Bethany J. Walker / Abdelkader Al Ghouz (eds.)

History and Society during the Mamluk Period (1250–1517)

Studies of the Annemarie Schimmel Institute for Advanced Study III

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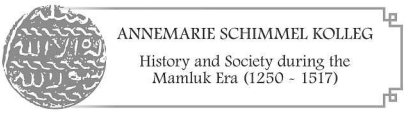

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Cover image: Road cleared through basalt scatter in eastern Badiyya, Jordan (courtesy: Prof Peter Akkermans, University of Leiden, Jebel Qurma Project). Pilgrims, merchants, Bedouin, and hungry peasants frequently travelled this route, which connected Egypt with Syria and towns with the countryside, in the waning years of the Mamluk Sultanate. Knowledge and goods, as well, flowed along this remote artery of transport. This final volume of the ASK Working Papers is dedicated to these themes of transmission, migration, change, and renewal.

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Aleksandar Shopov

Grafting in Sixteenth-Century Mamluk and Ottoman Agriculture and Literature

Introduction: the value of grafting

Grafting entails joining the tissues of a new stock, or scion, with the rootstock from an established tree, so that the new aerial part of the tree is replaced with the desired scion. In the sixteenth-century Mamluk and Ottoman regions, grafting was used to create varieties of trees that produced fruits with a desirable taste, shape, color, or texture. An interest in grafting was shared among multiple social groups and was connected to the growing economic importance of commercial agriculture. This article will show that grafting in the sixteenth century was extrapolated from the corpus of written agricultural knowledge, and took on a life of its own in various literary genres. During this period, as Muslim urban elites increasingly invested in orchards, the agricultural techniques practiced there acquired cultural value themselves. Late fifteenth and sixteenth-century narrative sources show a rising emphasis on firsthand observation and experience as a means of attaining knowledge about the world of plants while, at the same time, books on farming became geographically specific, addressing regional agricultural concerns and plants.[1] Mamluk and Ottoman narrative sources from this period also reflect the transfer of seeds, saplings, and trees across great distances, something that is also confirmed in archival documents. Grafting, which allowed trees to be transported and take root in new spaces, to be hybridized and innovated, was emblematic of the growing mobility of plants during this period. Grafting represents a particularly intimate form of human intervention in nature and its reproductive processes and, as such, can reveal conceptions of nature and society, which were then in flux.[2]

1 Aleksandar Shopov, "The Vernacularization of Sixteenth-Century Ottoman Agricultural Science in its Economic Context." In *Living with Nature and Things: Contribution to a New Social History of the Middle Islamic Periods*, edited by Bethany J. Walker and Abdelkader al Ghouz (Bonn: Bonn University Press, 2020): 637–681.

2 For recent explorations of grafting in medieval and early modern Europe, see Vin Nardizzi and Miriam Jacobson, "The Secrets of Grafting in Wroth's *Urania*," in *Ecofeminist Approaches to*

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The first work I will discuss is the last-known Mamluk treatise on farming, *Jāmiʿ Farāʾid al-Malāḥa fī Jawāmiʿ Fawāʾid al-Filāḥa* (Complete Rules for Elegance in all the Uses of Farming).[3] Written in Cairo in 1510–11 by the Damascene Muslim scholar Raḍī al-Dīn al-Ghazzī (d.1529), this soon became the classical text on farming for scholars in Ottoman Damascus. The second part of this article looks at the discussions on grafting in the earliest-known Ottoman Turkish treatise on farming, the *Revnaḳ-ı Būstān*, written by an unknown Muslim author in mid-sixteenth century Edirne.[4] Though grafting is discussed in earlier Arabic manuscripts on farming (*filāḥa*), both of these manuscripts, and the narrative and archival sources discussed here parallel to these two works, treat the subject with novel material, regional, and technical specificity. Raḍī al-Dīn al-Ghazzī, for example, provides illustrations of the grafting techniques and highlights the chapter in which he discusses them in his introduction. The discussions of grafting in the *Revnaḳ-ı Būstān*, on the other hand, emphasize the anonymous author's practical experience and firsthand knowledge of grafting techniques. The *Revnaḳ-ı Būstān* was also the earliest attempt to systematize and describe knowledge about grafting in Ottoman Turkish. Furthermore, this article will explore other archival and literary sources related to the mobility of plants and the place of grafting in the broader social context in which it acquired cultural value.

In multiple regions within and beyond the Mamluk and Ottoman realms, grafting was a fulcrum for environmental change and shifting trade patterns. In Mughal India, grafting, through which fruits such as cherries and apricots spread widely in the sixteenth century, carried such prestige that it was restricted to imperial gardeners, until this restriction was lifted during the rule of Shāh Jihān (r.1628–1658), allowing the technique to be practiced by both "the select and the

Early Modernity, ed. Jennifer Munroe and Rebecca Laroche (New York: Palgrave Macmillan, 2011), 175–94; Leah Knight, *Reading Green in Early Modern England* (Farnham: Ashgate, 2014), 81–108; and Jessica Rosenberg, "The Point of the Couplet: Shakespeare's *Sonnets* and Tusser's *A Hundreth Good Pointes of Husbandrie*," *ELH* 83.1 (2016): 1–41. Paolo Savoia, "Nature or Artifice? Grafting in Early Modern Surgery and Agronomy," *Journal of the History of Medicine and Allied Sciences, 72*(1), (2017): 67–86; Liz Herbert Mcavoy, Patricia Skinner and Theresa Tyers, "Strange Fruits: Grafting, Foreigners, and the Garden Imaginary in Northern France and Germany, 1250–1350," *Speculum, 94* (2), (2019): 467–495. Vin Nardizzi, "Shakespeare's Penknife: Grafting and Seedless Generation in the Procreation Sonnets," *Renaissance and Reformation / Renaissance et Réforme*, Vol. 32, No. 1 (Winter, 2009), pp. 83–106. Rebecca Weld Bushnell, *Green Desire: Imagining Early Modern English Gardens* (Ithaca: Cornell University Press. 2003).

3 No critical edition of this work has yet been published. The most extensive discussion of it can be found in Sami K. Hamarneh, "Medicinal plants, Therapy and Ecology in Al-Ghazzī's Book on Agriculture," *Studies in the History of Medicine* 2 (1978): 223–263.

4 For a critical edition of this work which provides a transliteration, but not a translation, see Zafer Önler, ed. *Revnak-ı Bustan* (Ankara: Turk Dil Kurumu, 2000).

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masses."[5] In the long run, the introduction of new varieties of fruit trees through grafting often entailed new forms of water usage, fertilizing, and other farming practices, and therefore could have an impact on regional enviornments. In China, grafting was inextricably linked to the production of silk. After the Mongol conquest of China and the transfer of the capital to Khanbalik (present-day Beijing) in 1267, there was a surge in the writing of specialized treatises on grafting, something that was then novel in Chinese agricultural literature. Georges Métailié has related this to Qubilay Khan's attempts to stimulate the production of silk in southern China, in which particular varieties of mulberry trees played an important role.[6] Grafting, thus, was used in the creation of areas where mulberry trees dominated the landscape previously inhabited by other kinds of plant life. Such developments were not limited to Asia. In England, grafting was connected to apple-growing and the cider industry; the English horticulturalist John Worlidge (1640–1700), whose writings Joan Thirsk has interpreted as appealing to the "interest of all classes in producing special crops," discusses grafting in his treatise on "cider and other wines extracted from fruits growing in this kingdom."[7]

This article thus forms part of a much broader discussion about the environmental and economic dimensions of agricultural knowledge. This exploration of the mobility of plants, and the technical knowledge it required, within the sixteenth-century Mamluk and Ottoman lands also challenges a historiography that has tended to focus exclusively on the global diffusion of plants that followed the conquest of Americas. Finally, the study of grafting also has implications for the study of the Ottoman conquest of Mamluk Syria and Egypt. Ottoman officials and scholars arriving in Cairo, Damascus and elsewhere after 1517 brought with them a worldview that was similar in certain ways to that of their counterparts in the newly-conquered lands, at least in terms of their shared interest in agricultural knowledge, and grafting in particular.

5 Irfan Habib, *The Agrarian System of Mughal India*, 1556–1707 (Bombay:Asia Publishing House, 1963, 56.

6 Georges Métailié, "Grafting as an Agricultural and Cultural Practice in Ancient China," in *Botanical progress, horticultural innovation and cultural change*, edited by Michel Conan and W. John Kress, Washington, D.C.: Published by Dumbarton Oaks Research Library and Collection (Cambridge, MA: Harvard University Press, 2007), 152.

7 On Worlidge's writings, see Joan Thirsk, "Plough and Pen: Agricultural Writers in the Seventeenth Century," in *Social Relations* and *Ideas: Essays* in *Honour of R. H. Hilton,* T.H. Ashton, P.R.Coss, C. Dyer and J.Thirsk, eds. (Cambridge and New York: Cambridge University Press, 1983), 317. The work of Francis Drope (d.1671) was also part of this trend; see Francis Drope, *A short and sure guid in the practice of raising and ordering of fruit-trees* (Oxford: Printed for Ric. Davis, 1672).

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Grafting in the last-known Mamluk treatise on farming

An interest in grafting peaked in Mamluk society in the decades directly before the Ottoman conquest of Syria and Egypt. An important source for this is the treatise on farming *Jāmiʿ Farāʾid al-Malāḥa fī Jawāmiʿ Fawāʾid al-Filāḥa*, written by Raḍī al-Dīn al-Ghazzī, a renowned Damascene scholar and judge.[8] According to a colophon in the copy of the work now held in the National Library in Cairo, his text on farming, which has still not been critically edited or translated, was completed in Cairo in 1510–11.[9] The colophon corresponds to information that Ghazzī's grandson, Najm al-Dīn, provides in his biographical dictionary of prominent sixteenth-century Muslim scholars. He notes that his father, Badr al-Dīn al-Ghazzī (d.1577), had stayed in Cairo for five years and returned to Damascus in 1515–6 together with his grandfather Raḍī al-Dīn.[10] Indeed, as Sami K. Hamarneh has noted, Raḍī al-Dīn was a highly mobile scholar, whose travels took him through locations in Syria, Palestine, Egypt, and Hijaz.[11] Moreover, there are indications that the copy now held in Cairo was his own working copy: corrections in red ink, profuse throughout, are already incorporated into the copy currently held in the British Library, which, according to a marginal note, was copied by "Ilyās, Jebrāʾil, and Fransīs, sons of Niqolā from Homs (*Ḥimṣī*)."[12] Al-Ghazzī, offers his readers his own personal observations on the agricultural countryside of Damascus in his book on farming. For example, after quoting a canonical Arabic treatise – the Nabataean Agriculture (*Al-Filāḥa al-Nabaṭīya*),

8 The Ghazzī family hailed from Ghazza in Palestine, a memory of their homeland preserved in the name Ghazzī. The family's scholarly reputation is traced back to Raḍī al-Dīn, a Sufi mystic and a poet who was entrusted to the most prominent Shafi scholar in Damascus, Shaykh Zayn al-Din Khattab, b. Umar al-Ghazzāwī – hence the name "al-Shāfiʿī" in the colophone of the Cairo copy owned by the author himself. Ghazzī studied jurisprudence, prosody, logic, rethorics, philology, syntaxm and other sciences under a number of prominent scholars of his time. In addition to his work on agriculture, he also wrote on various subjects such as jurisprudence, logic, sufism, medicine, and astronomy. See Najm al-Dīn Muhammad ibn Muhammad Ghazzī, *al-Kawākib al-Sāʾirah bi-Aʿyān al-Miʾah al-ʿa Āshirah*, vol. 2, edited by Jabrāʾīl Sulaymān Jabbūr (Bayrūt: al-Matbaʿah al-Amīrkānīyah, 1979), 5.

9 Dār al-Kutub (Cairo), Zirāʿa Taymūr, no. 42, f.1.

10 Raḍī al-Dīn must have been present through most of this five-year stay in Cairo, as the young Badr al-Dīn was only twelve years old when he arrived in the Mamluk capital. See Ghazzī, *Kawākib*, 3:4.

11 For a discussion of the content of this work that does not however date it, see Sami K. Hamarneh, "Medicinal plants, Therapy and Ecology in Al-Ghazzī's Book on Agriculture," *Studies in the History of Medicine* 2 (1978); 223–263.

12 An example is a marginal note in the Cairo copy which specifies that the information on the benefits of using hyena skin to treat worms on fruit trees came from "ṣāḥib al-filāḥa," i. e. Ibn Waḥshīya. In the British Library copy, this information is incorporated. See Dār al-Kutub, Cairo, ms. Zirāʿa Taymūr no. 42, f. 183a; British Library, London, ms. Or. 5751, f. 87b. British Library, London, ms. Or. 5751, f. 102b; The marginal note indicating that the British library manuscript was copied by Ilyās, Jebrāʾil, and Fransīs is on f. 102b.

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written in the tenth century by Abū Bakr Aḥmad Ibn Waḥshīya who claimed that it was a translation from ancient Syriac – on the similarity between apricots and peaches, al-Ghazzī notes that, contrary to the belief that peach trees have a short life span, he had personally "observed" (*bi-l-mushāhada*) in Ghūṭa, in the Damascene countryside, peach varieties with a lifespan of longer than 25 and 30 years.[13] Al-Ghazzī names these long-living peach varieties, such as *al-lawzī* and *al-ghatmī*, as well as the shorter-lived varieties, such as the damascene *hawajakī*.[14]

His introduction highlights the work's fourth chapter, on the various methods of grafting and the suitability of different kinds of trees for being planted side-by-side, calling it "the best and most wondrous of all the chapters."[15] This praise is repeated at the beginning of the fourth chapter itself,[16] which comprises four sections (*faṣl*), the first of which is devoted to the different types of grafting (*tarkīb*).[17] Al-Ghazzī lists five types of grafting, describing the first one in the following manner:

> And this is when the scion is added in the [tree's] bark. And it is called grafting with cleft (*tarkīb al-shaqq*). [It is done] if the bark is thick and when there is a lot of moisture between the bark and the rootstock. And this is a kind [of grafting used] a lot on the olive tree. Its description: cut the tree with a saw to take a dry scion, make the scion in the shape of a reed-pen. The scion is then slowly placed between the bark of the rootstock at night. And when this happens the water enters the rootstock and the bark splits. And this makes the bark split the from the rootstock. […] And maybe the bark will split afterwards, then the dry rootstock is taken out and the scion is placed in the empty space. The area should be closed quickly. And white soil is placed and [this soil] is mixed with hay and we immobilize the place with this […] And the big scions are cut from one side and this is the shape of it [the author provides a schematic depiction of the scion].[18]

We should note the extremely vivid, specific language used to describe the process of inserting the scion into the rootstock, which the author adds should be done "slowly" and "at night." At least three of the extant copies of this work, one now in the National Library in Cairo, another in the British Library, and a third in al-Zahiriya Library in Damascus, also contain illustrations of the shapes of the scion and the stalk, the grafting branches, and the base – the only illustrations found in the entire work.[19] Clearly, it was important to al-Ghazzī's readers to get this particular technique right.

13 British Library, London, ms. Or. 5751, f. 22b.
14 British Library, London, ms. Or. 5751, f. 22b.
15 British Library, London, Or. 5751, f. 37b.
16 British Library, London, ms. Or. 5751, f. 37b; Dār al-Kutub, Cairo, ms. Zirāʿah Taymūr no. 42, ff. 142–145.
17 British Library, London, ms. Or. 5751, ff. 37b–57a.
18 British Library, London, ms. Or. 5751, ff. 37b–38a; Dār al-Kutub, Cairo, ms. Zirāʿa Taymūr, no. 42, ff. 138–139; al-Zahiriya Library, Damascus, 8407 ʿāmm, f. 38.
19 British Library, London, ms. Or. 5751, ff. 17b and 76a. Illustrations of grafting are found in a twelfth-century Andalusian work on farming, the *Book of Agriculture* by Ibn al-ʿAwwām,

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Such detailed textual and visual explanations of grafting would have been useful during a time when plants were increasingly being moved between various regions in the Mamluk realm. In his history *Badā'i' al-Zuhūr fī Waqā'i' al-Duhūr* (Beautiful Flowers about the Events of the Times), the Mamluk historian Ibn Iyās (d.1524) states that various fruiting and flowering trees were transported in 1506–7 from northern Syria to Cairo, with their roots earthed in wooden boxes (*ṣanādīq khasheb*), to be planted in the Maydān beneath the citadel.[20] The trees were apples, pears, quinces, cherries, and grapevines, then considered a type of tree; there were also lilies and other "Syrian flowers" (*al-āzhār al-shāmiyya*). The arrival in Cairo of al-Ghazzī, a Syrian scholar on agriculture, was thus accompanied by the importing of actual plants. Elsewhere, Ibn Iyās praises the sultan Qānṣūh al-Ghūrī for reinvigorating the production of balsam (*belisān*) oil, a valuable commodity, by organizing a transfer of balsam trees from Ḥijāz to Maṭarīya, several kilometers north of Cairo. During a period when trade in the Red Sea was being blocked by the Portuguese navy, the reinvigoration of agricultural production and trade in agricultural products – including by transporting valuable trees between regions in the Mamluk Sultanate – became a theme in Mamluk literature.

Archival evidence supports Ibn Iyās's claim that the sultan oversaw a reinvigoration of agricultural production around Cairo. The 1505 endowment deed of Sultan Qānṣūh al-Ghūrī's (r. 1501–1516) charitable foundation lists numerous agricultural spaces around the city: an orchard with fragrant plants and fruit trees, including date palms and grapevines, outside the gate of Shi'riyya; a bath in Būlāq with a garden of pomegranates, a waterwheel, and a storage room; an orchard outside the Gate of Zuwaylah with palm trees, a jasmine garden, a large house with two waterwheels, a barn, and a storage space; buildings and gardens outside the gates of Shiʿriyya and Qaws, near the lake of Raṭlī, with palms, olives, pomegranates, lemons, grapevines, and roses, as well as two waterwheels and a storage space; a plot of land near the Lake of Qarrūsh; land on the islands in the Nile, such as Dhahab and Shābūnī; and more.[21] Also recorded in the deed are three plots of land in the present-day Cairo suburb of Maṭarīya, ten kilometers north of the city, where the balsam trees from Ḥijāz were planted. The establishment of Ghūrī's charitable foundation was part of an economic restructuring

which al-Ghazzī quotes at least twice, on grafting pear trees and in the section on thyme; Yaḥyā ibn Muḥammad Ibn al-'Awwām, *Libro de Agricultura*, vol.1, translated from the Spanish and annotated by J.A. Banqueri (Madrid: Imprenta Real, 1802), 453–457.

20 Ibn Iyās, *Badā'i' al-zuhūr fī Waqā'i' al-Duhūr*, vol. 4, edited by Muḥammad Muṣṭafá, (al-Qāhirah: al-Hay'ah al-Miṣrīyah al-'Āmmah lil-Kitāb, 1982), 102.

21 For a list of agricultural properties that entered the charitable foundation of Qānṣūh al-Ghūrī, see Khalid Hamzah, *Late Mamluk Patronage: Qansuh Al-Ghuri's Waqfs and His Foundations in Cairo* (Boca Raton, FL: Universal Publishers, 2009), 86–93.

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that took place in response to the Mamluk fiscal troubles in the second half of the fifteenth century; surplus from the foundation fed the inner treasury of sultanic *fisc*.[22] Thus, the agricultural lands around Cairo were part of the functioning of the Mamluk Sultanate in the last decades before it seized to exist. Specialized agricultural techniques such as grafting – the chapter on which al-Ghazzī describes as "the best and most wondrous of all the chapters" in his book – were, during the time the author resided in Cairo, important for maintaining the current political order. Throughout Egypt, powerful figures were making investments in agriculture. For example, al-Ghazzī's detailed explanations of sugar processing[23] would have been of interest to the Mamluk amir Khāyrbak al-Ḥadīd al-Āshrāfī, who in 1472 had purchased land in Fayyum and also rented large areas of *waqf* land in Fayyum.[24] Once the land was brought under his control, Khāyrbak al-Ḥadīd al-Āshrāfī planted fruit trees there and constructed a sugarcane press, storehouses, and other facilities.[25] This case has been discussed by Igarashi Daisuke, who argues that leasing became an important device in maintaining Mamluk control over rural areas during a time marked by the "decline of the iqtāʿ system" of assigning land as military fiefs, in which access to agricultural land was primarily limited to military men.[26] The increase in *waqf* land and its leasing opened the way for members of other social groups, such as high-ranking officials, merchants, and scholars, to become involved in managing land.[27]

We also find references to the mobility of plants in late Mamluk histories. In his history of Aleppo, *al-Durr al-Muntaḫab fī tārīḫ Mamlakat Ḥalab* (Selected Pearls from the History Of Aleppo), Ibn al-Shiḥna (d.1485) includes a chapter "on the matters that concern Aleppo that exist only in the city and not in other places," in which he records several cases of produce and seeds grown in and around Aleppo being traded across Syria and Egypt.[28] Green pistachios from

22 On the increasing importance of the inner treasury in the Mamluk Sultanate in the fifteenth century, see Carl F. Petry, "Fractionalized Estates in a Centralized Regime: the Holdings of Al-Ashraf Qaytbay and Qansuh al-Ghawri According to Their Waqf Deeds." *Journal of the Economic and Social History of the Orient* 40, no. 1 (1998): 96–117; and Igarashi Daisuke, "The Evolution of the Sultanic Fisc and al-Dhakhirah during the Circassian Mamluk Period," *Mamluk Studies Review* vol. 14 (2010), 85–108. Scholars have shown that revenues from the sultanic charitable endowments were much larger than were needed to provide support for the foundations. See Carl F. Petry, *Protectors or Praetorians?: the Last Mamlūk Sultans and Egypt's Waning as a Great Power* (Albany: State University of New York Press, 1994), 198–200.

23 For a partial English translation of this section, see Hamarneh, "Medicinal Plants, Therapy and Ecology," 252.

24 Daisuke Igarashi, *Land Tenure and Mamluk Waqfs* (Berlin: EB-Verlag, 2014), 39.

25 Igarashi, 39.

26 Igarashi, 39.

27 Igarashi, 33–41.

28 Ibn al-Shiḥna, *al- Durr al-Muntaḫab fī tārīḫ Mamlakat Ḥalab*, edited by Abdullah Muhammed al-Darwish (Damascus: Dār al-Kitāb al-ʿArabī: ʿĀlam al-Turāth, 1984), 250–253.

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Aleppo were sent to Damascus and Egypt, and figs from the city were purchased by the Mamluk sultan Ashraf Bārsbay (r.1422–1438) together with camels for a large amount of silver.[29] Ibn Shiḥna describes regular shipments of seeds of a green melon grown in the Shush region near Aleppo being sent to Gaza.[30] This melon, grown only in Aleppo, was known for its sweetness and its very thin rind. According to Ibn al-Shiḥna, the melon planted in Gaza from these Aleppan seeds was sweet, yet if it was replanted the following year without the original Aleppan seeds, the quality would decline. Ibn Shiḥna also goes into detail about the diffusion of the Samarqandī melon, which he describes as sweet, but not as sweet as the melon from Aleppo. Again, he provides information about the plant's mobility, providing a short history of attempts to spread it:

> The seeds of the Samarqandī [melon] were planted in some of the villages of Damascus. The fruit was so nice and sweet but most of it was ruined. Afterwards, the seeds were sent to Cairo and they planted them and as a result there is a melon that is so sweet but in this melon there is too much water and it is soft. And another variety of melon is the *bābānī* melon. The best witness for that is Saʿd al-Dīn who is the poet of Damascus and who sang when he came to Aleppo:
> The melon of Aleppo is not like the one in Jalik [referring to Damascus]
> Damascus has nothing but forgery and deception.[31]

For Ibn al-Shiḥna, the mobility of plants was a process of trial and error that required specialized knowledge. Once seeds were transplanted in new regions, their attributes, such as sweetness and water content, could change; thus Shiḥna understands plants not as static, but as mobile and mutable. Seeds were moving across Syria and Egypt to be transplanted near urban centers, where there was a growing market for special varieties of fruit. In Cairo, where Shiḥna describes an attempt to transplant the Samarqandī melon, a fruit-seller was arrested in 1470 and accused of not conforming to set prices but rather ones set by popular demand.[32] Melons and other kinds of fruit were not only food; they were also highly sought-after medicine. In the fifteenth century, melons, quinces, pomegranates and pears had already become valued as medicine against the plague and other diseases.[33] The pulp of a quince was, according to Ibn Iyās in 1405–6, the most sought-after medicine in Egypt against the illnesses that struck that year.[34]

29 Ibn al-Shiḥna, 252.
30 Ibn al-Shiḥna, 252.
31 Ibn al-Shiḥna, 253.
32 Carl Petry sees this example as reflecting a decline in commercial activity in late fifteenth-century Mamluk Cairo and the establishment of ad hoc tariffs. See Petry, *Protectors or Praetorians?*, 161.
33 Paulina B. Lewicka, *Food and Foodways of Medieval Cairenes: Aspects of Life in And Islamic Metropolis of the Eastern Mediterranean* (Leiden: Brill, 2011), 266.
34 Lewicka, 266, ft.659.

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At the turn of the sixteenth century, books on agriculture were as mobile as seeds themselves. An ownership note in the British Library copy of al-Ghazzī's treatise reads, "from the books of the poor Aḥmad b. Muḥammed b. Ḥasan al-Sāmsūnī, who seeks refuge in God," probably a reference to a son of the prominent Ottoman scholar Muḥyiddīn Muḥammed b. Ḥasan Sāmsūnī, who died in 1513–4.[35] Thus, al-Ghazzī's treatise on agriculture seems to have been quickly acquired by Ottoman scholars. During the first decade of the sixteenth century, the archives also record seeds being transported from Mamluk to Ottoman lands. In 1503–4, the Mamluk envoy Emīr Azbak traveled with various merchants to the Ottoman court in Istanbul to deliver "four prize horses for Ibn ʿUthmān, with bales of seeds of Egyptian clover (*bersīm*) for the horses' fodder."[36] This is the first recorded instance of such a diplomatic exchange including a gift of seeds. It is thus striking that al-Ghazzī's treatise includes an entry on Egyptian clover, which it describes as a fodder plant for animals such as horses, and specifies that it should be planted every year.[37] Fodder would have been an important supply during a time when the Ottoman army was moving, along with its horses, across long distances in Anatolia and the Balkans, and engaging the Hungarian and Mamluk armies. New military technology put even more pressure on this mobility. The newly-cast large cannons, like the one used in the conquest of Istanbul, were, as the late Byzantine historian Doukas reports, transported in no fewer than thirty wagons hauled by sixty enormous oxen.[38] The Ottoman military's appropriation of the cannon, which seems to have involved a transfer of knowledge from central European cannon founders, should also be studied in terms of what other forms of local knowledge it required, including about animals and the plants that fed them.

35 The well-known biographical dictionary of the Ottoman historian Taşköprülüzade (d. 1561), *al-Shaqāʾiq al-Nuʿmānīyah fī ʿUlamāʾ al-Dawlat al-ʿUthmānīyah*, has two entries under the name "Sāmsūnī." The first is for Ḥasan b. ʿAbdulṣṣamed Sāmsūnī, a prominent scholar in the time of Meḥmed II. The second is for Muḥyiddīn Muḥammed b. Ḥasan Sāmsūnī, a scholar who taught at a number of important schools in Bursa, Edirne and Istanbul and was assigned as judge of Edirne during the short rule of Sultan Selīm I (r.1512–1520), who died in 1513–4 (919); he was likely the father of the person who wrote the ownership note. See Aḥmad b. Muṣṭafa Ṭāshkubrīʾzādah, *al-Shaqāʾiq al-Nuʿmānīyah fī ʿUlamāʾ al-Dawlat al-ʿUthmānīyah* (Istānbūl: Jāmiʿat Istānbūl, Kullīyat al-Ādāb, Markaz al-Dirāsāt al-Sharqīyah, 1985), 157–159, 295–296.

36 Elias I. Muhanna, "The Sultan's New Clothes: Ottoman–Mamluk Gift Exchange in the Fifteenth Century," *Muqarnas: An Annual on the Visual Culture of the Islamic World* 27 (2010): 195.

37 British Library, London, ms. Or. 5751, f. 61a.

38 Doukas, Decline and Fall of Byzantium to the Ottoman Turks, an annotated translation of "Historia Turco-Byzantina" by Harry J. Magoulias. (Detroit: Wayne State University Press, 1975), 207.

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The involvement of Damascene scholars in agricultural production

In 1515, when al-Ghazzī returned to his native Damascus, a Damascene contemporary of his with an interest in the practical aspects of farming, Shihāb al-Dīn Aḥmad b. Ṭawq, had just passed away. Ibn Ṭawq was a court clerk (*shāhid*) with a close relationship to the Shāfiʿī judge and *Shaykh al-islām* Qāḍī ʿAjlūn.[39] He is also reported to have written an appendix for a collection of legal opinions.[40] His house was located near the Qasab mosque, in a residential neighborhood not far from one of the city gates, Bāb al-Salām.[41] Ibn Ṭawq wrote a first-person account of his life in Damascus that records events from 1480 to the early 1500s.[42] In these pages, a very down-to-earth kind of narrative emerges, showing a man consistently engaged with practical concerns. Ṭawq meditates on his financial well-being, records food prices, complains about the high price of meat, and discusses the frequent repairs undertaken to his house. He was involved in a venture with a business partner to whom he owed money,[43] and members of his household rented out an endowed property, a silk shop.[44] He also discusses leasing land in the village of Berza with shaykh Zeyn al-Dīn, where they planted wheat.[45] And he tended a small orchard near his house, produce from which he sold, and where he grew cauliflowers, pomegranates, almonds, and roses, raised plenty of chickens.[46] In addition to his frequent travels in the countryside, Ibn Ṭawq was also able to observe agricultural techniques in his orchard, where he employed peasants as hired laborers.[47]

The Damascus of Ibn Ṭawq and Raḍī al-Dīn al-Ghazzī was a city in which scholars and members of the urban bureaucracy had a vested interest in agriculture. Ibn Ṭawq often describes gatherings (*majālis*) with other members of the learned class (*ʿulamā*) in their homes, and in orchards in and around the city.[48] As they belonged to the same *Shāfiʿī* legal school, al-Ghazzī and Ṭawq may well

39 Stephan Conermann and Tilman Seidensticker, "Some Remarks on Ibn Ṭawq's (d. 915/1509) Journal Al-Taʿlīq, vol. 1 (885/1480 to 890/1485)," *Mamluk Studies Review* 11/2 (2007): 122.

40 Torsten Wollina, "A View from Within: Ibn Tawq's Personal Topography," *Bulletin de Études Orientales* 61 (2012): 277.

41 Wollina, 272.

42 Aḥmad ibn Muḥammad Ibn Ṭawq, *al-Taʿlīq: Yawmīyāt Shihāb al-Dīn Aḥmad ibn Ṭawq 834–915 H/1430–1509 M: Mudhakkirāt Kutibat bi-Dimashq fī Awākhir al-ʿAhd al-Mamlūkī 885–908 H/1480–1502 M*, edited by Jaʿfar al-Muhājir (Dimashq: al-Maʿhad al-Faransī lil-Dirāsāt al-ʿArabīyah bi-Dimashq, 2000).

43 Wollina, "A View from Within," 273.

44 Wollina, "A View from Within," 286.

45 Ibn Ṭawq, *Taʿlīq*, 1:158.

46 Ibn Ṭawq, *al-Taʿlīq*, 1:9–10.

47 Torsten Wollina, "What is a City? Perception of Architectural and Social Order in 15th-Century Damascus", Annemarie Schimmel Kolleg Paper 04, Bonn, 2012, 8.

48 Wollina, "A View from Within," 288.

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have conversed in such meetings. Another contemporary, al-Farfūr, who converted to the *Ḥanafī* legal school to preserve his position after the Ottoman conquest of Syria in 1516, was involved in even larger agricultural land management projects.[49] The Damascene learned class's interest in agriculture is also reflected in the work of another of Ibn Ṭawq's contemporaries, al-Badrī (d.1489), whose *Nuzhat al-Anām fī Maḥāsin al-Shām* (The Picnic of Human Kind in the Beauties of Damascus) describes the delights of Damascus. Al-Badrī lists the different varieties of plants grown around Damascus and throughout Syria, making reference to Ibn Waḥshīya, the author of the Nabataean Agriculture, with the term *ṣāḥib al-filāḥa*.[50] Other authors he cites – such as Dīsḳūrīdūs, Ibn al-Bayṭār, and Jālīnūs – were those frequently mentioned in books on agriculture written in Arabic between the ninth and the fourteenth centuries.[51] He devotes a passage to the beauties of Ghūṭa, the agricultural district surrounding and feeding Damascus.[52] Ghazzī hailed from a city in which farming was not an abstract intellectual interest, but rather was connected to real spaces of great economic and social importance.

There has been no academic study of Mamluk scholarly discourse on farming, yet such a discourse certainly seems to have existed. An ownership note on the title page of the fourth volume of the Nabataean Agriculture now housed in the Vatican Library appears to be that of Muḥammad Taqiyy al-Dīn al-Maqrīzī (d. 1442). Al-Maqrīzī, whose magisterial *al-Mawāʿiẓ wa-l-iʿtibār fī dhikr al-khiṭaṭ wa-l- āthār* (Exhortations and Contemplations of the Recollection of Plans and Monuments) includes a chapter on the Coptic agricultural calendar and the various types of soil in Egypt.[53] Another case showing the interest in farming among Mamluk scholars is that of al-Maqrīzī's contemporary Ibn Khaldūn, the North African scholar who settled in Cairo at the end of his life. In his discussion of the science of farming in his *Muqaddima* (Prolegomena), Ibn Khaldūn remarks that, unlike the many recent works written on the subject, the ancients' study of agriculture was more "general" and, in addition to topics such as planting and cultivation, included the more abstract properties of plants, such as their relationship with the planets and stars.[54] Ibn Khaldūn also describes Yaḥyā

49 Farfūr was accused of destroying a number of small public bridges and appending additional land to his orchard in the district of Iqlīm al-Tuffāḥ, in Lebanon. See Muhammad ʻAdnān Bakhīt, *The Ottoman Province of Damascus in the Sixteenth Century* (Beirut: Librairie du Liban, 1982), 127.

50 ʻAbd Allāh ibn Muḥammad Badrī, *Nuzhat al-Anām fī Maḥāsin al-Shām*, edited by Ibrāhīm Ṣāliḥ (Dimashq: Dār al-Bashā'ir, 2006), 288.

51 Badrī, 286, 296 and 300.

52 Badrī, 309–10.

53 Vatican Library, Rome, ms. Arabi, no. 904, f. 1.

54 Ibn Khaldūn, *The Muqaddimah: An Introduction to History*, vol. 3, translated from the Arabic by Franz Rosenthal (Princeton, N.J.: Princeton University Press, 1967), 151–152.

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ibn Muḥammad Ibn al-ʿAwwām's *Kitāb al-Filāḥa* (Book of Agriculture) as an abbreviation of the Nabataean Agriculture that, unlike Ibn Waḥshīya's work, was free of references to magic. With these comments, Ibn Khaldūn recognizes an emergent discourse on farming distinct from the older Arabic literature.

Al-Ghazzī's treatise contains further novelties, particularly in its illustrations of grafting techniques, which are not seen in earlier treatises on farming produced and written in Mamluk Egypt and Syria. In this, al-Ghazzī seems to have incorporated an Andalusian innovation; illustrations of grafting are also found in the voluminous *Kitāb al-Filāḥa* (Book of Agriculture) by the Andalusian author Abū Zakariyā Yaḥyā ibn Muḥammad ibn al-ʿAwwām (d.1185), whose eighth chapter is dedicated to the subject.[55] Other earlier Mamluk treatises discuss grafting without illustrating it. An example is the *Al-Filāḥa al-Muntakhaba* (Selected Agriculture) probably authored in the fourteenth century by a certain Ṭaybaghā al-Jariglamishī al-Tamān Tamrī.[56] Tamrī's text even mentions grafting in its subtitle. On the title page of the copy now preserved in the National Library in Cairo, the title is written in large letters: "Book of selected farming in regards to improving soil and seeds," followed by, in smaller letters: "planting and managing trees, curing their diseases, averting perils from them, and mentioning the benefits and harms that lie in them for human beings, grafting trees (*tarkīb al-shajar*), eating fruits and improving them and other useful and special things, and mentioning the times and the four seasons."[57] Tamrī's work drew heavily from the Nabataean Agriculture, whose author, as Jaakko Hämeen-Anttila has noted, also showed "a strong interest in cross-breeding and grafting."[58] However, Ghazzī seems to have been the first to integrate an Andalusian innovation of illustrating grafting techniques; and he did so in a work with regionally specific relevance to the agricultural concerns of his contemporaries in Syria and Egypt.

55 Yaḥyā ibn Muḥammad Ibn al-ʻAwwām, *Libro de Agricultura*, vol.1, translated from the Spanish and annotated by J.A. Banqueri (Madrid: Imprenta Real, 1802), 453–457.

56 Dār al-Kutub, Cairo, ms. Zirāʿa no. 219. On the title page the following parts of the title are written in large letters: "Book of selected farming in regards to improving soil and seeds," following by (in smaller letters): "planting and managing trees, curing their diseases, averting perils from them, and mentioning the benefits and harms that lie in them for human beings, grafting trees, eating fruits and improving them and other useful and special things, and mentioning the times and the four seasons." See Dār al-Kutub, Cairo, ms. Zirāʿa no. 219, f. 1. On the copies in Bibliotèque Nationale, see Attié, "Les Manuscrits," "Les Manuscrits Agricoles Arabes de la Bibliothèque Nationale de Paris," *Hespéri-Tamuda* 10, no. 3 (1969), 249–250.

57 See Dār al-Kutub, Cairo, ms. Zirāʿa no. 219, f. 1. On the copies in Bibliotèque Nationale, see Attié, "Les Manuscrits," 249–250.

58 Jaakko Hämeen-Anttila, "Artificial man and spontaneous generation in Ibn Waḥshiyya's al-Filāḥa an-Nabaṭiyya," *Zeitschrift der Deutschen Morgenländischen Gesellschaft*, 153(1) 2003: 39.

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Al-Ghazzī's authorship of a treatise on farming was first reported by Najm al-Dīn, his grandson, in the entry on his grandfather in the aforementioned biographical dictionary *al-Kawākib al-Sā'ira bi-A'yān al-Mi'a al-Āshira* (Wandering Stars among the Notables of the 10th century) (1624). Najm al-Dīn's reference to his grandfather's text reflected the growing importance of this work among his contemporaries in Damascus. Already in the 1535 Ottoman tax survey of the province of Damascus, a significant portion of the agricultural land in the neighboring district of Ghūṭa is recorded as being "in the hands" (*der yed*) of people who lived in Damascus or Ṣāliḥiyya.[59] Damascene court records dating to the early 1580s, a decade after Najm al-Dīn's birth, show that members of the local military and scholarly classes were leasing *waqf* land around the city.[60] Shaykhs, the core of the learned class, also leased agricultural land on a large scale, a practice that, as Abdul Karim Rafeq has argued, emerged as they were gaining appointments as administrators and supervisors of *waqf* land.[61] This investment of urbanites in agricultural production around Damascus has not been connected in the scholarship to the scholarly interest in agriculture that emerged among prominent Damascene scholars in the Ottoman period. However, the manuscript of Ghazzī's work now held in the British Library shows traces of early readers from Damascus. On the flyleaf is an ownership note of Muḥammad b. Aḥmad Ḥamzāwī (d. 1567), a Damascene judge.[62] Another ownership note at the end of the manuscript reads: "Afterwards the book enters the possession of Muḥammed bin Aḥmad, son of the author, may God forgive him, in the year of 958 [1551] in the protected abode of Istanbul."[63] Muḥammad b. Aḥmad ibn Yūsuf b. Abī Bakr b. Muḥammad b. ʿUmar al-Zubeyrī, also known as Kemāl al-Dīn al-Ḥamzāwī, was not actually the son of Raḍī al-Dīn Al-Ghazzī. Rather, al-Ḥamzāwī used the word *wālad* in another ownership note on the title page instead of the usual *bin* in order

59 Ahmet Özkılınç, *401 Numaralı Şam Livâsı Mufassal Tahrîr Defteri 942 / 1535* (Ankara: Başbakanlık Devlet Arşivleri Genel Müdürlüğü, 2011), 168.

60 This was contemporaneous with the arrival of large numbers of uprooted peasants who settled in Damascus. According to Abdul Karim Rafeq, some of them joined Yahya al-Karaki, a scholar executed by the Ottoman authorities after being accused of disturbing the public peace (he was regarded as *zindiq*-apostate); see Abdul Karim Rafeq, "The Syrian 'Ulama, Ottoman Law, and Islamic Shari'a," *Turcica* 26 (1994): 27.

61 Abdul Karim Rafeq, "Aspects of Land Tenure in Syria in the Early 1580s," in *Actes du VIe congrès du CIÉPO tenu à Cambridge sur les provinces arabes à l'époque ottomane,* edited by Abdeljelil Temini, Zaghouan, Tunisia: *Centre d'études* et de *recherches ottomanes et morisco-andalouses*, 1987, 158–159.

62 For a biographical entry on Ḥamzāwī by a contemporary, Ibn Ayyūb, see *Al-Rawḍ al-ʾĀṭir fīmā Tayassiru min Aḫbār Ahl al-Qarn al-Sābiʾ ilā ḫitām al-Qarn al-ʾĀshir,* Staatsbibliothek Berlin, ms. Ahlwardt 9886, ff. 255a–255b; and Ghazzī, *Kawākib,* vol. 3, 43–44.

63 British Library, London, ms. Or. 5751, f. 102b.

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to indicate intellectual parenthood.[64] al-Ḥamzāwī was the student of Raḍī al-Dīn's son, Badr al-Dīn.[65] He may well have met Raḍī al-Dīn al-Ghazzī in his youth. His acquisition in Istanbul, far away from his native Damascus, of a book written by the father of his Damascene professor must have been a way of connecting with the scholarly genealogy of the Ghazzī family, which was well known in Ottoman bureaucratic and scholarly circles in the mid-sixteenth century.[66] Ḥamzāwī's other activities as a book collector and reader show that his interest in the science of farming was not sudden or fleeting. In 1520–21, al-Ḥamzāwī wrote an ownership note in a partial copy of *Manāhij al-Fikar wa Mabāhij al-ʿIbar* (The Pleasures of Thoughts and the Ways of the Lesson), now held in the Süleymaniye Library in Istanbul.[67] Written by Muḥammad b. Ibrāhīm b. Yaḥyā al-Waṭwāt (d.1318), this work is an example of the interest among Mamluk scholars of the fourteenth century in compiling encyclopedias of various branches of knowledge.[68] The copy that al-Ḥamzāwī's note states that "he owned" (*milkahu*) contains only the last two sections of this work.[69] The complete four sections (*faṣl*) of *Manāhij al-Fikar wa Mabāhij al-ʿIbar* discuss the heavens, the earth, animals, and plants, in that order, fusing knowledge from the Qur'an, hadith, poetry, and scientific prose. The fourth section, on plants, which al-Ḥamzāwī owned, abounds with references to older authorities on farming such as Ibn Waḥshīya and Ābū al-Khayr al-Ishbīlī, as well as authors of botanical works such as Ābū Ḥanīfah Āḥmad ibn Dāwud Dīnawarī (d. 896),[70] Ibn Baṣṣāl, Ibn al-Bayṭār (d.1248), et al. Ibn Waḥshīya is, however, by far the most frequently cited source.

Al-Ḥamzāwī may well have written some of the marginal notes evident in the British Library copy of al-Ghazzī's treatise. One such note discusses the technique of "grafting with cleft" (*tarkīb al-shaqq*), a passage I cited earlier. This note, above which the annotator wrote a tiny Arabic number two, is found over the line where al-Ghazzī begins to describe how to immobilize the meeting point of the scion and the rootstock with mud, located on the upper left corner of the page. It remarks that beeswax is better for immobilizing the grafted place than white soil

64 British Library, London, ms. Or. 5751, f. 1a. "[…] *Muḥammad bin Aḥmad* al-Ḥamzāwī walad al-muelif al-kitāb fi sene 958 [1551]."

65 Ghazzi, *Kawākib*, 3:44. The editors of *al-Kawākib al-Sāʾirah bi-Aʿyān al-Miʾah al-Āshirah* render it Ḥamrāwī instead of Ḥamzāwī.

66 See Helen Pfeifer, "Encounter After the Conquest," *International Journal of Middle Eastern Studies* 47 (2015): 223–224.

67 Süleymaniye Library, Istanbul, ms. Reisülküttab no. 918, f. 1 and f. 255.

68 Jamal al-Dīn al-Waṭwaṭ, *Mabāhij al-Fikar wa Manāhij al-ʿIbar: encyclopaedia of four natural sciences by Jamal al-Din al-Watwat Muhammad ibn Ibrahim ibn Yahya al-Kutubi, d. 1318, Reproduced from MS 4116 Fatih Collection, Süleymaniye Library, Istanbul,* edited by F. Sezgin and M. Amawi (Frankfurt am Main: Johann Wolfgang Goethe University, Institute for the History of Arabic-Islamic Science, 1990), v.

69 Süleymaniye Kütüphanesi, Istanbul, ms. Reisülküttab no. 581, f. 1a.

70 Ibid., f. 404.

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or mud. The note provides information on how to do this with beeswax, and adds that the grafted place should be kept immobilized with the wax for a period of one month. Another marginal note, found in the treatise on farming that al-Ḥamzāwī purchased in 1551, supplies Ibn al-Bayṭār's recommendation for a method of alleviating the negative effects of wine: wine should be consumed in small glasses and during gatherings.[71] The same note also warns that vomiting followed by sleep is necessary if the person drinking feels sleepy or faints. Contemporary accounts of al-Ḥamzāwī as an organizer of feasts strengthen the likelihood that these notes were written by him. Najm al-Dīn – again, the son of al-Ḥamzāwī's tutor – describes him as one of Damascus's "notables" (*aʿyān*), who would often set up a table with many different foods from morning until evening and receive other notables from the region with a feast.[72] al-Ḥamzāwī's contemporary Ibn Ayyūb likewise notes that he welcomed notables from Ḥaleb (Aleppo), Quds (Jerusalem), and Rūm (Ottoman Balkans and western Anatolia), earning their friendship by offering them a feast, setting a large table with various foods from the beginning to the end of the day.[73]

Al-Ḥamzāwī's acquisition of two works on farming was likely connected to his bureaucratic career. Najm al-Dīn claims that al-Ḥamzāwī was the head supervisor of the charitable endowments of the Two Holy Cities and the Ummayad Mosque in Damascus, two of the most important appointments in the Ottoman administrative hierarchy in the province of Syria. Mathieu Eychenne has recently noted that the Ummayad Mosque in Damascus in 1403 controlled 78 properties in Ghūṭa designated as orchards (52), gardens (25) and vineyards (1) .[74] In 1526, a total of 226,232 aḳçe, the surplus (*zavāʾid*) from Damascus's charitable foundations, including the two above, was transferred to the inner treasury (*ḫızāne-i ʿāmire*). These two foundations also controlled a significant amount of the agricultural land in Ghūṭa, the district around Damascus, which, according to the Ottoman survey of 1535, comprised thirty villages.[75] This district received water from the Barada river, which originated in the mountains west of Damascus, flowed through the city and irrigated Ghūṭa before disappearing in the desert to the east. Quṭb al-Dīn al-Nahrawālī emphasizes that al-Ḥamzāwī "took pains" with the endowment of the Two Holy Cities, "augmented it, and assigned various

71 British Library, London, ms. Or. 5751, f. 27a.

72 Ghazzi, *Kawākib*, 3:44.

73 Staatsbibliothek Berlin, ms. Wetzstein II 289, f. 255a. See also Ghazzi, *Kawākib*, 3:43.

74 Mathieu Eychenne, "Éléments pour une étude de la Ghouta médiévale Les biens ḥarāğī de la mosquée des Omeyyades et leur environnement rural" in *Le Waqf de la Mosquee des Omeyyades de Damas: le manuscrit Ottoman d'un inventaire Mamelouk etabli en 816/1413*, edited by Mathieu Eychenne, Astrid Meier and Elodie Vigouroux (Beyrouth: Institut Francais du Proche-Orient, 2018), 260.

75 Ahmet Özkılınç, *401 Numaralı Şam Livâsı Mufassal Tahrîr Defteri (942/1535)* (Ankara: Başbakanlık Devlet Arçivleri Genel Müdürlüğü, 2011), 163–171.

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things to a group [of beneficiaries]."[76] Though Nahrawālī refers to other former supervisors of this charitable endowment, it is only for Ḥamzāwī that he gives such a comprehensive description of the way he supervised it.[77] The fourth chapter of al-Ghazzī's work would have been of particular interest to Ḥamzāwī', as well as to later Ottoman bureaucrats in Syria, such as the Ottoman governor Hüsayin Sarı, who according to the Damascene scholar Muḥibbī, tried to introduce new fruit trees in the countryside around Damascus, in the district of Ghūṭa.[78] From his study of the city's court records, Jean Paul Pascual has noted that janissaries and city dwellers had, at least from the end of the sixteenth century, acquired gardens in Ghūṭa.[79] Such transformations of land would have involved grafting on a fairly large scale. The Damascene poet, sufi mystic, and scholar ʿAbd al-Ghanī ibn Ismā'īl al-Nābulusī (d. 1731), in the introduction to his agricultural treatise *ʿAlam al-milāḥa fī ʿilm al-filāḥa (The Science of Elegance within the Science of Farming),* describes Ghazzī's treatise as the most important work he consulted when writing his own.[80] The living members of the Ghazzī family and their scholarly circles had probably facilitated the transmission of the work in early modern Damascus. Raḍī al-Dīn al-Ghazzī's grandson Najm al-Dīn, for example, was Nābulusī's teacher.[81] The history of al-Ghazzī's treatise and its later reception thus offers a complex picture of what it was to be a scholar in Damascus in this period, and the place of agricultural knowledge and grafting in Damascene scholarly and bureaucratic life.

The legal implications of grafting

A recurrent legal question in the early modern Ottoman period was that of the status of land versus the status of trees planted on land. As Mustafa Akdağ notes in his *Economic and Social History of Turkey* (1971), in the second half of the

76 Al-Nahrawālī, Muḥammad ibn Aḥmad al-Nahrawālī, *Journey to the Sublime Porte: the Arabic Memoir of a Sharifian Agent's Diplomatic Mission to the Ottoman Imperial Court in the Era of Süleyman the Magnificent; the Relevant Text from Quṭb Al-Dīn Al-Nahrawālī's Al-Fawā'id Al-Sanīyah Fī Al-Riḥlah Al-Madanīyah Wa Al-Rūmīyah*, trans. Richard Blackburn. (Beirut: Orient-Institut, 2005), 61.

77 Ibid., 61.

78 Jean Paul Pascual, "The Janissaries and the Damascus Countryside at the Beginning of the Seventeenth Century According to the Archives of the City's Military Tribunal," in *Land Tenure and Social and Social Transformation in the Middle East*, edited by Tarif Khalidi, (Beirut: American University of Beirut, 1984), 365.

79 Ibid., 360.

80 ʿAbd al-Ghanī ibn Ismā'īl al-Nābulusī, *ʿAlam al-milāḥah fī ʿilm al-filāḥah (*Beirut: Dār al-Kutub al-ʿIlmīyah, 2004), 5.

81 Samer Akkach, *Abd al-Ghani al-Nabulusi: Islam and the Enlightenment* (New York: Oneworld Publications, 2014), 25.

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sixteenth and first half of the seventeenth centuries, planting fruit trees on state (*mīrī*) land became a means of changing the status of the land itself from being state-owned to freehold.[82] Colin Imber, noting the importance of Akdağ's work, dedicates an entire article to legal debates on fruit trees in the legal opinions (sing. *fatwā*) written by Ottoman scholars in the sixteenth and seventeenth centuries.[83] Imber concludes that the Ottoman *ḥanefī* legal school drew a distinction between the status of land and that of trees: planting or grafting trees could allow someone to acquire ownership over the trees, but not the land itself. Imber concludes: "These rules gave rise to a mistaken, but quite understandable, popular belief that, by planting and cultivating trees, a person could gain freehold possession of the land."[84] This led to disputes and legal clashes, as Imber observes in the legal opinions of a number of Ottoman *şeyhülislām*.

Such legal opinions also reference, with growing specificity, techniques related to the propagation of fruit trees. For instance, in a legal opinion (*fatwā)* on the status of trees planted on state land, the şeyhülislām Ibn Kemal (b.1468-d.1536) granted freehold status to wild fruit trees that had been "pruned" (*budayıp*) and "arranged" (*tertip*) by a certain party.[85] A *fatwā* of the şeyhülislām Ebū Suʿūd Efendi (d.1574) specifically mentions the technique of grafting. He was asked, "[If] Zeyd grafts [new stock onto] trees on *miri* land, do [they] belong to Zeyd or the fiefholder?" He answered, "To Zeyd," specifying however that Zeyd was to give the fiefholder a tax called *fidan bahası* (tax on saplings).[86] This was one of a handful of legal opinions by Ebū Suʿūd Efendi that discusses grafting in the context of a legal dispute over tree ownership.[87]

Grafting in Ottoman poetry

This reference to grafting in an Ottoman legal opinion raises the question of how the technique was understood in Ottoman society. In a recent article focused on the 1503–4 inventory of the Topkapı Palace Library, I noted the rising interest in manuscripts on farming seen in both Mamluk Cairo and Ottoman Istanbul

82 Mustafa Akdağ, *Türkiyenin Iktisadî ve Içtimaî Tarihi (1453–1559)*, (Ankara: Türk Tarih Kurumu Basımevi, 1971), 166.

83 Colin Imber, "The Status of Orchards and Fruit Trees in Ottoman Law." *Tarih Enstitüsü Dergisi* 12 (1982): 763–774.

84 Imber, 773.

85 Ahmet İnanır, *Şeyhülislâm ibn Kemal'in fetvaları ışığında Kanûnî devrinde Osmanlı'da hukukî hayat: mes'eleler ve çözümleri (Fetâvâ-yı ibn Kemal)* (İstanbul: Osmanlı Araştırmaları Vakfı, 2011), 112.

86 Imber, 766.

87 Imber, 766.

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around 1500.[88] Reflecting on this period, the poet ʿĀşık Çelebi (b.1520–d.1572), in his *Meşâʿirü'ş-Şuʿarâ* (Senses of Poets), a very popular mid-sixteenth century biographical dictionary, ʿĀşık Çelebi emphasizes the horticultural interests of many of his predecessors. The most striking example is the Ottoman poet and bureaucrat Efşâncı Mehmed, a clerk in the inner treasury who translated the *waqfiyya* of the charitable foundation of Bāyezīd II in Edirne in 1507.[89] According to his biographer, Efşâncı Mehmed was extremely knowledgeable about the art of grafting (*aşılama*), and used a grafting technique in his own garden called budding or *yaprāḳ aşılar* ("grafting with a bud"), in which the bud from a desired plant was inserted beneath the bark of a stock plant.[90] After retiring from his long bureaucratic career, Efşâncı Mehmed established an orchard in Istanbul, where he also grew rare, expensive flowers.[91] He gave his flowers names, which suggests that he created new signature varieties. His biographer says that his peaches, quinces, and plums were particularly exquisite.[92] As ʿĀşık Çelebi also mentions, Efşâncı was an expert in making cut-paper gardens, a craft genre that flourished in sixteenth-century Istanbul and involved cut paper being pressed, crinkled, twisted, and layered to create virtual gardens.[93] One of Efşâncı's intricate, lush, colorful cut-paper gardens is still preserved today in the Istanbul University Library.[94] Efşâncı's expertise in the technique of grafting (in particular, a type of grafting that required extreme dexterity to insert the bud) and in cut-paper gardens is no coincidence. Both involve cutting and "pasting" with a high degree of manual skill, sparking new and innovative connections between plants – both virtual and real.[95]

The celebrated Ottoman poet Bāḳī (b.1526–d.1600), also an Ottoman official who was a member of the intellectual circle of Sultan Süleymān and held the most

88 Aleksandar Shopov,"'Books on Agriculture (al-filāha) Pertaining to Medical Science' and Ottoman Agricultural Science and Practice around 1500." In *Treasures of Knowledge: An Inventory of the Ottoman Palace Library (1502/3–1503/4),* Muqarnas Supplements 14, edited by Gülru Necipoğlu, Cemal Kafadar and Cornell Fleischer (Leiden: Brill, 2019), 557–569.

89 Ratip Kazancıgil, *Edirne Sultan 2. Bayezid Külliyesi* (İstanbul: Bizim Ülke Derneği Yayınları, 1988), 26.

90 Âşık Çelebi, *Meşâʿirü'ş-Şuʿarâ: Inceleme, Metin*, vol. 3, edited by Filiz Kılıç (İstanbul: İstanbul Araştırmaları Enstitüsü, 2010), 2:999.

91 Gülru Necipoğlu, "Early Modern Floral: The Agency of Ornament in Ottoman and Safavid Visual Cultures," in *Histories of Ornament: From Global to Local*, edited by Gülru Necipoğlu and Alina Payne (Princeton: Princeton University Press, 2016), 145.

92 Âşık Çelebi, *Meşâʿirü'ş-Şuʿarâ,* 2:999.

93 Efşâncı' was one of the earliest Ottoman makers of such gardens, according to Āşık Çelebi; see Âşık Çelebi, *Meşâʿirü'ş-Şuʿarâ,* 2:998.

94 Necipoğlu, "Early Modern Floral," 147.

95 For the history of the art of cut-paper, which became popular around 1500 and continued to be practiced, see this recently edited volume: Filiz Çağman, ed., *Kat'ı: Osmanlı Dünyasında Kağıt Oyma Sanatı ve Sanatçıları* (Istanbul: Aygaz – Mas Matbaacılık A.Ş, 2014).

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prestigious position available to a member of the learned class, that of a military judgeships of Rum and Anatolia, also employs grafting imagery in a poem that appears in his *Divan:* "Is it any surprise that the verses of Bākı have such sweet and juicy fruits? / in this vineyard [of poetry], none had ever struck such a scion."[96] The imagery of grafting, and in some instances the distinction between different types of it, appears in the poetry of many of Bāḳī's contemporaries, such as Emrī(d.1575), Ulvī (d.1585), Gelibolulu Mustafa ʿAlī (d.1600) and others.[97]

The *Revnaḳ-ı Būstān* and the scholar who was an expert in grafting

Grafting is extensively discussed in the *Revnaḳ-ı Būstān*, which was most likely authored by one of Efşāncı's contemporaries and is regarded as the earliest-known agricultural treatise written in Ottoman Turkish vernacular.[98] In the introduction, the anonymous author states that he wrote it while establishing his own garden near Edirne.[99] The work's four chapters (*faṣl*) are organized as follows: I) On the classification of soil; II) On the planting of trees; III) On pruning and grafting; IV) On diseases and cures. It also includes an appendix (*tetimme*) on how to grow watermelons, cantaloupes, squashes, and cucumbers in a vegetable garden (*būstān*), and on the cultivation of flowers including roses, carnations, and violets, with a note on how to grow flowers from bulbs.[100] An epilogue (*ḫātime*) briefly discusses methods of harvesting and preserving fruits.[101]

As we have seen, grafting was hardly a new technique. However, the discussions of grafting in the *Revnaḳ-ı Būstān*, like those found in al-Ghazzī's work, are highly specific and practical. In the third chapter, which is entirely focused on pruning and grafting, the author goes into detail about the necessary steps involved in the seven different types of grafting techniques he describes. The author gives the Turkish names of six types of grafting (*aşılaması*): *göz*, *zengīr*, *yarma*, *filis*, *ḳab* and *çubuk*.[102] Another type, which he lists second, is not named; however, the author emphasizes that he has tried out this technique himself. Thus, he implies that this type of grafting is his own innovation – demonstrating his practical knowledge and authority. The author also mentions that there are other

96 Sabahattin Küçük, *Bâkî Dîvânı.* Ankara: Kültür Ve Turizm Bakanlığı Yayınları. 1988, 221.
97 For a discussion of the grafting techniques in the Ottoman poetry in this period see Yaşar Aydemir, "Divan Şairi Aşıdan ne Anlar", *The Journal of Ottoman Studies*, XXVI (2005): 85–94.
98 Önler, 44–48.
99 Önler, 22.
100 Önler, 55–58.
101 Önler, 58–61.
102 Önler, 45.

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techniques, but that those are confusing and that the information he provides is sufficient.[103] Moreover, he writes, despite everything that has previously been written about grafting, to understand which kinds of trees are compatible with each other, it is best to observe "the people involved in grafting" (*aşılama ehlinden*).[104] In other words, anyone who wishes to learn about grafting should seek this knowledge not in books, but in the spaces of agricultural practice. This is in keeping with a striking remark that the author makes in the introduction: stating that, in writing the book, he "submitted to the opinions of the wise men" (*āḳvāl-i ḥukemāya ittibā*) from the "books on farming" (*kütüb-i filāḥa*), as well as "what [he] had heard from the practitioners" (*ehl-i tecribeden istimāʿ eyledügüm*).[105] It is in his discussions of grafting that the author chooses to clarify this remark, emphasizing that he himself is also a practitioner. The author also specifically locates the creation of his work within an agricultural space, his own garden near Edirne, whose construction occurred as he was writing the book and would certainly have involved many discussions with (other) practitioners.[106] The "people involved in grafting" were not a minor segment of society. By the seventeenth century, we learn from Evliya Çelebi, an Istanbul native, there was a "guild of grafters of fruit trees" (*Esnāf-ı aşılmacıyān-ı eşcār-ı müsmirāt*) with as many as 500 members, who were able to graft twenty different twigs from different-colored vines to a climbing grapevine (*asma*) that grew twenty different varieties of grapes.[107] The large number of grafters in Istanbul by the seventeenth century is not surprising, since by that time there were hundreds of produce gardens and orchards in the city and its surroundings.[108]

The author of the *Revnaḳ-ı Būstān* was writing for a very specific audience interested in agriculture. While he cites two canonical medieval Arabic works on farming (the Nabataean Agriculture, and the Roman Agriculture), much of the information he gives had a specific contemporary relevance.[109] This is certainly true of his discussions of grafting. Note, for example, this passage, which emphasizes the usefulness of grafting techniques for keeping a scion alive during long journeys:

103 Önler, 48.
104 Önler, 48
105 Önler, 22.
106 Önler, 22.
107 Çelebi, Evliya [b. Derviş Muhammed Zıllî]. *Evliya Çelebi Seyahatnâmesi: Topkapı Sarayı Bağdat 304 Yazmasının Transkripsiyonu, dizini*, edited by Orhan Şaik Gökyay (Istanbul: Yapı Kredi Yayınları, 2006), 1:263.
108 Aleksandar Shopov and Ayhan Han. "Osmanlı Istanbul'unda Kent Içi Tarımsal Toprak Kullanımı ve Dönüşumleri: Yedikule Bostanları," *Toplumsal Tarih* 236 (2013): 34–38.
109 Nabataean Agriculture and the Roman Agriculture, as I have argued elsewhere, were the two foundational works in the Topkapı Palace Library inventory dated to 1503–4. See Shopov,"Books on Agriculture."

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> And if it is desired for the scion (*ḳalem*) to be moved from one place to another, this can be done only with *yarma* (splitting) and *ḳab* (bark) grafting. Both sides of the scion should be enclosed with beeswax. After this, it should be wrapped in felt so that it is not exposed to air. In this way, it can survive for forty days on the road. When it arrives at the desired place, it should be removed and should be planted in a soil like the one mentioned above. Whatever kind of scion it is, it will endure.[110]

Such a comprehensive, "nitty-gritty" description implies a readership interested in the hands-on technique, in keeping with the mobility of Ottoman agriculture during the period. By the mid-sixteenth century, there was a large geographical space between the Adriatic Sea and the Persian Gulf in which saplings and scions of fruit trees circulated, bringing new tastes and textures into the growing Ottoman urban centers. Grafting was one of the most important techniques for transplanting distant species, relocating and transforming nature. In the *Hünernāme* (1584), a collection of stories depicting Sultan Süleymān's (r.1520–1566) moral attributes, the Ottoman court historian Seyyid Loḳmān reports that pomegranate saplings originally brought from Aleppo and Diyarbekir had been planted in the royal garden of the Topkapı Palace.[111] Because of the exquisite taste of their fruits, "a few knowledgeable pages" were assigned to take special care of the young saplings. However, the saplings were eventually destroyed, not by extreme heat or cold – as Süleymān had initially thought when he noticed their absence as he strolled through the garden – but because a palace page guarding one of the palace gates had mistaken them for weeds. That individual was forgiven for his lack of knowledge, as he hailed from the mountainous regions near Edirne, where such trees did not grow.[112]

The *Revnaḳ-ı Būstān*, with its detailed descriptions of grafting techniques, quickly became an Ottoman classic. There are 45 manuscripts known today, which are housed in libraries across the Balkans, Anatolia and Syria, filled with ownership notes and marginalia.[113]

110 Önder, 48.

111 Topkapı Saray Kütüphanesi, Istanbul, ms. H.1524, ff. 150a–150b. On the arrival of plants in the Topkapı Palace garden in the sixteenth century from locations such as Crimea and Syria, including the pomegranate trees from Haleb and Diyarbekir, see Gülru Necipoğlu, *Architecture, Ceremonial, and Power: The Topkapi Palace in the Fifteenth and Sixteenth Centuries* (New York, N.Y: Architectural History Foundation, 1991), 202.

112 Topkapı Saray Kütüphanesi, Istanbul, ms. H.1524, f. 150b.

113 Ekmeleddin Ihsanoğlu, *Osmanlı Tabii Ve Tatbiki Bilimler Literatürü Tarihi,* 2: 1216–1220; see also Cevad İzgi, *Osmanlı Medreselerinde İlim*, vol. 2 (Topkapı, İstanbul: İz, 1997), 222–223.

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Markets

Grafting was crucial in developing new varieties of fruits, which were also sold in Ottoman urban markets. Archival evidence of such a market can be seen in the case of Bursa – the first Ottoman capital, located in northwestern Anatolia. During the reign of sultan Bāyezīd II, in the first years of the sixteenth century, the Ottoman state authorities had already intervened by setting the prices of goods in Bursa's market. A legal code issued in 1501 registers local people's complaints about the prices of fruit sold in the market. They claimed that, whereas four or five years earlier both citizens and wholesalers had been able to purchase fruit without any restrictions, wholesalers at the market had begun buying up all the fruit imported into the city, as well as those produced in the city's own local vineyards and orchards.[114] The legal code lists the various types of fruit then available on the market in Bursa, offering a glimpse into the highly-developed market for fruit in an Ottoman city at the turn of the sixteenth century. For instance, in Bursa's market one could buy as many as thirteen different varieties of pears. The legal code lists the prices for these pears somewhat chronologically, according to when the varieties typically appeared on the market. One of the most expensive of all the varieties was the "sugar pear," (*şekkeri amrud*) whose name clearly indicates a special sweetness. During the first five days of its arrival on the market, 960 grams (300 *dirhem*) of the sugar pear could be purchased for one akçe; five days later, the price was 1,600 grams for one akçe; and at the end of the season, 1,920 grams per akçe.[115] Another variety, the "mace pear," (*bozdoğan armud*) probably named after a military mace it resembled in shape, was priced slightly lower: 1,280 grams for one akçe when it first hit the market; three days later, 1,920 grams for one akçe; then 2,560 grams for one akçe; and at the end of the season, 5 kilograms for one akçe.[116] Early arrivals could thus fetch more than double the price of older ones. Alongside the significant local production, two varieties of apples were also imported into Bursa from as far afield as Akşehir, a town in central Anatolia some 360 kilometers to the southeast. The price of these apples was measured by camel loads.[117] The intricate systematization of prices would have incentivized the creation of new varieties that could arrive early on the market, and new specializations among the city's merchants and sellers. The Ottoman scholar and poet Lāmi'ī Çelebi (d.1532) also mentions, in a poem on the beauties of Bursa, a beautiful fruit-seller (*mīve-furūş*) from the city named Ḥasan Bālī, whose many admirers the poet

114 Ömer Lütfi Barkan, "Kanunnâme-i İhtisâb-ı Bursa," *Tarih Vesikaları* II, no. 7 (1942), 22.
115 The measurement was done in *dirhem*; see Barkan, 19.
116 Barkan, 19–20.
117 Barkan, 20.

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compares to the many fruits hanging in his store, which was prominently located near the gate of the Cāmī-i Kebīr (the Grand Mosque).[118]

This diversification of produce and its celebration in poetry was connected to the investments that Bursa's urban elites were making into agricultural production around the city. For example, Molla Fenārī (d.1431), known as the first Ottoman sheyhülislām, created a large charitable foundation that supported a mosque and a school in Bursa and included several orchards outside the city.[119] Another striking case is that of Selçūḳ Ḫātūn (d.1485), the daughter of Sultan Meḥmed I (r.1413–1421). In 1483, Selçūḳ Ḫātūn's charitable foundation in Bursa endowed to itself agricultural land near the city. Described in the opening lines of the endowment deed as the "crown of women," Selçūḳ Ḫātūn was at the heart of Ottoman political life and participated in the dynastic struggles of the 1480s; the aunt of two contenders for the throne, she mediated between Cem Sultan and his brother Bāyezīd II to divide up the Ottoman state (Anatolia for the former and Rumelia for the latter).[120] Her *waqfiyya*, drawn up in Arabic just two years before her death, includes an unusual provision: it specifies the agricultural activities of two gardens and a field in the village of Soġanlı that Selçūḳ Ḫātūn endowed, ordering that this land was to be planted every year with "one hundred fruit trees of various kinds" (*mia't ashjar min ashjar samār al-mutanawwi'a*).[121] Another provision in the *waqfiyya* details the labor force, recording four male slaves and their wives already employed in the gardens.[122] Given the variegated market for fruit in Bursa, it is highly likely that these gardens were commercial ones.

By the end of the sixteenth century, fruit trees grown in and around Bursa were being transported to Istanbul on a regular basis. This was part of a complex operation attested in the financial records of the royal gardens. In the second half of the sixteenth century, officials under the control of the royal head gardener were frequently dispatched to Bursa to procure fruit saplings, and financial records of these purchases were drawn up in the department of the local royal treasury in Bursa. The officials recorded the materials used to transport the fruit saplings purchased from orchards in Bursa, which were wrapped in felt and stitched with cotton or hemp.[123] The saplings were then loaded onto carts and sent to one of the harbors on the Marmara coast, around 30 kilometers away, and,

118 Nuran Tezcan, "Güzele bir Şehrengizden Bakış," *Türkoloji Dergisi* 14, 1 (2001): 181–182.
119 Mustafa Bilge, *İlk Osmanlı Medreseleri* (İstanbul: Edebiyat Fakültesi Basımevi, 1984), 233–241.
120 İsmail Hakkı Uzunçarşılı, "Çelebi Sultan Mehmed'in Kızı Selçuk Hatun Kiminle Evlendi," *Belleten* 21, no. 82 (1957): 253–260.
121 Vakıflar Genel Müdürlüğü Ankara (VGMA), D. 608/2, f. 386.
122 VGMA, D. 608/2, f. 384.
123 Arif Bilgin, *Osmanlı Taşrasında Bir Maliye Kurumu: Bursa Hassa Harç Eminliği* (İstanbul: Kitabevi, 2006), 167.

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from there, loaded onto ships that sailed across the Marmara Sea to Istanbul. The sum spent on fruit saplings from Bursa differed from year to year – in 1598–9, 19,300 akçe were spent; in 1599–1600, 21,400 akçe; and in 1601–2, just 8,510 akçe.[124] The average yearly purchase at the time was 500 saplings. However, in 1614 and 1615, this number shot up to 2,000 saplings; these may have been intended for planting in the mosque complex of Sultan Aḥmed in Istanbul, which was then under construction, or for newly-established farming spaces around the city.[125] It is also possible that many of the sapling were sold on Istanbul's market, where demand for fruit trees would have been high thanks to the contemporaneous expansion of commercial produce gardens or *bostans* in and around the city.[126]

In 1580–1, a list of expenses related to the Topkapı Palace garden was drawn up by the supervisor of the royal gardens (*bāġçehā-ı ḫāṣṣa*), Meḥmed, and a scribe, Ḥasan.[127] The list is precise about the materials necessary for grafting. For instance, one entry details "the expense of honey beeswax, fat (*revġan*), and felt (*keçe*) for the grafting of various saplings."[128] Beneath this entry, a number of other expenses are recorded for tools related to working in the garden, such as buckets, handsaws, and rods, and for materials specifically used in the planting of saplings, including *cibre*, a fertilizer made from the residue of crushed grapes. The entry indicates that the saplings were purchased along with the *cibre*, ready to be planted and fertilized. The author of the *Revnaḳ-ı Būstān* advises adding *cibre* to young trees: *cibre* from white grapes for saplings that would produce white grapes, and *cibre* from black grapes for saplings that would produce black grapes.[129] In other words, there is archival evidence that an agricultural method described in the *Revnaḳ-ı Būstān* was actually employed in the palace garden.

Grafting and Ottoman ruling-class identity

In his *Künhü'l-aḫbār*, a history of the world from its creation until the Ottomans, the Ottoman scholar and bureaucrat Gelibolulu Muṣṭafā ʿAlī (1541–1600) invokes grafting as a metaphor for the identity of the Ottoman intellectual class that he identified as "Romans" (*Rumis*):

124 Ibid., 217.
125 Ibid., 167, note 158.
126 Shopov and Han, "Osmanlı Istanbul'unda Kent Içi", 34–38.
127 BOA, MAD. 511.
128 Ibid., 511, f. 2.
129 Önler, 34.

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> Those varied people and different types of Rumis living in the glorious days of the Ottoman dynasty, who are not (generically) separated from those tribes of Turks and Tatars [….] are a select community and pure, pleasing people who, just as they are distinguished in the origins of their state, are singled out for their piety, cleanliness and faith. Apart from this, most of the inhabitants of Rum are of confused ethnic origins. Among its notables there are a few whose lineage does not go back to a convert of Islam […] either on their father or their mother's side, the genealogy is traced to a filthy infidel. It is as if two different species of fruit-bearing tree mingled and mated, with leaves and fruits; and the fruit of this union was large and filled with liquid, like a princely pearl. The best qualities of the progenitors were then manifested and gave distinction, either in physical beauty, or in spiritual wisdom.[130]

This passage has been described by Cemal Kafadar as an example of the "plasticity of identities that had gone into the making of the neo-Rumis" living in western Anatolia and the southern, southeastern and central Balkans, where, in the fourteenth and fifteenth centuries, the Ottoman state emerged.[131] As Cornell Fleischer has pointed out, by the time ʿAlī was writing, there was a blossoming political and literary culture in Ottoman Turkish vernacular; ʿAlī was proud of his origins, even expressing a kind of "Rumi chauvinism" in order to compensate for the "sense of cultural inferiority vis-à-vis the older civilizational traditions of the Islamic world."[132] Fleitscher also notes ʿAlī's invocation of Rum as the "breeding ground" for the creation of a new cultural and political tradition.[133] What has not previously been remarked upon, however, is the significance of ʿAlī's use of an agricultural metaphor, the mingling or mating of two different types of fruit trees. ʿAlī language is reminiscent of how the author of the *Revnaḳ-ı Būstān* defines the technique of grafting: "to combine one variety with another" (*bir cinse bir cinsi ulaşdırmak*).[134] Moreover, ʿAlī uses the word *vaṣl*, which Cornell Fleischer rightfully renders as "mingled and mated," but which can be also translated as "grafted," as the anonymous author of *Revnaḳ-ı Būstān* used the term *vaṣl* to refer to grafting in the title of his third chapter on pruning and grafting fruit trees.[135] This grafting imagery was familiar to many of Alī's urbanite readers, many of whom were establishing orchards and vineyards on the outskirts of Ottoman cities.

130 Cornell H. Fleischer, *Bureaucrat and Intellectual in the Ottoman Empire: the Historian Mustafa Ali (1541–1600)* (Princeton, N.J.: Princeton University Press, 1986), 254; Mustafa bin Ahmet bin Âli, *Künhü'l-ahbâr* (İstanbul: Takvimhâne-i Âmire, 1277), 16.

131 Cemal Kafadar, *Between Two Worlds: the Construction of the Ottoman State* (Berkeley: University of California Press, 1995), 28.

132 Fleischer, 255.

133 Fleischer, 254–255.

134 Önder, 44.

135 Önder, 22 and 42.

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ʿAlī turns grafting into a metaphor for fundamental questions related to Ottoman identity and politics. At the time when he was compiling his history, grafting was being practiced in the very center of Istanbul's public space. The endowment deed or *waqfiyya* of Sultan Selīm II (r.1566–77), dated to 991 (1583–4), contains provisions related to employing a gardener (*bāġbān*) in the garden around the mausoleum. This garden was directly adjacent to the Ayasofya (Hagia Sophia) mosque and was located behind the south façade of the mosque, where it would have received an abundance of sunlight and would have been visible from the At Meydān (the Hippodrome).[136] The document is more specific than any previous *waqfiyya* about the duties of a gardener. It stipulates that the gardener needed to be "knowledgeable in the work of the produce gardens (*umūr-ı besātīn*), righteous (*müstakīm*), firm in his knowledge of the conditions of the flowers, an expert in the planting of trees, and able to graft (*aşılama*) and maintain trees."[137]

Grafting, in other words, was a technique that not only helped reshape the landscapes around cities; it also moved to the heart of public life in the Ottoman capital. At a time when the complex interactions between people and plants were taking on new economic dimensions, and when plants were both increasingly mobile and subject to new human interventions, grafting acquired new importance and meaning. The growing ability of sixteenth-century Mamluk and Ottoman urbanites to privatize, endow, and lease agricultural land transformed the environs of a number of major cities into experimental grounds where, through grafting, new varieties of fruit trees were developed, and distant varieties were cultivated in new regions, flooding the marketplaces with a dazzling diversity of fruits. The new possibilities of trees found expression, first, in farming manuscripts, where practical knowledge about grafting was communicated with new specificity and detail. Grafting also appeared as a metaphor in Ottoman poetry and literature, where it was associated with human creativity as well as Ottoman identity.

136 The building of the mausoleum was part of an elaborate renovation of Hagia Sophia that began during the reign of Sultan Selīm II, which involved clearing a space around the mosque, destroying houses, building two madrasas (which were never completed) and adding architectural features to the mosque such as buttresses and two minarets. The mausoleum was built later by Mimar Sinan, following the death of Sultan Selīm II in 1577. See Gülru Necipoğlu, "The Life of an Imperial Monument: Hagia Sophia after Byzantium." In *Hagia Sophia from the age of Justinian to the present*, edited by Robert Mark, and A. Ş Çakmak (Cambridge: Cambridge University Press, 1992), 205–208.

137 VGMA, D.1394, ff. 76–77.

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