Aqr\textipa{1}b\textipa{2}d\textipa{1}hi\textipa{1}n\textipa{1}t”. Inspired by the translation of Galen’s work \textit{On the compound remedies}, many Arab physicians wrote such handbooks. Much of the information in the handbooks may be traced to the classical medical compendia, including the oldest extant representative of the genre, al-Tabari’s \textit{Firdaws al-hikma}, which was composed in 850.\textsuperscript{300} After an introductory discussion about the clarification of sugar (\textit{clarificar baa\textipa{1}as\textipa{1}k\textipa{2}ar}), an essential ingredient for all syrups, Vital describes the manufacture of such syrups as: oxymel (\textit{jarabe az\textipa{2}tes\textipa{1}s\textipa{1}o}; \textit{sik\textipa{2}anjab\textipa{2}m}), citron, pomegranate, pumpkin (\textit{calabaza}), roots (\textit{ra\textipa{1}ce}) of parsley (\textit{pe\textipa{1}\textipa{1}j\textipa{2}l}), asparagus (\textit{esparrag\textipa{1}os}), rose (\textit{rosado}) and violet (\textit{violado}).\textsuperscript{302} Other manufacturing processes described include the extraction of oil from wheat,\textsuperscript{303} and the production of oil from egg yolk.\textsuperscript{305}

Diseases transmitted by vermin: Vital often discusses substances which kill or repel vermin, such as snakes, rats, mice, ants, fleas, and lice, and remedies for their stings or bites. Hazardous infestations were very common in 16th century Middle East, when the majority of the population lived amidst

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\textsuperscript{297} For still other diseases see fol. 20a–b, nrs. 139–141; fol. 21b, no. 148.
\textsuperscript{298} Fol. 21a, no. 145.
\textsuperscript{299} Cf. al-Qalani\textae, Aqr\textipa{1}b\textipa{2}d\textipa{1}hi\textipa{1}n, transl. Irene Fellman, Beirut 1986, in Kommission bei Franz Steiner Verlag — Wiesbaden, p. 269, s.v. \textipa{2}r\textipa{1}be. “Die Sirupe sind Frucht- und andere Sa\textipa{1}fte, wenn man sie mit Zucker und Honig kocht, bis sie eine Konsistenz wie Oxymer oder Apfelsirup haben.”
\textsuperscript{300} The section runs from fol. 22a, no. 156-fol. 23b, no. 157.
\textsuperscript{301} Firdaws al-hikma, ed. by M.Z. Siddiqi, Berlin 1928; see Ullmann, op. cit., note 62 above, pp. 299–311.
\textsuperscript{302} See as well fol. 24a, no. 167 where Vital recommends putting some wax into the kettle with boiling sugar or honey in order to prevent it from bubbling over.
\textsuperscript{303} Other manufacturing processes described by Vital are: the production of tablets which strengthen the heart (\textit{tabletas de coraz\textipa{2}n}); see fol. 24a, no. 166.
\textsuperscript{304} Fol. 89b, no. 142.
\textsuperscript{305} Fol. 97b, no. 244.
squalor and dirt which attracted all kinds of vermin. Magical praxes also play a prominent role in Vital’s treatment of vermin. To repel snakes he recommends that one place pulverized garlic in their holes and in every corner of the house; again, one may fumigate the entire house and its holes with the horn of a stag. After a description of the effects of the various snakebites, he suggests a combination of treatments, rational as well as magical: “Tie the spot above the wound, and cut it with a lancer; then press on the wound and squeeze it slowly while uttering a charm; write this charm on the right palm of the patient, who must then lick the charm; heat a round piece of iron and put it on the place around the wound so that it will singe the flesh around it. To cure someone bitten by a rabid dog he recommends: “Take the liver of the dog that bit him, roast it in the fire and give it to the patient before he begins to bark, for after that there is no cure.” The Jerusalem Talmud tells us that Rabbi Judah ha-Nasi gave liver to his German servant in a futile attempt to cure him of rabies. The Book of Secrets includes an antidote for the venom of scorpions: “Pound aubergines (berenjina) and garlic, and rub it on the bite. Cover the patient until he sweats profusely.” For a bee or wasp sting Vital advises the sufferer to “pulverize one kernel of grapes and rub it on the spot.”

To repel and eliminate fleas he recommends: (a) that one use a bear skin mattress, which the fleas will avoid. (b) that one place the tail of a fox on the floor of a house; the following day, when one finds it infested with fleas, put it in water to exterminate them. To prevent fleas from entering

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305 For an extensive discussion of the hygienic conditions in Middle Eastern towns see Lawrence I. Conrad, The Plague in the Early Medieval Near East (PhD dissertation), Princeton University, 1981, pp. 388–412; idem, op. cit. note 27 above, p. 708; for the hygienic conditions in Fustat in the days of Maimonides see my forthcoming article “Maimonides on the preservation of health: tradition or innovation?” (IRAS); for a description of the prophylaxis against vermin and the actual treatment of stings and bites caused by vermin during the pilgrimage to Mecca see my “Qustā ibn Lāqī’s Medical Regime,” op. cit. note 211 above, chs. 11, 12.

306 Fol. 73b, no. 313. This pesticide was very popular in ancient and medieval literature; cf. my “Qustā ibn Lāqī’s Medical Regime,” op. cit. note 211 above, p. 131, n. 279. For a magical praxis recorded by Vital see ibid., no. 316.

307 Fols. 64a–b, no. 106; for other incantations see fols. 63a–64b. Another remedy recommended on fol. 99b, no. 270, is the stone called bujur al-haya (snake-stone; cf. Petavius Dioscoridis Anazarbii De Materia Medica Libri Quinque, ed. M. Wellmann, 5 books in 3 vols., repr. in 1 vol., Berlin 1958, bk. 5, no. 143).

308 Fol. 73b, no. 314. For another recipe see ibid. For a protective means against the bite of a dog see fol. 103b, no. 42.

309 TY Yoma 8.5. For a more extensive discussion of the references to this disease in Bible and Talmud see Fred Rosner, Medicine in the Bible and the Talmud, New York 1977, pp. 50–4.

310 Fol. 73b, no. 315. For other recipes see ibid.; fol. 83a, no. 15, and fol. 89b, no. 145.

311 Fol. 11b, no. 38. In another recipe (fol. 24b, no. 174) he recommends that one first remove the sting and then smear moist mud on the wound.

312 Fol. 73b, no. 309. For other means against fleas see ibid., no. 312; fol. 109a, no. 178.
the ears of small children Vital recommends that parents apply olive oil to the area around the ears,\textsuperscript{314} to prevent mosquitoes from stinging a child's face one should apply olive oil to his face.\textsuperscript{315} For fleas on a woman's head he suggests a salve prepared from sulphur and olive oil which must be rubbed into the roots of her hair.\textsuperscript{316}

To kill mice Vital recommends the following recipe:

Take the poison known as "realgar", which is called in Arabic "rahi al-fār" (mice-dust)\textsuperscript{317} (both the white and the green kinds, for the white is sharp and strong and mice will not eat it; if it is mixed with the green kind, the mice will consume it and it will have a powerful effect); mix one part of it with one part of grated cheese and three parts of fine flour. The poison should be pounded into a very fine substance and thoroughly mixed with the flour. Put this mixture in a pot close to the holes of the mice, so that they will eat it and will die. Cover the water in the house so that the mice will not drink and thereby weaken the power of the poison. . . . Another reason to cover it is to prevent people living there from drinking it.\textsuperscript{318}

To chase mice from one's house Vital quotes a formula of R. Nethan'el ha-Tokhen, which he has illustrated with four sketches of a mouse:

Draw these four sketches on earthenware pots which have not been used for cooking, and put one in every corner of the house. Over the first pot say: Leave this house and never return to it; this house is forbidden for you. Over the second pot say: Mice, mice, leave this house in the secret name of God who has created you, and do not return. Over the third pot say: Mice, mice, leave this house and do not return to it from this day until the Resurrection of the Dead. Over the fourth pot say: Mice, mice, soon no one of you will remain in this house, soon, soon.\textsuperscript{319}

To prevent ants from getting into a pot of honey Vital recommends the following praxis: "Put the pot of honey where you want to keep it, hold your breath, lift the pot up, and set it down again. Ants will not enter it as long as it is not removed from its place."\textsuperscript{320}

Plague. Vital evidently devoted much effort to different natural and magical remedies for plagues, and to the regimens appropriate in times of plague.\textsuperscript{321}

The Book of Secrets includes two different versions of an amulet against
the plague, illustrated with two drawings. With regard to the second amulet, Vital remarks: "I have seen [the following] written: I heard from R. Nethan'el that his beloved Maggid told him [how to construct this amulet], which he tried in Alexandria in the year 1579 when more than three hundred persons died of the plague. He tried it on 48 persons and all of them were saved." Vital remarks that in times of plague two different regimens are appropriate, one for the healthy, which is called the "regimen of health", and the second for those stricken by the plague. Moreover, two distinct regimens of health may be delineated; one, involves Kavanot, Names, and Bible verses, and the other natural techniques. Vital's discussion of the plague probably reflects his own experience during the epidemics which occurred with terrible frequency during his lifetime in Syria and Palestine. Indeed, his master, Isaac Luria, died in the Safed plague of 1572, a tragedy which drastically altered the course of Vital's life.

Urology: In a brief, but significant theoretical discourse entitled "Yedi' at ha-Shetan be-Qizzur" (A brief study of urine), Vital prefaces his remarks with a review of the first principles of medieval medicine: health depends on the balance of the four humours in the human body (blood, phlegm, yellow bile, and black bile) and their qualities (warm, moist, dry and cold); illness results when this balance is disturbed. In accordance with the general principle of contraria contrariis curantur, Vital prescribes hot remedies for diseases caused by cold, and cold remedies for diseases caused by heat. After this introduction he describes the formation of the urine in the human body and its use for medical diagnosis (uroscopy), based on its different colours and its consistency.

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323 Fol. 82a. Michael W. Dols ("The second plague pandemic and its recurrences in the Middle East: 1347–1894", Journal of the Economic and Social History of the Orient, vol. XXII, Part II, pp. 162–189, p. 176), remarks that between 1571 and 1865 the plague occurred in Egypt once in every nine years; one of these in 1580–1.

324 Fol. 52b, no. 78; this section records a magical praxis recommended by Vital which originated with R. Y.T. Zahalon, who in turn received it from Isaac Luria; this type of regimen was elaborated in Sha'ar ha-Kavanot (n. 123 above), fol. 13b–14c.

325 Fol. 52b, no. 78.

326 Dols. op. cit., note 323 above, p. 176, remarks that major epidemics occurred in Syria-Palestine in the years 1571, 1575, 1589, 1642–1644 etc., with an average interval of fifteen years.

327 See Benayahu, op. cit., note 7 above, p. 347.

328 Fol. 25a–b.

Cosmetics: The Book of Secrets offers a wide variety of formulae for cosmetics. Since traditional perfumes were very expensive, there were many attempts to substitute cheap concoctions for the authentic ingredients. Recipes for such spurious cosmetics can be found in the works of various Arab authors; one of the most famous is al-Mukḥtar fi kashf al-‘asrūr (The selection in the unveiling of secrets) by al-Jawbarī (13th century). This work has been described as “a concise encyclopaedia of tricks, practices, and devices used by fraudulent Sūfis, false alchemists, beggars, impostors, jugglers, quacks etc.”330 In this “tradition” Vital explains how to formulate a substitute for civet, a mixture which, he claims, is called “buṭāna” by the falsifiers. He instructs one to “take muscat nut [oil], warm it in the fire, melt virgin white wax into it until it becomes a soft uncture like [real] civet, and mix. If you do not find the aforementioned oil, mix it with the oil which is used to blacken the flesh side of strips of hide.”331 Another important ingredient in cosmetics is ambergris. According to al-Zahrāwī (d. 1013) the best ambergris is “that which is free from sand, dirt, and the odor of the whale. It is hot and has a strong, pleasant aroma.”332 To test the authenticity of ambergris which, Vital remarks, “derives from a big fish called baleab,”333 he recommends the following method: “put one dinār of gold on a coal fire until it turns red; put some of the [suspect] ambergris on it; if the ambergris does not adhere to it at all, it is of a good quality, and unmixed.”334

To lighten a woman’s skin Vital prescribes a cream prepared from mercury and corrosive sublimate.335 To remove freckles (petas) he recommends a cream concocted from lemon juice and eggshells; another method involves the nightly application of bat’s blood to the freckles.336 And to make one’s face more radiant and beautiful, Vital suggests that one wash it every morning with mayim serufim (agua ardiente),337 which, he claims, is also

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331 Fol. 59b, no. 44.
333 is Arabic ‘baʿal (whale); cf. Spanish ballena.
334 Fol. 64b, no. 115. For a test for balsam oil see fol. 88b, no. 56.
335 Fol. 73b, no. 317.
336 Ibid., no. 318. Another means to remove freckles (‘aḥabina) and to bleach facial skin is mentioned in no. 319. Chapter four of al-Zahrāwī’s K. al-‘asrūr deals o.a. with medications to bleach the skin and beautify its appearance and colour, and to remove freckles, cf. Hamarneh, op. cit., note 332 above, p. 196.
an effective treatment for wrinkles. Bat’s blood is said to inhibit hair growth; repeated applications of parsley (peryj) juice to stimulate it. Vital also recommends concoctions to encourage the growth of one’s beard, and for dyeing one’s hair golden red or black. A formula for eye shadow states:

[Take] five dirhams of each of white sugar and Nabataean sugar; two and a half dirhams of sarcocool; two dirhams of sal ammoniac; one dirham or half a dirham of aloe. Pound and strain these ingredients thoroughly. Paint the eyes with it in the afternoon, leave it for half an hour, then drip some milk from the breast of a wet-nurse in it to cool the heat of the eyes. Know that one should never paint one’s eyes on the day that one goes to the bath-house.

Astrology: The combination of medicine and astrology, called iatromathematics, is an ancient tradition which left some traces in Islamic medical literature; the classical compendia do not discuss it. However, al-Ṭabarī includes an extensive exposition of the fundamentals of iatromathematics in his Firdaws al-hikma, and al-Razi (865–923) devoted a chapter of his K. al-hawī (Liber continens) to it. Moreover, several Arab physicians were renowned astrologers. Vital’s familiarity with medieval astronomy is attested by his Sefer ha-Tekhunab, and, if the attribution of Goral Kodesh to Vital is correct, he was adept at astrology as well. Some of Vital’s medical praxes are contingent upon astrological conditions. For instance, a cure for diarrhea — three-year-old cescaval cheese — must be taken when the moon is waning.

Vital also includes two magic circles which, he claims, will enable one to calculate whether a sick person will recover from his illness or die. A similar calculation can be found in Moshe Gallena’s Sefer Hokhmat ha-Yad.

Veterinary medicine: To the field of veterinary medicine belongs this procedure for a hen with a torn crop:

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338 Fol. 74a, no. 320.
340 Ibid., nrs. 323-4; see as well fol. 92b, no. 179; fol. 103b, no. 37; fol. 104a, no. 49; fol. 104b, no. 69; fol. 105a, no. 93.
341 Fol. 75a, no. 346; another recipe is given in no. 350.
342 al-Ṭabarī, op. cit., note 301 above, pp. 541–556.
345 See above, note 3.
346 Scibilia, op. cit., note 1 above, p. 447, is doubtful regarding its authenticity, without stating why. Benayahu, however, op. cit., note 3 above, p. 4, considers it as genuine.
347 Fol. 49b, no. 32; see as well fol. 78b, no. 428; and fol. 74a, no. 325 for a medical procedure that must be carried out when the moon is waxing.
348 Fol. 82a, no. 111.
349 See n. 66 above.
First, sew up the tear with a thin linen thread, then feed her bread crumbs soaked in wine, and leave her for twenty-four hours. Do not give her any other food, but you may give her something to drink. The tear will heal slowly, although, initially you will see the water stream out of it. However, if the upper part of the crop is also torn, there is no cure for it. She is, as is well-known from the ruling of the Talmud, ritually unclean (trofa).\footnote{Fol. 11b, no. 44. Cf. TB Hullin 53b.}

For a hen picked so violently on the head by roosters that her skull became exposed, Vital recommends application of very fine ash, without admixture of charcoal or sand.\footnote{Ibid., no. 45.} When jumping or other activity causes an egg to become lodged inside a hen and she cannot lay it, one should grasp her wings with both hands and turn her upside down thrice, or let her drink some olive or sesame oil.\footnote{Fol. 52b, no. 77.}

Poisons: At the end of our survey of the medical components of Vital’s Book of Secrets, it is noteworthy that he includes techniques for maiming or killing, as well as for healing. One destructive prescription is: “A wonderful poison to kill someone: Take nitric acid after it has been used to separate gold and silver; give him only one dirham, and it will undoubtedly kill him. Test it first on a dog.”\footnote{Fol. 59a, no. 11; cf. fol. 64b, no. 116 for a lethal poison, and fol. 105a, no. 85 for a magical praxis to make one’s enemy so sick that he will die.} To blind someone Vital recommends that one grind the nest of a house sparrow into powder and strew it in his [enemy’s] eyes.\footnote{Fol. 65a, no. 121.}

III. Technology

1. Drink and food: In Hayyim Vital’s day Safed was an important centre for the production and sale of numerous agricultural products, such as wine, honey, cheese, oil, and fruits, which were traded in a special market.\footnote{See Izjak Ben Zvi, Erez Yisra’el we-Yishuvah bi-Yemen ha-Shliton ha-Ottomanai, Jerus. 1967, p. 172; Abraham Ya’ari, Izqem Erez Yisra’el, Jerus. 1934, repr. 1950, p. 187.} Wines figure prominently in the Book of Secrets and Vital includes recipes for the following varieties: (a) Boiled grape wine, that remains good for two years.\footnote{Fol. 13a, no. 63.} (b) Raisin wine, which, he claims, is superior to that prepared from grapes.\footnote{Ibid., no. 65.} (c) ‘Instant’ raisin wine, which may be prepared quickly, but remains good for no more than two months.\footnote{Fols. 13a–b, no. 66.} (d) Wine vinegar.\footnote{Fol. 13b, no. 70; fol. 66a, no. 157.}
Vital describes the preparation of several milk products: yoghurt (ḥalav hamreẓah, ḥagurte), buttermilk (ganbartis), and groats (kisbeḥ). He also includes recipes for the preparation of such diverse foods as grape and raisin honey, raisins, sweets called “ḥaliwjāt”, prepared from honey, sweets called “ḥaliwjat ṭāḥīniya”, prepared from honey and sesame-seed meal, dried figs, artificially sweetened figs, and starch (almidion; nashban).

A recipe for the preparation of leavened bread without the inclusion of yeast states:

Take a small quantity of yeast, and wrap it in a thin linen cloth smeared with oil, so that the yeast will not adhere to the cloth. Take the dough that you wish to leaven and plaster it on the cloth in which you wrapped the yeast. Cover the dough with many cloths so that it will remain warm for one day. Afterward you will find it leavened . . . [and] you may use it for leavening an amount of dough as large as you wish.

Vital remarks that this method is especially good for the evening after Passover, for thus one need not use yeast acquired from the Gentiles to make leavened bread. The entire method suggested by Vital is somewhat confusing; either way one has to start with the Gentiles’ yeast, since after Passover, the Jewish community has no yeast at all. The advantages of the method are that one need not include substantial amounts of the Gentiles’ yeast, and that one can limit the use of the Gentiles’ yeast to indirect contact. Again, to prepare meat quickly Vital suggests several recipes, one of which reads:

Remove the meat from the pot when it is boiling, put it in a bowl and pour cold water over it. Return the meat to the pot and let it boil [again]. Some men add to this [another technique]: when they pour the cold water over the meat they should shout “I”, as the Arab women do; then recite the following incantation: Ga Amatekh Tenaqeq Hayatekh. This is what the Tosefta forbids: that the women shout into the pot etc.
To create a paper frying pan that will not burn when used for frying eggs or fish, Vital instructs one to fold the paper double and put oil inside.\textsuperscript{370} He suggests that, if one wishes various foods to 'jump' when fried or boiled, one should put mercury in the pan.\textsuperscript{371} Similarly, to make a chicken revolve on the spit by itself, Vital recommends that one put mercury between the skin and flesh of the chicken.\textsuperscript{372} To remove salt from food one should add a piece of charcoal to the pot, for the charcoal will absorb the salt.\textsuperscript{373}  

2. The removal of spots on garments and other materials: The Book of Secrets includes recipes for the removal of oil, ink, and wine spots from garments, and, particularly, from wool, silk,\textsuperscript{374} and linen.\textsuperscript{375} For garments in general the author recommends that one "pound the root of galangale, and soak it in water overnight; in the morning boil the water, and put the garment in it." He also mentions methods for cleaning materials such as paper.\textsuperscript{376}  

3. The dyeing of garments: 16th century Safed was famous for the production and sale of garments, which centred in a special market.\textsuperscript{377} Dyeing was an important facet of the textile industry and it is not surprising that Vital includes formulae for several dyes in his Book of Secrets. The following recipe for a dye from Armenian earth (\textit{bōl armenike}; \textit{ién armant})\textsuperscript{379} is typical:

\begin{quote}
Wash the garment with Luke warm water and dry it. Determine how much water it will absorb, take that amount of water, add alum to it, and boil the garment in it twice or thrice. Remove it from the water and wring it out very well. Take the water that has been wrung out of it and add clean water so that the [total] amount will be the same as the initial [volume of] water. Boil the garment in this water, with the Armenian earth twice or thrice, then remove it and dry it in the air, but not in the sun, for the sun destroys the colour. The following amounts should be used: for every four parts of cotton one eighth part of alum, and one fourth part of Armenian earth. But if one uses more of Armenian earth, it will be redder.\textsuperscript{380}
\end{quote}

Al-Hassan-Hill discuss dyes prepared from insects of the Coccidae family, from the madder plant, and from the privet henna, but they do not mention "Armenian earth." However, they refer to the fact that "classical and later literature does not reveal the whole range of dyes actually used

\textsuperscript{370} Fol. 10a, no. 1.  
\textsuperscript{371} Fol. 65b, nrs. 134–6; fol. 66b, nrs. 161, 163–4.  
\textsuperscript{372} Fol. 66b, no. 160.  
\textsuperscript{373} Fol. 77a, no. 387. For another recipe see ibid.  
\textsuperscript{374} Fol. 11a, nrs. 23–4, 26, fol. 51a, no. 51; fol. 65b, no. 131; fol. 89b, no. 139.  
\textsuperscript{375} Fol. 51a, nrs. 53–4; fol. 65b, no. 130.  
\textsuperscript{376} Fol. 89a, no. 140 gives a recipe to remove an oil spot in paper.  
\textsuperscript{378} Greek for \textit{bōl armenike}.  
\textsuperscript{379} For \textit{ién armant} see Goltz, op. cit., no. 39 above, p. 254.  
\textsuperscript{380} Fol. 17a, no. 90.
because these involved craft secrets which were never committed to writing but only handed down from father to son."^{381}

To dye a garment green (amarillo) Vital recommends that one first boil it with alum and then in a gnidium (tutumilio)\textsuperscript{382} solution;\textsuperscript{383} to impart a permanent blue colour to a garment he suggests a complex recipe which includes urine and indigo.\textsuperscript{384} The indigo plant, the main source of blue dyes, was cultivated in Palestine,\textsuperscript{385} and must have been familiar to Vital.

The Book of Secrets also includes techniques to restore the colour of garments spoiled in transit by the moisture of sea water,\textsuperscript{386} and colours bleached by acidic fruit juice or vinegar.\textsuperscript{387}

4. The restoration of precious stones: Interest in minerals and their properties was wide-spread in antiquity. Many early writers on herbs also wrote on minerals. Theophrastus, Dioscorides, Pliny and others discussed the mythological and medicinal aspects of minerals in their works. In medieval Christendom the lapidary of Marbode of Rennes (11th century) enjoyed a tremendous popularity.\textsuperscript{388} Marbode placed “an emphasis on the mystical and practical virtues of each stone.”\textsuperscript{389} Muslim writers exhibited a multifaceted interest in stones. Minerals and their properties were described in medical, commercial, technical, and chemical literature, and especially in a variety of books, primarily magical in content, which were devoted to the subject. One representative of the latter genre was ascribed to Aristotle.\textsuperscript{390} Vital’s Book of Secrets contains a technique for the restoration of the turquoise: “If you rub turquoise stones which are green as leek with pounded almonds they will regain their bluish colour... They will stay like that as long as they are not washed; but if they are washed, they will only remain like that for fifteen or twenty days.”\textsuperscript{391}

\textsuperscript{382} Probably from Greek Thumelata: “Gnidium”; see Dioscorides, ed. Wellmann, op. cit., note 308 above, bk. 4, no. 172.
\textsuperscript{383} Fol. 17a, no. 91. Al-Hassan-Hill, op. cit., note 381 above, p. 176, remark that “some green vegetable dyes came from the Thymelaeaceae family.”
\textsuperscript{384} Fols. 17a-b, no. 92.
\textsuperscript{385} Op. cit., note 381 above, p. 175.
\textsuperscript{386} Fol. 26b, no. 191.
\textsuperscript{387} Fol. 51a, no. 52.
\textsuperscript{388} Op. cit., note 167 above.
\textsuperscript{389} Ibid., p. XI.
\textsuperscript{390} E.I., vol. 3, pp. 29–30, s.v. hadjar (M. Plessner).
\textsuperscript{391} For the expression “ha-Yeroqim ke-Gon Karti” cf. Mi‘mah Sukkah III, 6: “Etrog... we ha-Yaroq ke-Karti.”
\textsuperscript{392} Fol. 58b, no. 2. According to al-Dimashqi (10th cent.), K. al-Ishārā, shiny deep-blue turquoise was the most valuable, while green turquoise was considered ugly; cf. Wiedemann, op. cit., note 331 above, vol. 1, p. 858. Al-Birūnī (11th cent.), K. al-jamā‘lār fi ma‘rijat al-jawwār, Hayderābād 1355, p. 171, remarks that turquoise is restored by means of fat (sauyā bi-l-dawān), and therefore becomes
Coral was traditionally associated with precious stones (*jawáhir*); al-Tífáší (13th century) describing it in detail, observes that coral participates both in the nature of a stone, because of its petrification, and in that of a plant because it grows on the bottom of the sea like a tree with branches. Various Arab authors — for example Yâyüt (d. 1229) — inform us that the coral won from the sea had a brown crust. It was then abraded until it took on its characteristic shiny red colour and was sold on the market.  

Al-Bīrūnī states, in the name of al-Kindī, that oil restores the lustre of coral. To restore its colour and shine Vital suggests that one rub coral, which is called *al-mārijān*, with pounded nuts. In another passage he recommends that one “smear [the coral] with linseed oil or olive oil, put it in a warm bread that has just been taken out of the oven, leave it there for half an hour until it has completely cooled, and then rub it clean with a piece of linen cloth.”

Pearls, like coral, were placed in the same category as minerals despite the fact that they are the products of marine animals rather than of geological processes. It is generally agreed in Islamic literature that the beauty of pearls depends upon the following four qualities: whiteness, purity, roundness, and brilliance. Consequently, techniques to restore the colour or lustre of pearls were highly valued; al-Bīrūnī describes different procedures to correct discolorations of pearls. In the same tradition, Vital reports that pearls — which contemporary experts claimed would disintegrate after 600 years — may be restored to their original beauty using a variety of techniques:

To whiten and clear pearls (*persats*) which lost their colour because one took them into the bathroom (nothing is so harmful for their colour and nothing changes them so much as the odour and vapour of the bathroom): Take equal parts of salt and turpentine (*tremenatu*), distill [the solution] with

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393 Yaqūt, *Muṣjam al-buldān*, ed. Wüstefeld, 6 vols., Leipzig 1866–1873, s.v. *Marbāʿ al-burāq* (= La Calle in Algeria, one of the most popular places where it was found).


396 Fol. 58b, no. 1. Cf. al-Tífáší, op. cit., note 271 above, pp. 178–185, and Clément-Mullet, op. cit., note 271 above, pp. 173–7. For the fact that oil makes coral shiny again see Dietrich (n. 395); the oil contained in the pounded nuts recommended by Vital probably had a similar effect.

397 Fol. 34b, no. 14.


400 Fol. 73a, no. 298.

5. **Inks and reeds for writing.** Rabbinic literature distinguishes between permanent and non-permanent inks. Ink proper was prepared from a mixture of oil and resin which hardened, and to which water was added. The most permanent ink was made by adding iron sulphate or vitriol to the conventional formula. Non-permanent inks were prepared from "taria water" (a wine derivative), fruit juices and juice of gall nuts.\(^{403}\) In Roman literature we find similar references to must and to mulberry juice.\(^{404}\) The Romans also used an ink prepared from the rind of the ash-tree, an ingredient which appears in Rabbinic literature as *mei melon* (juice of the ash-tree).\(^{405}\) This ink figures in the following tradition, recorded in the Jerusalem Talmud: "These people of the East are very cunning. When one of them wishes to write a letter in secret writing to his friend, he writes it with melon water (*mei melon = juice of the ash-tree*), and when the recipient receives it he pours ink over it and is able to decipher the writing."\(^{406}\) This tradition clearly assigns an eastern (Babylonian-Assyrian) origin to the production and use of invisible ink. The potential benefits of invisible ink were thoroughly discussed in the Arabic tradition. For instance, in al-Mu`izz ibn Bādis` monograph (11th century) on bookbinding, an entire chapter, entitled "On recording secrets,"\(^{407}\) is devoted to invisible inks. Such inks are a recurrent subject in the literary genre known as *khawāṣṣ*, which has been described above.\(^{408}\)

Vital may be presumed to have been intimately familiar with the techniques and materials of the scribes. His father, Yosef, was a scribe by trade.\(^{409}\) Thus, Vital grew up among the reeds, parchment and inks that are part of the trade. Moreover, Vital himself was a prolific writer, probably

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402 Fol. 58b, no. 6; another recipe (fol. 89b, no. 132) deals with the restoration of pearls which have turned green; yet another recipe (fol. 114a, no. 5) suggests a method for softening pearls so that he can easily be pierced.
405 TB, *Gittin* 19a; *melon* is Greek *melia* (ash-tree).
406 TJ *Shabbath* 12:4, 13d7; TJ *Gittin* 2:3, 44b91; cf. Krauss, op. cit., note 403 above, vol. 3, p. 150; *Encyclopaedia Judaica*, vol. 16, p. 670; the translation quoted is that of the E.J.
409 Cf. the testimony in the name of R. Yosef Karo, *S. ha-Hayyam* (see note 2 above), p. 2.
one of the most prolific mystical authors in the Jewish tradition. As such, he must have learned about writing materials — paper, inks, reeds — from his own extensive experience.

Vital distinguishes between ink proper (visible ink), invisible inks, and other kinds of ink. He offers several different formulae for ink proper, all of which have the same basic ingredients: water, gall-nuts, gum Arabic, and vitriol. For travellers who cannot take liquid ink on their journey he recommends a powdered ink consisting of pulverized gallnuts, gum Arabic and vitriol: when the traveller dusts his paper with this powder and writes on it with water, black letters appear.

Vital's recipe for invisible ink (when the substrate is paper) reads: "After you have cleaned the pen to remove the ink, write with onion juice. Let the onion juice dry by itself, and not by [the heat of] the fire. When you wish the letters to become visible, heat the paper over the fire..." Vital notes that other fluids — such as citron and orange juice, the juice of unripe grapes, and urine may be used as invisible ink and concludes that all fruit juices probably have this characteristic. A different kind of procedure for the secret writing on paper is contained in the following recipe by Vital: "Write with water of gallnuts only, which have not been left in the water for a long time, so that they did not become black, and after a little bit of water has been used for many gallnuts. Let it dry, spread the fine powder of vitriol on it and rub it with your finger with a little bit of your saliva, and the writing will become visible." Other recipes are for secret ink on a linen cloth, on an egg, on one's hand palm, or flesh. To erase something written with invisible ink, Vital suggests that one write over the offending letters with a mixture of one part nitric acid and two parts white wine.

Other kinds of ink mentioned by Vital are green ink, and gold ink. The use of gold ink is attested in ancient Jewish sources, which refer to the custom, later forbidden, of writing Torah and the name of God (i.e. the Tetragrammaton) in gold, rather than in the traditional black ink.

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410 Fols. 93a–b, no. 190.
411 Fol. 12a, no. 55.
412 Fol. 11b, no. 48.
413 Vitriol alone was already in Rabbinic times used for the preparation of ink, it had the characteristics of durability (Qiyama) and visibility (Rishon); R. Meir (2nd cent.) mixed it with ink (Deyh); cf. Krauss, op. cit., note 403 above, vol. 3, p. 151.
414 Fol. 12a, no. 52.
415 Fols. 11b–12a, nrs. 49, 50.
416 Fol. 96a, no. 208; see also fol. 109a, no. 177; fol. 115b, no. 18.
417 Fol. 51a, no. 50.
418 Fol. 77a, no. 393; fol. 107b, no. 132. This subject also occurs in the khab fís literature.
According to Löw, gold ink was invented by the Jews. However, as Krauss remarks, the only thing that we know for sure is that it originated in the Orient. Such inks also occur in non-Jewish sources such as papyrus Leiden X, a third century Egyptian text, which contains no less than 14 formulae for gold writing.

Vital remarks that the best reed for a pen is that which has grown, for at least one year, exposed to the sun in loam or clay. The reed should be harvested in December or January before its growth cycle begins anew, when the moon is waxing (but not when it is waning), and dried in the shade. About the best preparation of the reed he states that it should be smeared with olive oil, hung in smoke or blazing sun for two months, washed and dried.

6. Mathematical calculations: Vital demonstrates how to measure the height of a tower or a tree, how to determine which of two objects is taller, and how to employ a triangle in such calculations.

IV. Metallurgy and Chemistry

Precious metals: 1. Mining of silver and gold. In his theoretical introduction to mining and metallurgy Vital remarks that all ore contains a mixture of all seven metals; no ore contains a metal in pure form. Thus, unrefined metal derives its specific name from the fact that it is the predominant element in the mixture. He also observes that gold and silver ores contain a layer of marcasite, which covers the precious metal. Consequently, metallurgists speak of “gold marcasite” and “silver marcasite” with reference to the substratum.

Vital suggests the following technique for the initial separation of metal from the unprocessed ore:

Dig a long trench like a wooden trough used for washing; it should have a flat bottom, slanted sides, and two openings: one . . . for the bellows, and one at the [other] end so that the molten metal can flow out. The ore which has been excavated should be put at one end and, upon it, a

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423 Fol. 93a, no. 189.
424 Fol. 51b, no. 64.
425 Fols. 12a–b, nrs. 59–61; these calculations are illustrated with mathematical drawings.
426 In particular, the first section of part three (fols. 34a–47b) deals with this field, as indicated by its heading: “Part three: On chemical manufacturing processes involving the seven metals.” Another section is recorded on fol. 97a, no. 239-fol. 99b, no. 269.
427 Fol. 62a, no. 87.
428 For the Arabic terms see Goltz, op. cit., note 39 above, pp. 245–6.
429 Fol. 62a, no. 87.
large pile of burning wood, so that the metal melts and flows down the trench and through the opening into a cavity where it is collected. However, the worthless refuse . . . and litharge (marakmasdiqan, sidriq) is left behind . . .; only the molten metal flows into the cavity. Subsequently, one takes this [metal] and puts it into nitric acid to separate the silver from the gold.49

2. Construction of a furnace to melt gold and silver.430 This subject is also extensively treated in the Probierbüchlein and in the De Re Metallicca of Georgius Agricola (16th century).431

3. How to assay gold and silver; to distinguish between gold and allāton.432 Techniques for assaying the purity of gold and silver by means of a black silicious stone, the so-called “touchstone,” are rooted in antiquity. The touchstone is mentioned by Theophrastus in his book on stones; Pliny remarks that this method enables the experts precisely determine the amount of gold, silver or copper present, “their accuracy being so marvelous that they are never mistaken.”433 In Arabic literature this method is recorded by al-Hamdānī (10th century) in his monograph on the precious metals gold and silver.434 In the West the touchstone assay is mentioned in the Probierbüchlein435 and by Agricola.436 Vital mentions six different assays,437 but explicitly favours the touchstone method:

Rub the gold on the touchstone which is called “tuqī”, and put some saliva on it; pour some fine powder of corrosive sublimate on the streak, wet your finger with saliva and rub it lightly over the streak. If it is gold it will retain its colour, but if it is allāton it will immediately turn black and lose its [gold] colour completely. Similarly, if it is silver altered to look like gold, it will lose its colour completely. The same holds true if it is copper. Nothing can be compared to this assay.438

The effectiveness and accuracy of this test were of great importance because of the frequent attempts to adulterate gold and silver. The practice of forging precious metals was mentioned in the third century Leiden

430 Fol. 34a, no. 1.
433 Pliny, Natural History, Bk. XXXIII, ch. 43; cf. Stillman, op. cit., note 40 above, pp. 60, 304.
437 Fols. 34b–35a, nos. 17–22.
438 Fos. 34b–35a, no. 22; cf. fol. 114a, no. 1.
papyrus X, mentioned above. Ibn Khaldûn (14th century) describes the methods of the forgers in greater detail:

Certain alchemists restricted themselves to mere forgery. It may be of an obvious type, such as covering silver with gold, or copper with silver, or mixing the (two metals) in the ratio of one to two, or one to three. Or it may be a concealed type of forgery, such as treating a mineral to make it look like a similar one. Copper, for instance, may be blanched and softened with sublimate of mercury. Thus, it turns into a mineral that looks like silver to anyone but an expert assayer. Such forgers use their product to coin money with the official imprint, which they circulate among the people.  

Al-Dimashqî describes how swindlers forge silver and gold so that the fraud cannot be detected with the touchstone; he therefore recommends another method, called al ta‘liq. Vital also describes processes employed by the forgers, namely, the improvement of the colour of gold, and the blanching of silver.

4. To graduate gold: Vital gives several recipes for the improvement of the colour of gold, and to make it look like gold of twelve, sixteen and twenty carats. One recipe for the improvement of its colour is: “Take pulverized sal ammoniac (niabat), put the gold in water or in vinegar; sprinkle the sal ammoniac over it; put the gold into the fire until the sal ammoniac is completely burned; then extinguish it with water.” Vital also discusses the improvement of its colour when it has already been formed into something. He remarks that this is customary with all the goldsmiths. The best method is, according to him, to redden the gold in the fire until it becomes like a glowing ember, to take it out of the fire and extinguish it with water into which sal ammoniac has been melted; to sprinkle the gold when still moist, with the fine powder of one part of antimony (rašâqih), one part of sal ammoniac, and half a part of alum (alum). This process is mentioned in the Prosbeibuchlein as well, which recommends many different mixtures. Sisco and Smith remark that “though this was supposed to

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442 Fol. 35b, no. 35; fol. 37a, no. 43; fol. 38b, no. 46; cf. fol. 61a, no. 67 and fol. 68a, no. 200 (how to impart a wonderful colour to poor quality gold).
443 Fol. 36a, no. 39 - fol. 38a, no. 44; fol. 61, nrs. 78–9; see also fol. 90a, nrs. 254–5 for techniques to give silver the colour and weight of gold, and fol. 115a, no. 16 for different recipes to increase the purity of gold by means of cinnabar. Cf. Prosbeibuchlein, op. cit., note 24 above, pp. 129, 130, 136, 138.
445 Fol. 35b, no. 35.
446 Fol. 35b, no. 36.
improve density, color, and purity, the fluxes would generally add some copper and would enhance only the color.  

5. To purify gold and silver. Vital recommends the following method of purifying precious metals mixed with copper: “First assess how much copper is mixed with it; then melt the metal and slowly add a quantity of saltpeter equivalent to that of the copper. Pour the molten metal and saltpeter into the iron channel (Hariz ha-Barzil), and you will find purified silver at one end (bi-Qezeb ha-Sharvit) and the burned copper, looking like antimony and brittle as dust, at the other end. Strike the metal with a hammer, and the silver will remain intact, but the copper will disintegrate like dust.” Vital remarks that he did not find this technique in any book, but tried it himself with success. He is critical of a purification process employed by goldsmiths; it is, he claims, only efficacious for purifying silver.  

6. To make gold and other metals malleable. Vital describes several methods to enhance the malleability of gold, whether unadulterated or mixed with copper, antimony, tin, etc. One process derived from an unknown source and recommended for gold and silver, involves the addition of fine salt and a solution of urine and saltpeter to the molten metal. Vital remarks that when he tested this process on impure gold, the metal became more malleable, but the improvement was insufficient.  

7. To separate silver from gold by means of nitric acid. Unfortunately, the text is difficult to read because it has been obliterated, possibly to ensure the secrecy of the technique, which like the process of smelting with antimony sulphide, had been recently introduced by the Probierbüchlein.  

Copper, tin and lead. Although much of Vital’s text treats the precious metals, gold and silver, it also includes techniques involving copper, tin and lead. A brief survey of these techniques sheds more light on the extent of Vital’s metallurgical expertise: (a) A technique to burn copper, so that it becomes like antimony in nature and colour, involves the addition of an equivalent amount of saltpeter to the molten copper. Vital notes that he did not discover this method in a book; it was an unintended result of his
experimental work. (b) To hasten the process of melting Vital suggests that one pour a small quantity of sal ammoniac on the metal in the furnace.\textsuperscript{457} (c) To blanch copper he recommends that one melt ten dibams of the metal, add one dibam of arsenic blanc (rabj lavan),\textsuperscript{458} wait until it boils and the smoke clears, and pour it into the iron channel.\textsuperscript{459} (d) Techniques to burn (cabinar) tin and lead.\textsuperscript{460} (e) Methods of purifying tin.\textsuperscript{461} About one such method, which involves boiling the tin in olive oil, Vital remarks that he tried it without success, and that another (evidently untested) technique — with wax, rather than olive oil — may prove more efficacious.\textsuperscript{462} (f) Praxes to transform tin into silver.\textsuperscript{463} (g) Methods to purify and harden lead.\textsuperscript{464} One of the formulae instructs the metallurgist to repeatedly pour the molten lead into a solution of vinegar and salt. The final product will, when struck with a stone, have the clear tone that is characteristic of pure metals. (h) An effective means to redden lead, suggests Vital, is to expose lead to a solution of vitriol and lemon juice.\textsuperscript{465}

Among the theoretical subjects discussed by Vital is the characteristics that differentiate tin and lead from other metals. To the two characteristics noted in the *Bergbüchlein*\textsuperscript{466} — namely, smell and brittleness — Vital adds four others: fusibility, softness, sound, and tendency to produce slag.\textsuperscript{467}

*Forgery and fraud.* The element of forgery and fraud implicit in some of the processes described above, becomes explicit in Vital’s description of different means to debase coins. It should be noted that sixteenth century Safed was known for its trade in gold and silver coins, an activity that revolved around a special market.\textsuperscript{468}

The Book of Secrets includes a technique to increase the weight of a gold coin.\textsuperscript{469} First, Vital explains, one must apply a compound of cinnabar\textsuperscript{470} and fat to the surfaces of the coin, then rub the coin lightly and

\textsuperscript{457} Fol. 59a, no. 8; fol. 61a, no. 63.
\textsuperscript{458} This term is a combination of Arabic (rabj) and Hebrew (lavan); see Goltz, op. cit., note 39 above, p. 241.
\textsuperscript{459} Fol. 58b, no. 5.
\textsuperscript{460} Fol. 58b, no. 5.
\textsuperscript{461} Fols. 40b–41a, nrs. 61–3.
\textsuperscript{462} Fols. 40b–41a, nrs. 64; 66; fol. 58b, no. 4; fol. 97b, no. 240; for a recipe to make tin similar to silver see fol. 78b, no. 427.
\textsuperscript{463} Fol. 40b, no. 64.
\textsuperscript{464} Fol. 58b, no. 5.
\textsuperscript{465} Fol. 41a, no. 66.
\textsuperscript{466} Fol. 41b, no. 70.
\textsuperscript{467} Op. cit., note 24 above, p. 44.
\textsuperscript{468} Fol. 41a, no. 69.
\textsuperscript{469} See Ben Zvi, op. cit., note 355 above, pp. 170–1.
\textsuperscript{470} Fol. 41b, no. 72; cf. fol. 114a–b for recipes to increase the weight of gold. This subject is also discussed in the *Prüfbüchlein*, op. cit., note 24 above, p. 148.
\textsuperscript{471} For its identification see Goltz, op. cit., note 39 above, pp. 148ff; Multhauf, op. cit., note 19 above, p. 226, remarks that cinnabar is produced by heating mercury with sulphur.
slowly with ashes and water. Another way to defraud the public is to shave a thin layer of gold or silver from the edge of a coin. To avoid suspicion Vital suggests that, in the case of a gold coin, one rub the newly exposed metal with a potsherd lubricated with water or saliva.\footnote{Fol. 41b, no. 73.}

Another set of techniques enables one to alter the appearance of coins. Vital explains how to make a new silver coin look old and vice versa.\footnote{Fols. 41b–42a, no. 74; fol. 99a, no. 269.} He offers several formulae for blanching copper coins so that they appear to be silver.\footnote{Fol. 43b, no. 78; fol. 77a, no. 392; fols. 114b–115a, no. 12; another recipe (fol. 89a, no. 128) deals with whitening silver money.} One such formula involves a compound of one part verdigris (\textit{verdete}), two parts sal ammoniac, and two parts corrosive sublimate.\footnote{Fols. 42b–43b, no. 77; fol. 44a, nrs. 82–3; cf. fol. 92a, no. 177.} Vital includes a description of a plating process which can be employed to give inexpensive copper coins the appearance of valuable silver pieces.\footnote{Op. cit., note 434 above, chs. 47–52; pp. 352–363.} One must clean the surface of the copper coin, rub a potassium tartrate (\textit{tartfr})\footnote{Fols. 45a–b; fols. 67b–68a, no. 197.} and saltpeter compound into the surfaces with saliva, immerse the coin in nitric acid overnight, and repeat the procedure. Vital also includes techniques for engraving iron and for making an iron die for minting coins,\footnote{Fol. 60b, nrs. 57–9.} a subject treated extensively by al-Hamdānī.\footnote{Fol. 61a, no. 62.}

\textit{Chemistry; compounds and procedures.} Vital’s Book of Secrets contains formulae for the production of chemical compounds such as nitric acid,\footnote{See Goltz, op. cit., note 39 above, pp. 285–6; Multhauf, op. cit., note 19 above, p. 219.} antimony,\footnote{Fols. 43b–44b, no. 78; fol. 44a, nrs. 82–3; cf. fol. 92a, no. 177.} corrosive sublimate,\footnote{Op. cit., note 434 above, chs. 47–52; pp. 352–363.} ceruse (\textit{blanqete}),\footnote{Fols. 45a–b; fols. 67b–68a, no. 197.} saltpeter (\textit{sahnitri}),\footnote{Fol. 60b, nrs. 57–9.} \textit{mayim serufim or aquardiente},\footnote{Fol. 61a, no. 62.} and sal vocable (\textit{melah sheten}),\footnote{Fol. 62a, no. 81; for \textit{blanqete} cf. Goltz, op. cit., note 39 above, p. 247: “mittellateinisch \textit{blancsom}.”} obtained by distilling urine.\footnote{See Agricola, op. cit., note 431 above, pp. 561–4; saltpeter was in great demand throughout the Middle Ages for the production of gunpowder (Multhauf, op. cit., note 19 above, pp. 328–332).} His description of various techniques to “kill” (i.e. solidify) mercury reveals him as a chemist familiar with new developments and new terminology,\footnote{Fol. 13b, nrs. 67–9.} for, as Multhauf remarks, there was “an increasing conviction
among chemists in the seventeenth century of the desirability of appending to a recipe some reference to the character of the reaction, which they generally rendered in anthropomorphic terms.\footnote{Multhauf, op. cit., note 19 above, p. 300.}

Further testimony to Vital's experience as a chemist and metallurgist may be found in the following warning which he included in his Book of Secrets:

Everyone active in chemistry should be wary of the various toxic substances present when gold and silver are melted in the fire. One should protect oneself from them. The same is true of nitric acid, which is — as is well-known — used for separating silver from gold. But, most of all, one should be wary of mercury when it is in the fire, for mercury produces vapour which is dangerous when inhaled. It is a lethal poison from which corrosive sublimate is produced. Therefore be very wary of the odour (i.e., vapour) of mercury products such as corrosive sublimate, cinnabar, and the like.\footnote{Fol. 38b, no. 47; and see addenda.}

**Alchemy:** Although alchemy as such is virtually absent in the chemical and metallurgical procedures discussed above, it figures prominently in the following text, which Vital quotes from an unknown source (Ketuvah ba-Sefarim):

An important principle of the science of alchemy: Know that there is a body, namely, the metals; a soul, mercury; and a spirit, all the minerals that are consumed by the fire and evaporate: rub (which is called nihāy, sulphur, sal ammoniac, cinnabar, arsenic (zamāk)\footnote{See note 318; cf. Multhauf, op. cit., note 19 above, pp. 106—8.}, vitriol and the like. First, one should correct the aforementioned minerals so that they will endure the fire and the impurity, which causes their consumption in the fire, will be eliminated. Then one should correct the soul — namely, the mercury — so that its impurity will be eliminated and it will endure the fire. Then one should correct the body, metals such as gold, silver, copper, tin and the like. When these three have been corrected they should be melted and combined; this is called “yeast” (ser) and “elixir” (iskīr).\footnote{See Goltz, op. cit., note 39 above, pp. 239—241.} Hereafter when you put some of the yeast in the dough — namely, the silver, gold, copper, etc. — it will change into whatever you want. There are in fact two corrections, the first for whiteness — i.e., to make silver — and the second for redness — i.e., to make gold. These two corrections occur in . . . the spirit, soul, and body. Therefore the nature of the spirits is not the same, for one is good for whiteness and the other for redness. For instance, vitriol, sulphur, cinnabar, red arsenic, and the like, are good for gold. Rub, white arsenic, and the like, are good for silver. There is yet a fourth aspect: the minerals which correct the soul, spirit, and body; they are described in the books.\footnote{See E.I.\(2\), vol. 3, pp. 1087—8, sv. al-iskīr (M. Ullmann).}

The theory expressed in this quotation is the fundamental alchemical doctrine of the transmutation of the base metals into precious ones. The division of the minerals in three classes — bodies, souls, and spirits — is that of Arabic alchemy, although the Arab alchemists generally regard mercury as “spirit” rather than as “soul”. The method of transmutation described in
this quotation, the creation of an elixir, is predominant in Arabic alchemy. Finally the use of the terms "yeast" and "dough" to describe the elixir and base metal, respectively, also reflects the standard terminology of Arabic alchemy.494

Folklore, superstition and astrology

Scattered throughout Vital's Book of Secrets are praxes and prescriptions that belong, not to the categories surveyed above, but rather to the ill-defined realm of folklore and superstition. For example, Vital suggests that "one may distinguish between a virgin and a married woman by the length of their stride, for the stride of a virgin is shorter than that of a married woman; two strides of a virgin are equivalent to the length of an Ottoman arrow which is shorter than an Arab arrow."495 The story in TB Shabbat which links long strides to loss of virginity is probably related to this.496 Vital also recommends a technique to ensure that roosters placed together do not fight: "Dip the feet of both roosters in a bowl of water."497 In a similar vein he warns that "if one spits on the fire . . . pustules will appear on one's palate and tongue."498

Another section of the Book of Secrets includes a series of traditions that may stem from medieval Ashkenaz. Vital reports: "I have heard, and have also seen some evidence that one who serves as cantor during the Ne‘ ilah prayer on the Day of Atonement is at risk that year. It is said that there is no danger if he serves as cantor for another prayer, as well, such as Minhah or Shacharit of the Day of Atonement . . . or the Musaf prayer of New Year."499 Similarly Vital claims that "every Rav Yeshivah who studies tractate Yevamot, or Niddah, or Bava Batra in his Yeshivah risks dying before he completes it; [derived from] Rashi’s commentary on Bava Batra. My teacher [Isaac Luria], of blessed memory, died when he was studying the tractate Yevamot with his students."500 The notion that some tractate — especially those associated with mourning — pose a risk to those who study them publicly is rooted in Sefer Hasidim.501 Some people tried to coun-

495 Fol. 59a, no. 12.
496 TB Shabbat 63b.
497 Fol. 59b, no. 39.
498 Fol. 76b, no. 376.
499 Fol. 51a, no. 60.
500 Fol. 51a–b, no. 61; cf. Scholem, op. cit., note 1 above, pp. 421–2.
501 Sefer Hasidim, ed. Re‘uven Margaliot, Jerusalem 1950, no. 261; see as well the commentary Mehor Ḥesed, n. 6.
teract these risks by fasting before they began to study the tractates in question. Hayyim Benveniste (d. 1673) refers to a tradition among the Jews of Constantinople to avoid public study of the tractates 'Erubin, Niddah and Yevamot, the initial letters of which form the acrostic 'ani (impoverished). He also reports that they avoid Bava Batra because of its inauspicious name (Batra = final) or because Rashi became (terminally) ill when writing his commentary on it. He comments tartly: "On their explanation, they should be all the more fearful of [studying] tractate Makkot, in which [i.e., while commenting on it] Rashi died." Vital also warns that one should not serve as sandaq twice in the same year, lest one of the children die. He appends a similar tradition, attributed to R. Judah ha-Hasid: "One should not be sandaq for two brothers, sons of the same father."

Vital mentions a "terrifying" procedure, evidently of medieval Ashkenazi provenance, to ensure the survival of children plagued by early deaths. Upon the death of a child, "a coffin with a lock should be prepared; the mother should lock the key in the coffin [with the child’s corpse], and adjure the soul of the dead child not to leave the coffin and enter the body of her unborn [future] children. R. Judah ha-Hasid, knowing that demons exchange children even when they are in the womb, bound a red silk thread to the limb of a dead child, subsequently, the red thread was found on a newborn child."

One of the few passages devoted entirely to astrology is divided into Sha'ar ha-Kokhavim, which treats the seven planets that govern the seven days of the week, and Sha'ar ha-Mal'akhim, which concerns the seven planets, their angels, and their magical seals.

Conclusion: The Book of Secrets and its Author: The Book of Secrets sheds light on the vicissitudes of daily life in the 16th century Middle East. It reflects the fears of ordinary people and the responses of medical practitioners in an era of recurrent plagues, vermin-borne diseases, and inflated infant mortality rates. It reflects regional economic activity and, particularly, the fabric and precious metal markets which were so vital to the Safed of Vital’s youth. The Book of Secrets also portrays the trickery that was employed to entertain as well as to defraud innocents. Thus, Vital’s text corroborates and complements the testimony of other genres of literature, such as med-

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502 Kenesset ha-Golah, Yoreh De'ah 245.
503 Someone who holds the child on his lap for circumcision.
504 Yosef David (d. 1736) reports that the custom of the Jews of Salonika is to avoid being sandaq twice in one year (Beit David, Yoreh De'ah 122).
505 Fol. 51b, no. 62; cf. Zevu'at R. Yehudah ha-Hasid, printed in S. Hasidim, op. cit., note 501 above, no. 35. For other pairs see ibid., no. 477.
506 Fol. 69b, no. 236.
507 Fol. 95b, no. 204; this section follows various magical praxes derived from Nathan’el ha-Tokhe and may stem from the same source.
ical compendia and travellers guides, and enables us to draw a more detailed portrait of his socioeconomic milieu.

Vital’s Book of Secrets can also be read as the logbook of a 16th century physician and scientist who kept abreast of new developments in medicine, chemistry and metallurgy. Although the medical techniques described in the text often include magical praxes, they reveal a physician conversant with ancient medical theory, medieval pharmacology, and contemporary experimental work. As a medical practitioner and scientist Vital was not content to record the claims of others; he tested, modified and added to the scientific and technological data that he received. His chemistry, for instance, is virtually devoid of alchemical elements and reflects experimentation as well as erudition, empirical as well as textual study. Thus, Vital’s name should be added to the annals of science.

The Book of Secrets reveals hitherto neglected facets of Hayyim Vital’s personality. Vital, whose fame rests upon his accomplishments as Isaac Luria’s amanuensis and editor, rather than upon his original work, emerges from the pages of his Book of Secrets as an independent character, temperamentally at odds with his Master. His early attraction to the magical art — an attraction that Luria sought to “rectify” — and his later association with the exorcist Yehoshu’a Album can no longer be viewed as mere abbreviations. Although Vital may not have attempted all the magical praxes included in the Book of Secrets, the very compilation of such a text suggests an infatuation with magic. When one considers his observations on the praxes and his claim (however exaggerated) to have penned more than 2,000 amulets against Lilith, one must conclude that, despite Luria’s rebuke, Vital remained actively involved in magic throughout his life. Kabbalah may have eclipsed magic during those years when, under the profound impact of his Master, Vital edited and redacted the Lurianic corpus, but magic evidently reasserted its claim in his later years.

In addition to its contribution to a proper evaluation of Vital’s personality and endeavors — an evaluation which, as Scholem⁵⁸⁸, noted has yet to be attempted — the Book of Secrets remains the only representative of this 16th–17th century literary genre in the Hebrew language and, as such, is worthy of further study.

Addenda

Page 63: Vital’s own magical activities: From Vital’s autobiography we know that his contemporaries accredited him with magical powers, for in the year 1579 an Arab caretaker approaches him, kissed his feet and begged him for an amulet with the following explanation: “Now I know that you

are a holy man of God. For I am the caretaker of this synagogue and last night around midnight I left the building to relieve myself in the courtyard. The moon was shining like mid-day, I lifted up my eyes and I saw you flying in the air and floating over the synagogue for an hour. It was you, without any doubt.” (See op. cit., note 2 above, p. 7; transl. Mark Verman and Shulamit H. Adler, “Path jumping in the Jewish magical tradition,” *Jewish Studies Quarterly*, vol. 1 (1993/4), p. 143.)

Page 65: R. Lappidot: R. Lappidot is no one else but R. Lappidot Ashkenazi, who, Vital informs us, was a true diviner by means of conjuring the spirits of the dead (necromancy), and whom he visited in the year 1565 (See op. cit., note 2 above, pp. 2-3.)

Page 66: Magical tricks: Magical tricks and illusions are discussed in Rabbinic literature in the context of the prohibition of magic. It is ruled that the actual performance of magic is punishable by death, while the creation of an illusion is allowed (See Mishnah Sanhedrin, ch. 7, Mishnah 11; cf. TB Sanhedrin 68a; cf. E.E. Urbach, *The sages, their concepts and beliefs*, translated by Israel Abrahams, 2 vols. Jerusalem 1979, vol. 1, p. 100). In medieval western Europe we find rich collections of magical tricks, especially in MSS dating from the 14th and 15th centuries. A fine example is provided by the note-book of Thomas Betson (late 15th century), a monk at Syon Abbey in Middlesex. (See Richard Kieckhefer, *Magic in the Middle Ages*, Cambridge 1990, pp. 90-4).

Page 67: Qefizat ha-Derekh: For an extensive account of this praxis in Jewish literature see Verman-Adler, op. cit. Hayyim Joseph David Azulai (1724-1806) has preserved a popular tradition that Vital himself used this technique and jumped from Jerusalem to Damascus in order to escape the wrath of an Arabic prince (Verman-Adler, ibid., p. 143; for another account of Vital’s use of this technique see ibid.).


Page 83: Contraceptives and abortifacients: Contraception was restricted by Jewish law to the case of a minor, expectant, or nursing mother, while abortion was only allowed in cases in which the mother’s life was endangered (See as well Immanuel Jakobovits, *Jewish medical ethics*, New York, 1959, pp. 167-9; idem art. “Birth control” *Encyclopaedia Judaica*, vol. 4, cols. 1053-4).
Page 85: On Lilith: Vital’s belief in the danger and power of Lilith is also evident from the fact that according to him she holds sway over male infants for 40 days and over female infants for 60 days (Sefer ha-Liqqutim, Jerusalem 1913, fol. 6b), and not for 8 and 12 days respectively as stipulated in the Alphabet of Ben Sira (Eli Yassif, Sippurei Ben Sira bi-Yomei ha-Benayyim, Jerusalem 1984, p. 232, II. 8-10; Scholem, op. cit., note 1 above, p. 359, mentions a period of 20 days instead of 12 days for female infants). An indication for the immanent danger of Lilith is, according to Vital, if an infant laughs during his sleep, for then Lilith is playing with him. To avert the danger one should tap the infant on his nose. This was, as Scholem remarks, commonly believed from the 16th century (Vital, Sefer ha-Liqqutim, fol. 78c; Scholem, op. cit., note 1 above, p. 359).

Page 107: Vital’s warning against the danger of inhaling the vapours of different chemicals: How dangerous these kinds of vapours actually can be we are informed by the autobiography of Leon Modena (1571–1648), Italian rabbi, scholar, and writer, who lived one generation after Vital, and who lost his son Mordecai as a result of his chemical experiments. Having mentioned his son’s experiment of making ten ounces of pure silver from nine ounces of lead and one of silver, Leon Modena remarks: “On the holiday of Sukkot 5376 [October 15–23, 1615], much blood from Mordecai’s head suddenly started flowing out of his mouth, and from then on he ceased to engage in that craft (i.e. alchemy) because he was told that possibly the vapors and smoke from the arsenic and salts that go into it had done harm to his head. He remained like this for two years until his death, limiting himself to some light activities” (See Mark R. Cohen, ed. and transl., The autobiography of a seventeenth-century Venetian Rabbi, Leon Modena’s Life of Judah, Princeton 1988).