

Physicians, The Diffusion of Medical Knowledge, and Jewish Culture in Early Modern Europe

Andrew Berns, University of South Carolina

Abstract

Jewish writers in the Early Modern period had much to say about the land. They centered it in a variety of their compositions, and were attuned to environmental factors, including the influence of specific places on human health and culture. These texts include biblical commentary, letters, legal writings, encyclopedias, and more. The geocentrism found in many premodern Hebrew works is partly in debt to the influence of physicians and medical culture. Studying this phenomenon teaches us much about the application and diffusion of medical knowledge, and the cultural role of Jewish physicians. This perspective also challenges an entrenched assumption in Jewish historiography that emphasizes their cosmopolitanism. Even if Jews were frequently on the move, aspects of their thought were firmly rooted in the earth.

In Hebrew texts written between the fifteenth and seventeenth century, particularly from the Iberian and Italian peninsulas, there is a conspicuous focus on the land. In biblical commentaries, medical letters, encyclopedias, kabbalistic works, and rabbinic responsa a group of Jewish scholars lavished unprecedented attention to agriculture, the effects of environment on human beings, and geographical explanations of disease — even of biblical events. This essay explores some of the causes of this nascent preoccupation with the centrality of land and proposes several historical consequences to it. Ultimately, the increase in attention paid to land as a key factor in human health and culture may be attributed to the popularization of ideas concerning topographical medicine— descriptions of the influence of landscape on human wellness. Such ideas were not at all common in the Middle Ages; they emerged and ramified in early modernity. Studying early modern Jewish scholars' emphasis on the land pushes back against deeply entrenched historiographical assumptions about Jews as constantly mobile and deracinated from any fixed geography.

Causes for such concern with landedness in Hebrew literature of this period are various. Humanists recovered and translated classical texts in Latin and Greek that emphasized a connection between land and human culture, and Jewish scholars were increasingly exposed to these texts and ideas.¹ Kabbalists and non-mystical thinkers alike wrote about land as a

¹ On the humanist recovery of classical texts concerning the environment see Clarence J. Glacken, *Traces on the Rhodian Shore*, (Berkeley: University of California Press, 1976): 355-74. Perhaps the most important classical text on this theme is Hippocrates's *Airs, Waters, Places*. See Giles Maloney and Raymond Savoie, *Cinq cent ans de bibliographie hippocratique (1473-1982)* (Quebec: Editions du Sphinx, 1982). A medieval Hebrew version of *Airs, Waters, Places*, complete with Galen's second-century commentary on it, is available in *Galen's Commentary on the Hippocratic Treatise, Airs, Waters, Places, in the Hebrew Translation of Solomon Ha-Me'ati*, ed. Abraham Wasserstein (Jerusalem, 1982, Proceedings of the Israel Academy of Sciences and Humanities, Vol. 6, No. 3). Ha-Me'ati completed the Hebrew translation in 1299. The only extant manuscript was copied in 1475 by Yehiel ben Mordechai ha-Rofe of Grosetto. Oxford, Bodeleian Library, Opp. Add., 18.

metaphor for human flourishing and as a key physical factor in human life. Jews, especially in Iberia, noticed dramatic shifts in how land was managed and used.² And Iberian Jews who were forcibly expelled from their native land at the end of the fifteenth century represented the culmination of a process that marked the end of Jewish life in western Europe, rather than a singular occurrence.³ From the availability of new texts centering the earth beneath human feet to forced exile from ancestral homelands, a variety of factors precipitated intensified consideration of geography and physical setting in Hebrew works of this period.

As important as any of these reasons is the heightened role of Jewish physicians in this period.⁴ Jewish doctors became both more numerous and more prominent within their own culture, as evidenced by their Hebrew writings and the degree to which they were celebrated by their fellow Jews.⁵ They also had a more visible role in general culture, as is clear from their Latin and vernacular compositions and their role serving popes and secular leaders.⁶ Significantly, the period from ca. 1450 to ca. 1650 witnessed a broader diffusion of medical ideas than, arguably, at any time before. The spread of the printing press; the proliferation of Latin and vernacular translations of classical and contemporary medical literature; the heightened visibility of physicians in the wake of the Black Death and subsequent plagues all contributed to elevate the cultural visibility of physicians and spread their teachings.⁷ In spite of their professional

² Andrew D. Berns, *The Land is Mine: Sephardi Jews and Bible Commentary in the Renaissance* (Philadelphia: University of Pennsylvania Press, 2022).

³ Yosef Hayim Yerushalmi "Exile and Expulsion in Jewish History," in Benjamin Gampel, ed., *Crisis and Creativity in the Sephardic World 1391-1648* (1997): 3-22: 19-21.

⁴ David B. Ruderman, *Jewish Thought and Scientific Discovery in Early Modern Europe* (New Haven: Yale University Press, 1995; Harry Friedenwald, *The Jews and Medicine*, 2 vols. (Baltimore: Johns Hopkins University Press, 1944).

⁵ Cecil Roth, "The Qualification of Jewish Physicians in the Middle Ages," *Speculum* 28 (1953), 834-843; Giuliano Tamani, "Gli Studi Ebraici a Padova nei Secoli XVII-XX," *Quaderni per la storia dell'Università di Padova* 9-10 (1976-1977): 215-228. For the sixteenth century in particular see Emilia Veronese Ceseracciu, "Ebrei laureate a Padova nel cinquecento," *Quaderni per la storia dell'Università di Padova* 13 (1980), 151-168; Daniel Carpi, "Jews who Received Medical Degrees from the University of Padua in the 16th and early 17th centuries" [in Hebrew], in Daniel Carpi, Augusto Segre, and Renzo Toaff, eds., *Scritti in Memoria di Nathan Cassuto*, (Kedem Yad le-Yakirenu: Jerusalem, 1986), 62-91.

⁶ For example, David de' Pomi, the Spoletan Jewish physician, published treatises in Hebrew, Latin, and Italian, and in 1592 wrote a *regimen vitae* (health regimen) for Francesco Maria della Rovere, Duke of Urbino. The text remains in manuscript. See *Medicorum consilia in infirmitate francisci mariae II urbini ducis, an. 1592*. Vatican, cor. Urb. 1468, 119r-134r. Jewish physicians in this period served popes as well. On papal Jewish physicians see Gaetano Marini, *Degli architri pontifici* (Rome, 1784), passim.

⁷ In general see Mary Lindemann, *Medicine and Society in Early Modern Europe* (New York: Columbia University Press, 1999). See also Sabrina Minuzzi, "Printing Medical Knowledge: Vernacular Genres, Reception and Dissemination." *Nuncius* 36: 2 (2021): 193-197; Audrey Eccles, "The reading public, the medical profession, and the use of English for medical books in the 16th and 17th centuries." *Neuphilologische Mitteilungen* (1974): 143-156; William Crossgrove, "The Vernacularization of Science, Medicine, and Technology in Late Medieval Europe: Broadening our Perspectives." *Early Science and Medicine* 5:1 (2000): 47-63.

visibility, Jewish physicians were a numerically small group. Even so, their influence, and that of the broader, trans-confessional community to which they belonged, was marked.⁸

Emphasizing the role of Jewish physicians—as well as their non-Jewish peers—in guiding and shaping the intellectual life of the early modern period enlarges our understanding of premodern Jewish medicine. In addition to adumbrating the future success of Jewish physicians and scientists after Civil Emancipation in the nineteenth century, or of catalyzing modern Jewish integration⁹ Jewish physicians and those inspired by their example developed new ways to center their attention on land and its impact on human life. Their ideas, combined with their influence in society, led writers lacking medical training to integrate such ideas into other work to a degree previously unseen in the Jewish historical experience.¹⁰ One manifestation of this process is the frequency with which Jewish biblical commentators advance medical explanations for scriptural events.

Additionally, the phenomenon of Hebrew writing about land across a variety of genres should make us suspicious of stereotyped views of premodern Jews as perennially geoflexible.¹¹ We must not forget that the perception of Jews as rootless cosmopolitans was the offspring of European industrialization and anti-semitism.¹² Medieval Hebrew texts themselves do of course lament the seemingly endless persecution of Jews and the many acts of violence and expulsion they endured. But, as Yosef Yerushalmi has noted, these chronicles “emphasize the sudden and dramatic catastrophe and ignore the longer but duller stretches of the quotidian.”¹³ Certainly between the fifteenth and seventeenth century Jews in western Europe were migratory—perforce. In fact, this feature of their collective experience has been understood to define Jewish culture in early modernity.¹⁴ But aspects of Jewish thought were decidedly more localized, and

⁸ Susan Einbinder, *After the Black Death: Plague and Commemoration Among Iberian Jews* (Philadelphia: University of Pennsylvania Press, 2018), chapter three.

⁹ See the works cited in note 4 by Ruderman and Friedenwald, and John M. Efron, *Medicine and the German Jews: a History* (New Haven: Yale University Press, 2001).

¹⁰ Examples include Isaac Abravanel and Isaac Caro, whose careers spanned the end of the fifteenth and beginning of the sixteenth century.

¹¹ Salo W. Baron, *A Social and Religious History of the Jews*, 17 vols. (Philadelphia, 1952–), 12:28. More recently see Maristella Botticini and Zvi Eckstein, *The Chosen Few: How Education Shaped Jewish History, 70–1492* (Princeton, 2012). Perhaps the oldest statement of this motif is that of Max Weber, who claimed that exile “transformed the Jews from a people with a fixed territory to an alien people, and their ritual thenceforth prohibited fixed settlement on the land. A strict adherent to the Jewish ritual could not become an agriculturalist.” Max Weber, *General Economic History* (New York, 1927), 196.

¹² Yuri Slezkine, *The Jewish Century* (Princeton: Princeton University Press), 1994.

¹³ Yerushalmi, “Exile and Expulsion,” 12.

¹⁴ Ruderman, *Early Modern Jewry: a New Cultural History* (Princeton: Princeton University Press, 2011).

more firmly connected to the earth. Even agricultural products which circulated in order to facilitate Jewish ritual and bind distal communities, such as the *etrog* (citron fruit), were carefully cultivated in specific settings.¹⁵ Nowhere in the various medieval diasporas do we see this preoccupation with land more clearly than in Spain and Italy. Italy, as the most visible theater of Jewish medical achievement before Emancipation, furnishes our first examples of this phenomenon.

Medical Letters

As is well known, Jewish students were permitted to study in Italian medical faculties from the later Middle Ages on. By the sixteenth century they matriculated in increasing quantities. The University of Padua, perhaps Italy's most distinguished university in the early modern period, graduated a considerable number of Jewish doctors. David Ruderman and others have explored the works of some of Padua's most distinguished Jewish alumni, such as Joseph Del Medigo, Joseph Hamiz, Benjamin Mussafia and Tuvia Cohen. Here I'd like to draw from the work of a far lesser known Jewish doctor, one whose educational background is unclear. In the second decade of the sixteenth century, a young physician named Solomon, whose surname is unknown, left behind a series of letters, some of which were published by Yaakov Boksenboim, and others of which are found in Florence's Laurenziana Library. Undated, the letters' author was practicing medicine at this time in the small hamlets of Morlupo and Stimigliano, about thirty kilometers north of Rome. The collection of letters from which I quote dates from the first third of the sixteenth century.¹⁶ Solomon, a young physician, wrote several letters to his future father-in-law, and in other instances to his wife (or fiancée). The young man was likely in the employment of the Orsini family, as the Orsini were prominent landholders in the area and employed other Jewish doctors, too.¹⁷

¹⁵ Warren Klein, Sharon Liberman Mintz, and Joshua Teplitsky, eds., *Be Fruitful! The Etrog in Jewish Art, Culture, and History* (New York: Mineged Publishing House, 2022).

¹⁶ Yakov Boskenboim, *Iggrot yehudei italia [Letters of the Jews of Italy]* (Tel Aviv: Tel Aviv University Press,) 1994. Biblioteca Medicea Laurenziana (MS Pluteus 88.12).

¹⁷ For example in Pitigliano Niccolò IV Orsini employed David de Panis between 1550 and 1560. Solomon's employer was probably Franciotto Orsini (1473-1534), a cousin of Pope Leo X. Franciotto was educated by Lorenzo de' Medici, and after Orsini was widowed he was named protonotario apostolico, and in July of 1517 he became cardinal. For more on the Orsini family at this time and place, see Pompeo Litta, *Famiglie celebri italiane*, 11 vols. (Milan: presso l'autore, 1819–85), 9: tav. 113–18.

The first surviving epistle in this collection reveals Solomon's preoccupation with his surroundings, including the land itself. Early in the letter Solomon wishes to allay the anxiety of this missive's recipient regarding his physical comfort in his new post. "I have," Solomon writes, "in the best part of this land, an appointed home, cozy and comfortable, ideal for the physician: it has a bed and a table, a desk and a lamp. It possesses all else that I demand and require: bread and water, oil and wine— this is my portion from all of my labor."¹⁸ Lest the reader think Solomon was content with his lot, he's quick to note that although his home is "in the best part of this land," undoubtedly a rhetorical formulation,¹⁹ he's also at pains to emphasize the many challenges he confronts— including those of landscape: "for I am established upon a rock²⁰ as sound as the Temple Hall,²¹ a high and hilly place, in a dry and difficult land, dismal and desiccated." The safety and security of the location, compared to Jerusalem's ancient temple, stands in sharp distinction to the aridity of landscape. This is no mere traveler's gripe, as Solomon was quick to perceive the connection between an infertile landscape and hardships of life. "However, Sir," he explains, "in this place there is a great scarcity of food and the other necessities of man; all of these things are painstaking for those who seek them out, and expensive for those who find them. As for me I shall not secure these provisions unless I pay a king's ransom and a small fortune. In fact I must pay their cost in advance before I receive them!" Even those provisions are regrettable: essentials such as bread are indigestible: "furthermore, of fine pure bread there is none in this land, but only mean crusts, resembling dog biscuits. The bread is exceedingly difficult to chew, and causes constipation." Solomon is also highly aware of seasonal cycles, and in his explanation of his access to medicines and drugs, he notes that

"it is not the right season or time to practice this craft [of medicine], to engage in it and make a profit, since at this time the pharmacists are barely concerned with the doctor, and consider him scarcely at all, for this is their holiday. I have yet to receive any advantage from these pharmacists other than everyday things, but they have embraced me and I am

¹⁸ All quotations in this paragraph are from Boksenboim, *Letters of Italian Jews*, Correspondence Book 1, Letter 1, pages 55-56, with corrections and additions after consultation of the Laurenziana MS. For the expression "from all of my labor" cf. Ecclesiastes 2:10.

¹⁹ "*Metav ha-aretz*." See BT Bava Qama 7a, with reference to Exodus 22:4.

²⁰ Cf. Exodus 33:21 and 17:6.

²¹ Leviticus Rabbah s. 17.

quite dear to them. They tell me that if I were here in the summertime (which approaches us in peace!) they would give me provisions.”²²

A dry landscape led to many consequences: poor bread, an impoverished population, and unreliable access to medicine. Far from a mere atmospheric enhancement or detracting, landscape affected life.

Nowhere is this clearer than in another letter from this collection, where Solomon notes that “the land is busy with harvest.”²³ In fact he adduces this business as part of his excuse for not replying to his father more quickly: “since the travelers on the Roman road²⁴ have ceased, I looked for but didn’t find anybody on the road at this season, since it was the time of the wheat harvest. They’re all trying to gather the produce into their homes, for this applies to all mankind.”²⁵ He goes on to say that the people “are always prone to illness, since they plough their fields and harvest their crops and perform all of their labor near and around the river. This is very bad for them, and for their illnesses, so as to remove them from the world.” In Galenic theory stagnant water (just like garbage and waste matter) corresponded to air (among the 6 non-naturals): such insalubrious water was a problem mainly because it could corrupt the air around it, and this, in turn, could cause disease in those who lived or worked nearby.²⁶ A number of ancient Roman writers from the physician Paulus Aegineta to Vitruvius to Pliny the Elder urged doctors to be, in Aegineta’s words “skilled in the good and bad properties of waters.”²⁷ But Hippocrates’s influence on medical theory and practice at this time was undeniable, as *Airs, Waters, Places* stressed the various effects of waters on bodies as well as their influences on the cultures of people in different parts of the world.²⁸ Solomon’s letters also underscore the

²² In the Hebrew original the word is given in Italian (though in Hebrew characters): *provvisioni*. Tense relations between pharmacists and spice grinders is a large topic. In the sixteenth century Jean Fernel complained about pharmacists in his *Methodus medendi*. Many others did, too. For a modern study see Peter Dilg "Apotheker als Sammler," in Andrea Grote, ed. *Macrococosmos in Microcosmo: Die Welt in der Stube* (Opladen, 1994), 453-474.

²³ Boksenboim, *Letters of Italian Jews*, Correspondence Book 1, Letter 2, pages 56-57, with corrections and additions after consultation of the Laurenziana MS.

²⁴ The Via Appia, an important thoroughfare that connected Rome to Brindisi.

²⁵ Ecclesiastes 12:13

²⁶ On Galenic theory and its persistence in the later Middle Ages see Nancy G. Siraisi, *Medieval and Early Renaissance Medicine: An Introduction to Theory and Practice* (Chicago: The University of Chicago Press, 1990), 4-6 and 15-16.

²⁷ David Gentilcore, “From ‘Vilest Beverage’ to ‘Universal Medicine’: Drinking Water in Printed Regimens and Health Guides, 1450–1750.” *Social History of Medicine*, 33:3 (August 2020): 683–703: 684.

²⁸ The best starting place remains Pearl Kibre, *Hippocrates Latinus: Repertorium of Hippocratic writings in the Latin Middle Ages* (New York, 1985). For more on how Hippocratic ideas influenced European medicine especially after much of the Hippocratic corpus was translated into Latin in 1525, see Andrew Wear, “Place, health, and disease: The *Airs, waters, places* tradition in early modern England and North America.” *Journal of Medieval and Early Modern Studies* 38:3 (2008): 443–65. Although this Hippocratic treatise was not translated into Latin until

indignities of his position, among them that the residents of Stimigliano and Morlupo are cheap, and only consult him (or any medical practitioner) when they are on their deathbed, and doctors' cures are effectively useless. Beneath this layer of his complaints and professional challenges, we see the presence of land as occupying a key position not only in his personal experience of Morlupo and Stimigliano, but in his own health and that of his patients. These two letters serve as modest reminders that although premodern Jews may have pined for Jerusalem and the Judaean hills in their daily prayers, it was the landscapes of their own lives that demanded their attention and determined their existence. All the more so for a doctor in Italy, whose training and experience led him to consider links between landscape and health.²⁹

Landscape and Law

Connections between landscape and health were a clear concern for physicians of this period. The relationship between landscape and law was another factor Mediterranean Jewry considered in our period. A generation before Solomon ventured to small-town Lazio to begin his career as a physician, Joseph Colon (d. 1480), one of Renaissance Italy's most prolific rabbinic authors, also considered the formative influence of landscape. Colon, studied in depth by Jeffrey Wolff, left behind a large corpus of *responsa*.³⁰ One of these, his fifty-fifth, takes up the subject of what to do with a *mikveh*, or ritual bath, that is "corrupted" by "drawn water?" Jewish ritual baths, primarily used by Jewish women at the conclusion of their menstrual cycles,

Calvo's 1525 (*Hippocratis Coi medicorum omnium longe principis, octoginta volumnia, quibus maxima ex parte, annorum circiter duo millia Latina caruit lingua, Graeci vero, Arabes, et prisci nostri medici* Rome: Francesco Minizio Calvo, 1525), Solomon may have been able to read the text in the original Greek. On Greek education in medical curricula of Italian universities at this time, see Vivian Nutton, "Greek Science in the Sixteenth-Century Renaissance," in J. V. Field and Frank A. J. L. James, eds., *Renaissance and Revolution: Humanists, Scholars, Craftsmen, and Natural Philosophers in Early Modern Europe* (Cambridge: Cambridge University Press, 1993), 15–28 and Nutton, "John Caius and the Eton Galen: Medical Philology in the Renaissance," *Medezinhistorisches Journal* 20 (1985): 227–52.

²⁹ Vivian Nutton, "Hippocrates in the Renaissance," in Gerhard Baader and Rolf Winau, eds., *Die Hippokratischen Epidemien: Theorie-Praxis-Tradition : Verhandlungen des V^e Colloque international hippocratique* (Stuttgart: Sudhoffs Archiv, 1989): 420–39. Tessa Storey has convincingly argued that the popularization of Hippocratic ideas regarding climate in Italy led to a nuanced understanding of climate's effects on individual bodies. See her "English and Italian Health Advice: Protestant and Catholic Bodies," in Sandra Cavallo and Tessa Storey, eds., *Conserving Health in Early Modern Culture: Bodies and Environments in Italy and England* (Manchester: Manchester University Press, 2017): 210–34, 214–215.

³⁰ Jeffrey R. Woolf, "The Life and Responsa of Rabbi Joseph Colon Trabotto (Maharik)" PhD Dissertation, Harvard University, 1991; *ibid.*, "The authority of custom in the responsa of R. Joseph Colon (Maharik)" *Diné Israel: Studies in Halacha and Jewish Law* 19 (1997–1998) 43–73; *ibid.*, "Between Law and Society: Mahariq's Responsum on the 'Ways of the Gentiles' (*Huqqot ha-Akkum*)," *AJS Review*, 25 (2000–2001) 45–69.

were not supposed to contain any “drawn water” conveyed by human hands. In increased order of desirability, the following bodies of water served as *mikva'ot* (Heb. plural of singular *mikveh*): ponds, ponds during the rainy season, immersion pools, wells with natural groundwater, saltwater from the sea or saltwater springs, rivers or freshwater springs. Colon’s responsum notes that technically this ritual bath should be drained and refilled from naturally flowing water, but even a *mikveh* with leaks “still always had the status of a *mikveh*, and is not invalidated by the dripping of drawn water into it.” He notes that even though there are jurists who tend to be stringent on this matter there are “recent authorities . . . who agree that there is no reason to worry [about the validity of a *mikveh* where there is a spring]” and that “the law follows such [authorities]— even more so in times of emergency.”³¹ In other words, it may not be ideal to use a ritual bath with drawn water, but it is permissible.

Colon’s ultimate justification for this practice leans on environmental factors. When listing “recent authorities,” his examples include several jurists from fourteenth- and fifteenth-century Iberian settings, specifically in the kingdoms of Aragon and Castile. These include Solomon ibn Aderet (Rashba, 1235-1310), who lived and wrote in Barcelona, and Jacob ben Asher (Ba’al HaTurim, c. 1270-1340), of Toledo, author of the *Turim*, a key compendium of Jewish law. Invoking authorities such as Ibn Aderet and Jacob ben Asher reveals an implicit contrast to the other major centers of Jewish jurisprudence at this time: the Germanic lands, especially the Jewish communities that dotted the Rhine river. Ultramontane water management challenges were different than those faced by Italians: the communities on the Rhine saw more average rainfall, and fewer inundations, than those along the Po in northern Italy, where Colon lived most of his professional life.³² In other words, the relative paucity of rainwater in northern Italy, compared to the lush Rhine Valley may have been a factor in Colon taking a lenient legal position.

Biblical Commentary

Joseph Colon’s awareness of the difference in climate between the Germanic lands north of the Alps and the Italian setting he knew better evokes another illustrious fifteenth-century

³¹ This and the previous quotations from Joseph Colon, *She’elot u-Teshuvot* (Warsaw, 1884), responsum #55, p. 62.

³² For a basic introduction to Mediterranean water management issues, both historically and at present, see Piero Lionello, ed., *The Climate of the Mediterranean Region: From the Past to the Future* (Amsterdam: Elsevier, 2012).

Jewish thinker: Isaac Abravanel.³³ One of the best-known Jewish writers of this period, Abravanel served as a financier and political advisor to several European leaders, including most famously to Queen Isabella and King Ferdinand, monarchs of Castile and Aragon. In his voluminous biblical commentaries, Abravanel (d. 1508) also considered medical and environmental ideas when elucidating Scripture. For example, in his commentary on Numbers 13, which tells the tale of the “spies” whom Moses bid to spend forty days scouting Canaan, Abravanel argues that differences of climate accounted for the spies’ negative report. On the verse “thus they spread calumnies among the Israelites about the land they had scouted” (Num. 13:32) Abravanel comments:

The fact is that the four seasons were not properly observed, as is required for the preservation of health, and the air is injurious, and this was very powerful, for anyone who is transferred from one climate to another may become ill or die due to the changes of the temperament of [different] lands for every place is suitable for the temperament of those born in it.³⁴

Abravanel goes on to explain that a land having four distinct seasons presents challenges of physical adaptation to its own native inhabitants; how much the more so would it “wreak destruction upon strangers who come to it.” The question of how long it might take a person to acclimatize to a new setting makes Abravanel pause. Referring to the spies, the commentator writes “a person is sensible of the maleficent nature of the land only dwelling in it a brief time.” Augmenting the spies’ terse report, Abravanel imagines them reporting to Moses “the malignancy of this land is such that as long as we passed through it to espy it we saw and we knew that it was a land that devoured its inhabitants. If it destroys its inhabitants, consider what it would do to strangers that come to it from elsewhere!” Part of the spies’ fear, then, was concern regarding how they’d fare in a physical environment hostile to its inhabitants, let alone to travelers. Those inhabitants, as the book of Numbers made clear, were men “of great size (Num 13:32).” Well aware that the Hebrew phrase “*anshe middot*” could also mean “men of

³³ Most recently see the biography of Cedric Cohen-Skalli, Don Isaac Abravanel: *An Intellectual Biography*, trans. Avi Kallenbach (Waltham, MA: Brandeis University Press, 2021); for an exhaustive bibliography of scholarship on Abravanel, see Eric Lawee, “Isaac Abarbanel: From Medieval to Renaissance Jewish Biblical Scholarship,” in *Hebrew Bible/Old Testament: The History of Its Interpretation, Vol. 2: From the Renaissance to the Enlightenment*, ed. Magne Sæbø (Göttingen: Vandenhoeck & Ruprecht, 2008), 190–194.

³⁴ Isaac Abravanel, *Perush ‘al ha-Torah*, (Jerusalem, 1964 [1505]), Numbers 13:32.

moral fibre,” Abravanel imagined the spies’ calumny in an even more vivid, environmentally inflected way: the indigenous inhabitants “displayed good comportment in all their affairs and desires, but the nature of the place corrupted them.” Finally, the exegete considers that the spies may have seen many corpses: “it’s possible that they saw lots of dead people as our sages of blessed memory said.”³⁵ This may have had a seasonal explanation: “for they went to espy the land in the month of Tammuz (July-August), and many men die in that season due to the high fever that one finds in every place.” In other words, the climate of the Land of Israel may have been particularly noxious, especially to visitors. However, a summer trip would have brought out the worst features of the land. The commentator’s chief aim is to discredit and invalidate the calumnious report of the Israelite scouts. That he used climate theory in order to do so signals how powerful such an idea must have been to Abravanel’s readership in the hebraically literate world.

Abravanel wasn’t the only Iberian-Jewish exile to apply climate theory and medical ideas to his scriptural interpretation; his peer Isaac Caro did so as well. Caro, a preacher and writer in late fifteenth-century Castile, left behind a biblical commentary entitled *Toledot Yitzhaq* [Generations of Isaac, cf. Gen, 25:19].³⁶ In Caro’s remarks on the tale of the biblical matriarch Rebecca and her barrenness, he typologizes human illness into three categories, noting that:

“The reason that illnesses come upon man is one of three. First, hereditary disease, passed on from father to son, such as podagra [gout], as the natural philosophers have argued. Second, from a place or climate that has bad water or air, like Vera de Plasencia or Buitrago, which cause *zefek* in humans, which is difficulty breathing in the throat.³⁷ The third is social transmission, as when people are pressed closely together, such as *Mursa*, and other illnesses.”³⁸

Following this quotation Caro explains how the apparently excessive detail Scripture uses to introduce Rebecca (her provenance and ancestry) in truth outlines these three potential sources

³⁵ Abravanel may be referring to *Midrash Tanchuma, Masei* 4:1.

³⁶ On Caro, uncle of the famous author of early modernity’s most important code of Jewish law, the *Shulḥan ‘arukh*, see Eleazar Gutwirth, “Isaac Caro in His Time,” *Miscelánea de estudios árabes y hebraicos* 40 (1991): 119–130; *ibid.*, “La España de Isaac Caro,” in Carlos Carrete Parrondo, ed., *Actas IV Congreso internacional: Encuentro de las tres culturas* (Toledo: Ayuntamiento, 1988): 51–56.

³⁷ In rabbinic literature the word refers to the crop of an animal’s throat— an enlarged area adjacent to the esophagus. It is a sign that an animal is *tahor*, or permissible. Here Caro uses it to describe constriction in a human’s throat— perhaps laryngospasm or some other type of pharyngeal constriction.

³⁸ So far I have been unable to identify “*mursa*.”

for her barrenness. This passage was noted by Eliezer Gutwirth, whose primary interest in it was as evidence of “the dissemination of scientific ideas and texts among a general public.”³⁹ Among those scientific ideas was a strong connection between health and place.

A clear association between wellness and topography in Caro’s biblical exegesis points to another feature of his generation’s scholarship: a tendency to assimilate the landscape of their native Iberia to that of the biblical world. Sephardi tradition stressed that Castilian cities like Toledo were named by ancient Jewish exiles from Judea, and that cities’ names had Hebrew etymologies. For example, Toledo was thought to derive from the Hebrew *tiltul*, or “migration”.⁴⁰ Sometimes, as is the case with Abravanel’s work, these transpositions were more significant than wordplay, nostalgia, or even what Yerushalmi called “the Judaization of exile.”⁴¹ Identification of the Iberian cityscape with that of ancient Israel underscored climatic resemblances. Abravanel observed in his commentary on 2 Kings 25 that when the Roman emperor Titus brought the Jews to the Spanish kingdom by sea:

he had them settle in two regions: one is the region that is still today called Andalusia, in one city, which in those days was “a metropole in Israel” (2 Samuel 20:19), “princess among the provinces,” (Lamentations 1:1), and the Jews called it Lucena. Even today it’s still called this, and the gentile sages said of it that its atmosphere makes one wise, since its air is exceedingly clear and pure. Perhaps it was on account of this that the Jews called it Lucena, for it’s like Luz in the Land of Israel, designated for its prophecy.⁴²

In Abravanel’s exegetical imaginary Lucena’s resemblance to Luz was based on far more than verbal assonance; the Castilian city was geographically and climatically related to its supposed namesake in the biblical land of Israel. Additionally, this resemblance was more significant than that created by shared latitude or other geographical features; it had to do with the ability of the air to impart wisdom and even prophecy.⁴³ In the Hippocratic-Galenic tradition, cities were favorable or unfavorable places to live for many reasons beyond the allure of good weather. Individual humoral balances (or “complexions”) responded differently to different geographies.

³⁹ Gutwirth, “History, Language, and the Sciences in Medieval Spain,” 511-528: 526.

⁴⁰ See Yerushalmi, “Exile and Expulsion,” 14.

⁴¹ *Ibid.*, 14.

⁴² Quoted in Berns, *The Land is Mine*, 162 n. 119.

⁴³ For precedent in the Iberian-Jewish literary tradition see Bernard Septimus, *Hispano-Jewish Culture in Transition: The Career and Controversies of Ramah* (Cambridge, MA: Harvard University Press, 1982), 3.

And an ideal match promoted more than mere physical health; it could encourage moral perfection.⁴⁴

Concerns about the close connection between land and those who live on it come up repeatedly in Abravanel's work. One notable example is found in his commentary on Genesis, written in Venice during the waning years of the sage's life. In Genesis 12:2 God says to Abram "I will make of you a great nation." The verse presents an occasion for Abravanel to speculate on what else God might have told Abram, namely that "if leaving the land that is natural for you is difficult, 'I will bless those who bless you.' Do not feel pain for this land of yours whose people curse you because you are far from their faith." Though Abravanel's words purportedly reflect God's message to Abram, one modern scholar sees this passage as a "retroactive consolation" that Abravanel offered to his fellow exiles from Spain.⁴⁵ In the phrase "the land that is natural" most modern readers would understand "natural" as a mere adjective, perhaps placed there to accentuate the comforts associated with one's homeland. But for Abravanel and others of his generation "natural" was a term laden with considerable weight.

In essence, for Abravanel and his peers such as Isaac Arama and Abraham Saba, "natural" meant both that which concerns the physical world, as well as what is morally preferable.⁴⁶ Morally, the term functioned as an antonym to "unnatural" occupations and ways of life. Cities, for example, bred hedonism and materialism, and were thus "unnatural." Life in the countryside, breeding self-sufficiency and closer communion with God's creation, was thus deemed "natural." Historically, the "natural" pointed to a distant past age, where the problems associated with human civilization were yet unknown. Termed "primitivism" or "the myth of the golden age" by modern scholars, fifteenth- and sixteenth-century writers idealized descriptions by classical Roman writers such as Vergil, Ovid, and Seneca of an abundant, peaceful existence before technology, cities, and accumulation came to define human culture.⁴⁷ At its core, as the

⁴⁴ Glacken, *Traces on the Rhodian Shore*, 80-88.

⁴⁵ Yerhusalmi, "Exile and Expulsion," 17.

⁴⁶ See, for example, Klatzkin's Hebrew definition of the term *tiv'i* as "in contrast to the artificial, the spiritual, the miraculous, or the incidental, etc: that which pertains to nature." In German Klatzkin defines the term as "natürlich, vegetativ." Jacob Klatzkin, *Thesaurus philosophicus linguae hebraicae et veteris et recentioris* (Leipzig: ex officina Augusti Pries, 1928), 232 s.v. *tiv'i*.

⁴⁷ Berns, *The Land is Mine*, chapter two. See also Andrew Wear's remarks concerning this issue in early modern England, where he argues that by the sixteenth century it was already a long-standing trope that the countryside was more salubrious than the city. Andrew Wear, *Knowledge and Practice in English Medicine, 1550-1680* (Cambridge: Cambridge University Press, 2000): 155-209. As cited in Lori Jones's forthcoming work "Early Modern Renewal of John Mirfield's Fourteenth-Century *Gouernayl* of Helpe in Wellcome Collection MS 674," forthcoming. Sincere

main use of the term in medieval texts makes clear, its most common definition, and use, concern the physical world— especially the suitability of the geographic settings in which human beings and other living things exist.⁴⁸ In sum, Abravanel’s deployment of the adjective “natural” had far greater significance to a Renaissance reader than to a modern one. It combined moral and historical preferences with scientific theories about the ideal correspondences between certain places and those living there.

Kabbalah and Agriculture

Premodern Jews of this time had many ways of relating to, and commenting on, the physical world. We have examined evidence from the epistolary record of an Italian-Jewish physician, and several passages from Iberian-Jewish biblical exegesis informed by medical and climatological learning. Kabbalah was another avenue to understanding the natural world. The Italian-Jewish writer Yoḥanan Alemanno, nearly an exact contemporary to Abravanel, emphasized the land in a discussion of agriculture’s occult significance. A medical doctor, Alemanno combined kabbalistic insight with medical erudition. For him, agriculture was a human endeavor to be understood kabbalistically, and regarding which ancient wisdom preserved ideal, practical teachings. On the first subject— mysticism— Alemanno’s remarks concern a series of Jewish texts that see agriculture and farming this way. The second subject points to a Renaissance preoccupation with the recovery of classical antiquity— albeit one usually associated with politics, sciences, and the liberal arts rather than a subject as seemingly humble as agriculture.⁴⁹

Yoḥanan Alemanno was born in north-central Italy in 1434 or 1435. After receiving a traditional Jewish education, Alemanno began to travel at a young age. We have evidence that he was in Florence for the first time in 1455, a city which he praised as a perfect model of moral

thanks to Dr. Jones for sharing her work with me in advance of publication. See also Harry Levin, *The Myth of the Golden Age in the Renaissance Literature* (London: Faber and Faber, 1970).

⁴⁸ See the University of Hamburg’s project Peshat: Philosophic and Scientific Hebrew Terminology, "פֶּשֶׁט", PESHAT in Context - A Thesaurus of Pre-Modern Philosophic and Scientific Hebrew Terminology, ed. Reimund Leicht/Giuseppe Veltri, accessed Sun Jul 07 18:02:43 CEST 2024, https://peshat.org/display/peshat_lemmas_00001996.

⁴⁹ To date very little work attends to agricultural concerns in the context of Renaissance humanism. Edward Chappell’s dissertation, “Fatto in Toscana: Wine, Knowledge, and Place in Early Modern Tuscany,” recently defended at the University of Pennsylvania, sheds new light on these connections, particularly in terms of viticulture. Warm thanks to Dr. Chappell for sharing his unpublished work with me.

and political virtue.⁵⁰ In 1463 Alemanno moved to Padua, where he married and fathered a child. After a brief sojourn in Verona, he relocated to Mantua in 1470, where Judah Messer Leon conferred upon him the title “Doctor artium et liberalium et medicinae.” We have little evidence of his whereabouts or activities between 1470 and 1488, when Florentine documents attest to his presence there. In 1488 he also met Giovanni Pico della Mirandola, with whom he maintained a rapport until Pico’s death.⁵¹ Alemanno remained in Florence until 1494, when he returned to Mantua, and lived in the Po Valley until his death in 1503/4.⁵² His most important works include *Heshek Shelomo*, a philosophical commentary on the *Song of Songs*. *Heshek Shelomo* contains an introduction entitled *Shir ha-Ma'alot li-Shelomo*, a composition that glorifies King Solomon as the ideal philosopher, Kabbalist and magician. He also wrote *‘Eine ha-‘Edah*, an unfinished philosophical-kabbalistic commentary on the Pentateuch, which was never published in print. His *Liqqutim* (“Gleanings”) contain various notes and reflections, and were composed between 1478 and 1504. Finally, thanks to the pioneering efforts of Fabrizio Lelli, the treatise *He ha-Olamim* is perhaps Alemanno’s best-known work: a composition detailing how man may attain eternal life and rise to communion with God.⁵³

Alemanno’s observations concerning agriculture as an occult science are scattered throughout several of his writings. Agricultural learning was part of Alemanno’s study program. Alemanno’s recommended course of study includes the mention of “a Christian book *On Agriculture*, authored by Piero de’ Crescenzi.” This is de’ Crescenzi’s *ruralia commoda libri*.⁵⁴ We will return to this work, but first we must understand what agriculture meant for Alemanno. In one passage from *Sha’ar ha-Hesheq* the Mantuan scholar declares that agriculture is magic:

“the ancients . . . knew the nature of existing things [*nimza’ot*], the relations among them, how they are linked with one another, and by what means the Kabbalists could prepare to receive the influence of the superior bodies. This was proven to them as a result of [their] wisdom and experience, just as to the cultivators of the land [*‘ovde ha-‘adamah*] the preparations of the plants and the seeds and the soils are obvious, so that they will receive the propitious influx that is flowering there. And as this is strange to anyone who has not

⁵⁰ *He ha-‘olamim*, 49v-54v, es. 54r-55v. See Lelli, *L’immortale*, 5 n. 10.

⁵¹ Alemanno dedicated *Heshek Shelomo*, his commentary to the *Song of Songs*, to Pico.

⁵² This biographical sketch draws from Lelli, *L’immortale*, 5-11.

⁵³ Fabrizio Lelli, ed. and trans., *Hay Ha-‘Olamim (L’immortale). Parte I: la Retorica* (Florence: Leo S. Olschki Editore, 1995).

⁵⁴ Moshe Idel, “The Study Program of R. Yohannan Alemanno,” (Hebrew) *Tarbiz* 48:3 (1979): 303-331: 312.

seen the method of sowing and plowing and planting and grafting that [successfully] begets things by these means, it would be strange in our eyes if we did not see the light of the preparations, and how the divine light and His mercy are generated in us in these ways from the preparation of the forces and *sefirot* to receive and emanate. And if you have studied or subscribed to the preparations of the masters of the forms and secondary natures and the contrivances [*tahbulot*] of nature, your spirit will not be confused by anything I have told you, because it is holy.”⁵⁵

Moshe Idel, the only scholar I am aware of to have commented on this passage, notes that Alemanno understood agriculture as “a preparation that enables the land to absorb divine influx [*shef'a ha'elyon*].”⁵⁶ Indeed, Alemanno belonged to a tradition that saw agriculture as magical partly because it was an art based on experience and action— rational thought was not alone sufficient to make the earth yield produce. Fundamentally magic and agriculture are related because in both disciplines superior bodies are in communication with lower, terrestrial objects, especially when the latter are appropriately receptive.

One reason why a fifteenth-century Jewish doctor would have devoted such attention to agriculture was because of King Solomon’s well-attested skill in that endeavor. With regard to the perfection of Solomon’s knowledge of this art, Alemanno writes in his *Sha'ar ha-Hesheq*: this is proven from his statement ‘I planted vineyards [Eccl. 2:4]’ and ‘I laid out gardens and groves, in which I planted every kind of fruit tree’ [Eccl 2:5]. And the sages of blessed memory said ‘how did he plant them?’ Solomon was wise, and knew the foundation of the world . . . He knew the grains of the earth, which grain would become a reed [i.e. hollow], and he’d plant pepper upon it: [this is what is meant by] ‘every kind of fruit tree.’ This was great wisdom, from the days of old.⁵⁷

The paradigmatic example of occult expertise with regard to agriculture was king Solomon.

Early modern Hebrew sources that celebrate agriculture as an occult science often refer back to the figure of King Solomon as the ideal natural magician. As we saw above, Alemanno bases his proof of Solomon’s magical prowess on Ecclesiastes 2:5: “I laid out gardens and groves, in which I planted every kind of fruit tree.” As Idel has observed, the equation between

⁵⁵ Alemanno, *Sha'ar ha-Hesheq*, (Halberstadt, 1860): 40v.

⁵⁶ Idel, “The Study Program,” 326.

⁵⁷ Alemanno, *Sha'ar hesheq*, 3v.

King Solomon and magic by means of agricultural innovation is attested in midrashic sources, chiefly *Kohelet Rabbah* 2:7.⁵⁸ “‘I planted every kind of fruit tree’ [Eccl 2:5], including peppers. Solomon would make use of the winds and send [seeds] to India, and they would bring him water from there and he would irrigate here and make fruit.” Other biblical commentaries on this verse expatiate upon Solomon’s special skill. Hayyim Joseph David Azulai, in his *Homat ‘anakh* (“A Wall Made by a Plumb-Line” cf. Amos 7:7), remarks that this verse “‘indicates the wisdom of Solomon, who planted each and every tree in its suitable place, since he was wise in the nature of all existing things, and he knew the nature of stone quarries and fountains and mud pits, and the appropriate appearance for every plant and tree.’”⁵⁹ Azulai’s gloss was not, he admitted, original: he took it from “‘Rabbi Abraham Farissol of blessed memory, in his manuscript commentary.” Indeed Azulai copied verbatim from Farissol’s commentary on *Ecclesiastes*. Just before the passage Azulai took up, Farissol emphasized the medical applicability of Solomon’s wisdom concerning plants, and wrote that Solomon’s purpose in “‘making these delights” was medical: to “‘eliminate black bile through eating the good fruit in its seasons.’”⁶⁰ Fifteenth-century Italian-Jewish writings, even those that were never published in print, had afterlives, and inspired much better-known eighteenth-century figures like Azulai.

Abravanel, a contemporary of Farissol and Alemanno, also had much to say regarding Solomon’s famed knowledge of the natural world. In his commentary on I Kings 5:13 Abravanel noted that the magician king

spoke of trees, from the cedar that is in Lebanon even unto the hyssop that springeth out of the wall [I Kings 4:33]. This is to inform you that he not only attained the wisdom to know the differences among species, but even the minute distinctions within a species that exist on account of differences in places. He knew the difference between the cedar of Lebanon and the other cedars and the cypress that grows from a wall and the other cypresses. Similarly he attained [knowledge of] living creatures according to their forms,

⁵⁸ Idel, “Study Program,” 325.

⁵⁹ Azulai, *Sefer homat ‘anakh*, part I, *biurim ve-hiddushim* (Jerusalem, Yahadut, 1986): 85v. On Azulai see Yaacob Dweck, “A Jew from the East meets Books from the West,” in Richard I. Cohen et al., eds., *Jewish Culture in Early Modern Europe: Essays in Honor of David B. Ruderman* (Cincinnati: Hebrew Union College Press, 2014), 239-49. Most recently see Oded Cohen, *Sovev holekh ha-ruah: merhavim tarbutiyim be-‘olamo shel ha-Ḥida* (Jerusalem: Magnes Press, 2023).

⁶⁰ Biblioteca Palatina, Parma, Cod. Parm. 3484, 5v.

even the creeping thing, which is an incomplete animal. His knowledge encompassed all species, both those in existence and those ceasing to exist.⁶¹

The idea that ancient biblical sages were renowned for their encyclopedic knowledge is not particular to Abravanel—or any premodern exegete. An obsession with Solomon's wisdom is known to be a feature of Jewish writings in this period.⁶² Still, Abravanel's precise identification of Solomon's micro-geographical knowledge, “even the minute distinctions within a species that exist on account of differences in places,” signals the fascination of this generation in the connection between geography, nature, and knowledge.⁶³

Encyclopedias and the Land

Abravanel's intellectual descendents living in the Ottoman Empire further developed this curiosity regarding the presumed genesis of botanical and agricultural wisdom in ancient Judaism. Yehuda Ibn Bulat's *Kelal katzar* provides an example. Ibn Bulat was born in or around 1475 in Estella, Navarre. His family was among the many exiled Jews who left Spain in 1492. He wrote various legal opinions, some of which survive in the collected *responsa* of Elijah Mizrahi and Tam ibn Yahya, as well as a prospectus for a future Jewish encyclopedia which he never finished.⁶⁴ Towards the end of that composition he presents nine new areas of study—topics he had not yet had the chance to include in his work. He called these “plantings” [*neti 'ot*]—a choice of terminology that reveals the centrality of natural imagery to his thought.⁶⁵ Agriculture is the sixth of these nine plantings.⁶⁶ Ibn Bulat writes:

the sixth study is that of masters of agriculture. It is also like medicine, very important, and a branch of natural philosophy. Its application is considerable, and [it has] secrets in matters of agricultural labor: planting, plucking, and many other things. Therefore the

⁶¹ Abravanel, *Perush ha-nevi'im* (Jerusalem: Horev, 2009) 7 vols., 3: 104.

⁶² Abraham Melamed, *The Philosopher King in Medieval and Renaissance Jewish Thought* (Albany: State University of New York Press, 2003).

⁶³ Anthony Grafton and Nancy Siraisi, eds., *Natural Particulars: Nature and the Disciplines in Renaissance Europe* (Cambridge, MA: MIT Press, 2000).

⁶⁴ Yehuda ibn Bulat, *Kelal katzar*, published in *Azkarah le nishmat Avraham Yitzhak ha-Cohen Kuk. Kovetz torani mada'i*. (Jerusalem, 1936). [Originally Constantinople, 1543.] For more on Ibn Bulat see M. Rabinowitz's introduction to the 1937 Jerusalem edition of *Kelal katzar*.

⁶⁵ *Kelal katzar* 42 et seq. These “plantings” are mentioned in Abraham Melamed, “The Hebrew Encyclopedias of the Renaissance,” 445.

⁶⁶ *Kelal katzar* 43.

farmer who recognizes all this, and also the shepherd who recognizes good pasture and fodder— each of them for different animals— they are great sages in the study of nature. But in these times only a portion of these deeds are preserved as custom, and the reasons have disappeared and many of their deeds have been forgotten.⁶⁷

Several things are noteworthy about this passage. The inclusion of agriculture as a branch of natural philosophy alongside medicine is novel in the later Middle Ages and Renaissance, and reflects the elevated status of agriculture as the subject of learned study in the sixteenth century.⁶⁸ The claim that agriculture involves secrets reveals its nature as an esoteric discipline.⁶⁹ More importantly perhaps, Ibn Bulat's identification of farmers and shepherds as "sages in the study of nature" signals the Ottoman scholar's importation of practical expertise into the lofty sphere of intellectual achievement. Ibn Bulat's prioritization of "craftsmen and workers", with farmers heading the list, signals how he viewed those who work the land as truly essential. Finally, the declensionist argument— that much of this rarefied knowledge has been lost— presents a perceived rupture between Ibn Bulat's sixteenth-century world and the ancient and medieval past it inherited. This is somewhat surprising, as sixteenth century Ottoman scholars, especially those in the major population centers of Constantinople, Edirne, and Salonica, believed they were living in a flourishing intellectual and spiritual environment.⁷⁰

Ibn Bulat's emphasis on the importance of empirical knowledge preserved by laborers and craftspeople appears elsewhere in *Kelal Ketzar*. Earlier in his prospectus, Ibn Bulat divides human occupations into three categories: craftsmen and workers; traders and businessmen; judges and magistrates.⁷¹ Craftsmen and workers are given pride of place: "we will explicate these *seriatim*, and first we shall address craftsmen and trades, for life depends on them."⁷² Ibn Bulat provides twelve further sub-categories of these workers and their trades, and the very first of these is agricultural laborers: "those who are involved in the provision of food from farm to

⁶⁷ Ibid., 43.

⁶⁸ Anthony Grafton, "Libraries and Lecture Halls," in Katharine Park and Lorraine Daston, eds., *The Cambridge History of Science Volume Three: Early Modern Science* (Cambridge, 2006): 238-50: 243.

⁶⁹ William Eamon, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton, N.J.: Princeton University Press, 1994). See in particular Eamon's discussion of Cardano's *de secretis*, where agriculture is listed alongside medicine. Eamon, *Science and the Secrets of Nature*, 279.

⁷⁰ Joseph Hacker, "The Intellectual Activity of the Jews of the Ottoman Empire During the Sixteenth and Seventeenth Centuries," in Isadore Twersky and Bernard Septimus, eds., *Jewish Thought in the Seventeenth Century* (Cambridge, MA, 1987): 95-135.

⁷¹ Ibn Bulat, *Kelal katzar*, 34.

⁷² Ibid. For the last phrase, see BT *Bava Batra* 91a, and Maimonides, *Mishneh Torah*, *hilchot mechirah* 14:4.

table: agricultural workers, farmers, vintners, gardeners, guards, shepherds, fowl hunters, fishermen and other workers who make produce available by tithing it, and they prepare the things they bring, making them fit for human consumption as food and drink.”⁷³ Ibn Bulat’s treatment of the topic does not feature a discussion of agriculture’s occult dimensions; still, his emphasis on the centrality of agricultural labor reminds us that it was taken seriously by this encyclopedist.

Sixty years after the publication of Ibn Bulat’s *kelal ketzar*, the Italian-Jewish physician Abraham Portaleone also wrote about agricultural workers, and their unique knowledge. Portaleone, born in 1542, studied medicine at the University of Pavia. A practicing physician who served the Gonzaga family, Mantua’s most powerful rulers, Portaleone wrote extensively on medicine and science: he published a Latin dialogue on the medicinal properties of gold, and completed a collection of medical *consilia*, many of which were written to Italy’s leading medical minds of the late sixteenth and early seventeenth century.⁷⁴ Portaleone is best known, however, for his Hebrew work *Shilte HaGibborim*: an erudite encyclopedia of the world of the Second Temple.⁷⁵ The seventy-third chapter of this work concerns the provision of grain for the Temple’s various meal-offerings [see Lev. 2:1 et seq]. Following traditions in the mishnaic tractate *menahot*, Portaleone emphasizes that grain admitted for Temple sacrifices may not come from fertilized or irrigated fields, nor from orchards. The Mantuan physician explains the drawbacks to all of these crop-raising techniques: the stench of manure in the case of fertilization with animal excrement; the potential weakness of wheat grown in irrigated plots; and the likelihood that fruit trees consume too much nutrient from the soil in orchards, depriving grains of their necessary sustenance.⁷⁶ Portaleone provides a lengthy analysis of Mishnah *Menahot* 8:2, in which he explains how the Jewish sages grew grain: “these are the statutes which our holy sages set before us, to grow and propagate choice wheat with liberality, and to store and guard it,

⁷³ Ibn Bulat, *Kelal ketzar*, 33.

⁷⁴ Abraham Portaleone, *De auro dialoghi tres* (Venice: apud Iohannem Baptistam à Porta, 1584); *Abrahami Portaleonis medici mantuani hebrei responsorum et consultationum medicinalium liber*, Paris, Bibliothèque nationale, Ms. Latin 13004.

⁷⁵ The best introduction to this work is *Die Heldenschilde. Vom Hebräischen ins Deutsche übersetzt und kommentiert von Gianfranco Miletto*, 2 vols. (Frankfurt: Peter Lang, 2002), 1:21–75. According to its title page, the book was printed “by his [Portaleone’s] commission and in his house.” For more, see Miletto, *Glauben und Wissen im Zeitalter der Reformation: der salomonische Tempel bei Abraham ben David Portaleone (1542–1612)* (Berlin: de Gruyter, 2004), 15 and notes there. Recently David Garber and Yo’el Katan published an edition of *Shilte HaGibborim* with some explanatory notes (Jerusalem, 2009). See also Miletto, *La biblioteca di Avraham ben David Portaleone secondo l’inventario della sua eredità* (Florence: Olschki, 2013).

⁷⁶ *Shilte HaGibborim* (Mantua, 1612), 75v–76r.

‘so that it not become infested with maggots and stink.’⁷⁷ For additional insight into farming practices during the rabbinic period Portaleone turns to Roman agricultural treatises composed by Columella, Palladio, and Varro.⁷⁸

These gentile sages, Portaleone explains, “added other conditions,” including when to harvest wheat (after it’s properly dried), and where to store it (in granaries far from other crops that might spoil the grain).⁷⁹ He suggests it’s best to store grain in storehouses with open windows, for air and winds can grievously damage wheat, “except for the western wind, which is called *Zephyrus* in Greek and *Favonio* in Latin.” This particular wind, Portaleone adds, “is good for wheat, according to the opinion of Columella.”⁸⁰ Portaleone also notes that a wise farmer will consult lunar cycles when determining the best time to harvest: “it is appropriate to harvest wheat between the full moon and its waning gibbous phase.”⁸¹ *Shilte HaGibborim* is replete with passages where Portaleone supplements rabbinic learning with classical and early modern discoveries.⁸² That he was able to do that depended in large measure on his facility with Latin and Greek—two languages he cultivated as a medical student at the University of Pavia. Portaleone’s work provides evidence that in the early modern period medical training enabled a fresh examination of Jewish tradition.

Portaleone’s work may be understood as the culmination of a process that had been in train since the fifteenth century. Compared to his Renaissance predecessors Alemanno, Farrisol, and Abravanel, Portaleone’s erudition was much greater, and the level of detail he brought to subjects like grain, viticulture, and olive cultivation signals the geocentrism of his intellectual

⁷⁷ *Shilte HaGibborim*, 76r. See Exodus 16:20.

⁷⁸ Columella’s *De re rustica* (ca. 60ce), was the primary ancient authority on agriculture in the early modern period, and was frequently reprinted up until the eighteenth century. See Virginia Brown, “Lucius Junius Moderatus Columella,” in *Catalogus translationum et commentariorum*, ed. F. Edward Cranz and Paul Oskar Kristeller (Washington DC: Catholic University of America Press, 1976), 177. Palladius’s *Opus Agriculturae* (ca. late fourth century to mid fifth century), borrowed heavily from Columella. Varro’s *De re rustica* (116-27 BCE), according to a recent student of early modern reception of these authors, acknowledged the role of environmental determinism in agricultural matters. See Edward Chappell, “Fatto in Toscana: Wine, Knowledge, and Place in Early Modern Tuscany,” PhD Dissertation, University of Pennsylvania, 2024, 38. Portaleone owned a compendium volume in his personal library that contained treatises by Columella, Cato, and Palladius: *Libri de re rustica M. Catonis lib. I, M. Terentii Varronis lib. III, L. Iunii Moderati Columellae lib. XII, Palladii lib. XIII* (Venetiis, In aedibus Aldi et Andreae soceri, 1514). See Gianfranco Miletto, *La biblioteca di Avraham ben David Portaleone secondo l’inventario della sua eredità*. (Florence: L. S. Olschki, 2013), 69.

⁷⁹ On the connections between Jewish and Greco-Roman agricultural practices in Palestine of the Second Temple Period see Tsvi Novick, “Like an Expert Sharecropper”: Agricultural Halakhah and Agricultural Science in Rabbinic Palestine” *AJS Review*, 38: 2 (November 2014): 303-320.

⁸⁰ *Shilte HaGibborim*, 76r.

⁸¹ *Ibid.*, 76r.

⁸² Miletto, *Glauben und Wissen*.

project.⁸³ Like most if not all physicians of this period, a feature of Portaleone's medical practice hinged on the influence of physical landscape on health.⁸⁴ It wasn't only doctors in this period who were environmentally attuned; other writers who produced texts as diverse as biblical commentary, letters, and rabbinic responsa were eco-oriented, and well aware of the importance of specific places and their particular attributes on human health and culture. From the fifteenth to the seventeenth century, as is well-known, the printing press, the mobility of texts and human beings, overseas exploration, and the inclusion of new fields of knowledge into the patrimony of European culture widened the purvey of scholarly investigation and deepened historical approaches to antiquity.⁸⁵

Such insights have been known to professional historians for a generation or more. What isn't as commonly acknowledged is that the forces of early modernity, often considered to be centrifugal, both intellectually and demographically, could also function centripetally to help scholars, Jewish or otherwise, return to earth. Much of Jewish diasporic life between the destruction of the temple in the first century CE and the rise of modern Zionism in the nineteenth century can be understood as an attempt to create a religion and a culture that is transportable and not dependent on place. Physicians were a unique group who did actually care about place, and needed to know a lot about the physical environment in which their patients lived and in which they wrote. Examining works by physicians writing about non-medical topics alongside texts produced by those lacking medical training, but plainly influenced by medical ideas, refines our knowledge about the sway medical ideas had—and continue to have—over many other areas of thought and life.

⁸³ See chapters 73-77 in *Shilte HaGibborim*.

⁸⁴ See, for example, Portaleone's remarks about the curative properties of certain waters in "Copia di una sua che serviù l'Eccellentissimo Signor Padre all' Massimo et Eccellentissimo Signor Praecipie di Bozzolo, dove afferma che li Bagni di l' Casciano non convengono a quelli che patiscono di Podagra" in *Abrahami Portaleonis medici mantuani hebrei responsorum et consultationum medicinalium liber*, (Paris, Bibliothèque nationale, Ms. Latin 13004), 600r-601v. This was an enormous subject in Portaleone's lifetime. See the well-known work of Andrea Bacci, with whom Portaleone corresponded: *De thermis andreae baccii elpidiani medici, atque philosophi, civis romani libri septem* (Venice: apud Vincentium Valgrisium, 1571).

⁸⁵ Anthony Grafton, *New Worlds, Ancient Texts: The Power of Tradition and the Shock of Discovery* (Cambridge, MA: Belknap Press of Harvard University Press, 1992).