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HEBREW UNIVERSITY'S BOTANICAL GARDEN: A SOURCE IN SCIENTIFIC KNOWLEDGE CREATION IN MANDATORY PALESTINE

Abstract

This primary source commentary analyzes a letter (dated 28 July 1929) sent by Alexander Eig, botanist and custodian of The Hebrew University of Jerusalem's herbarium, to Judah Magnes, chancellor and later first president of Hebrew University. This letter, which discusses the creation of a botanical garden connected to the university, shows how the emerging Jewish community of botanists at the newly established Hebrew University was carving out space for itself in the international community of botanical experts. Moreover, the letter exemplifies the importance of people's mobility in creating botanical knowledge, as well as the movement of plants, seeds, and other specimens, and highlights interaction between scientific institutions as an important aspect of nation-building. Mandatory Palestine's position as the "Holy Land," as well as its location across Middle Eastern and Mediterranean environmental spaces, made Jerusalem a unique and attractive center for botanical knowledge creation, as was recognized early on by the Jewish botanists in question.



INTRODUCTION

On 28 July 1929, Alexander Eig, botanist and custodian of The Hebrew University of Jerusalem's herbarium, sent a letter to Judah Magnes, chancellor and later first president of Hebrew University, in which he discusses the creation of a botanical garden connected to the university. At that time, the university had only been in operation for four years, having been founded in 1918 and inaugurated in 1925. Amid relative financial strain and lack of adequate teaching and research personnel for the envisioned departments, the Jewish community in Palestine and the Zionist movement progressively developed the university throughout the 1920s and 1930s. The Department of Botany was gradually built up by German botanist and renowned Zionist Otto Warburg, who also headed the department until his retirement in 1933.

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In the 1920s and 1930s, the department consisted of a small group of Jewish botanists, among them Alexander Eig, who had all immigrated to Palestine from (mostly Eastern) Europe in the first two decades of the twentieth century. Eig's letter to Magnes sheds light on the process of establishing a botanical garden at Hebrew University, which was ultimately achieved in 1931, two years after the writing of this letter.

The letter is of particular interest for two connected reasons. First, it reflects the inherent transnationality of the Zionist movement and its processes of knowledge creation. The trajectories of Eig and his colleagues at the department illustrate this process. Second, the letter shows the attempts by a nascent scientific community to find their place within a broader existing network of knowledge as the Jewish botanists at Hebrew University were trying to establish their botanical garden as a hub for research and, at the same time, as a valuable site for the exchange of seeds, plants, and other specimens. I will first discuss the mobility that characterized the work of the Jerusalem botanists (Otto Warburg, Alexander Eig, Michael Zohary, and Naomi Feinbrun-Dotan). Their mobility and connections contributed to the successful establishment of botanical study in Palestine-Israel and offers a glimpse into the transimperial exchange of scientific knowledge for colonial purposes. I will then explore what I call the "immaterial frontiers" that Eig established to promote his botanical garden and the community of Jerusalem botanists. I hope to show that institutionalized botanical knowledge in Mandatory Palestine was created by Jewish immigrants who simultaneously used this knowledge to produce and maintain the space over which they intended to rule. Mobility played a crucial role in this regard, in at least three contexts: first, the Jewish botanists' mobility before immigrating to Palestine; second, the botanists' decision to move to Palestine; and third, the travels the botanists undertook for their research once settled in Palestine. All these travels combined provided the canon of knowledge on which the botanists built their work.

The story of the Jerusalem botanists and their botanical garden plays out within two important contexts. In the beginning of the twentieth century, the Zionist movement was increasing its presence and dominance in Mandatory Palestine. Hence, Hebrew University was not only the first university in Palestine, but also the first university of the Jewish people globally. The pooling of Jewish expertise at the university, in turn, made the botanical garden possible and necessary for future generations' education. Additionally, by the 1920s, the connection between botany and colonial politics had been firmly established. Empires, particularly the British one, used botanical knowledge to exploit their colonies by transferring plants between colonies and the metropole for economic gains and altering native vegetation for settlement purposes, amongst other activities. I place the Jerusalem botanical garden within this history of imperial botany while recognizing the different scope of the Zionist movement compared to the British Empire.

BOTANICAL RESEARCH BETWEEN TRANS-SPATIAL MOBILITY AND NATIONAL REPRESENTION

Otto Warburg was a German-Jewish botanist born in Hamburg in 1859. He worked as advisor for the German colonial service in South and Southeast Asia where he became an expert on tropical botany. Upon his return to Germany in 1889, Warburg continued being active in German colonial endeavors through his journal *Der Tropenpflanzer*, which specialized in tropical agriculture, and by setting up several colonial enterprises in Germany. In 1900, Warburg was introduced into Zionist circles and quickly became more involved in the movement. He acted as president of the Zionist Organization from 1911–1921 and moved to Palestine in 1920.

Warburg was instrumental in establishing institutionalized botany in Mandatory Palestine. In 1921, he founded the Agricultural Experiment Station in Tel Aviv,² tasked with carrying out research in topics such as botany, agriculture, horticulture, and other areas that were supposed to contribute the improvement of agricultural practices in Palestine, with the goal to facilitate Jewish settlement in Palestine.3 I argue that Warburg's Zionist activities and his earlier engagement with German colonialism have to be understood together: Warburg's political convictions and his botanical expertise worked in tandem to create institutions that were intended to advance Jewish settlement in Palestine. Hebrew University's Department of Botany grew out of the experiment station, which also meant staying true to its outlook and taking over some of the core staff. This continuation and need for centralization were acknowledged by Eig in his letter to Magnes, when he refers to the Jewish botanists being situated in "a small country of limited possibilities and a limited number of specialists."4 Warburg led the Department of Botany until his retirement in 1933, after which he returned to Germany. Together with Eig, Warburg was also the initiator and co-founder of Hebrew University's botanical garden.

Among Warburg's colleagues at the Department of Botany,

Alexander Eig was the most influential figure until his premature death in 1938. His research on the flora of Palestine contributed substantially to the botanical knowledge of the area. To carry out his studies, Eig travelled throughout the region, including Lebanon, Turkey, Syria, and other countries. His legacy was built upon by his colleagues Michael Zohary and Naomi Feinbrun-Dotan whose research was crucial for the development of institutionalized botany in Israel after its creation in 1948. Feinbrun-Dotan, particularly, had an extensive travel itinerary in the 1930s and 1940s, including research stays at the most important European botanical institutions and expeditions throughout the Middle East. 5 Both Feinbrun-Dotan and Zohary are seen as the pioneers of Israeli institutionalized botany due to their important publications and long academic careers.

The botanists' backgrounds as well as travel and research connections show how crucially important mobility was for botanical research. The flow of botanical knowledge was particularly strong between Palestine and Europe, which stemmed from the botanists' European backgrounds and knowledge of European languages, as well as the fact that botanical institutions in Europe were particularly well set up and maintained. This was a legacy from the European countries' colonial experiences: botanical knowledge was crucial to the imperial projects of making colonies "productive," appropriate for European settlement, or for enriching the metropole.⁶ In our context, the German and British empires played the most important role in this regard. The former was Warburg's home and training ground, his formative years being invested in the study of tropical agriculture and the advancement of colonial sciences through his research and teaching of colonial administrators, and the creation of several colonial plantation enterprises.⁷ The latter, Britain, had several of the most well recognized botanical institutions and a long history of botanical empire making.8

A second important web of connections the botanists established was between Palestine and its neighboring countries. The Jerusalem botanists set out to study the characteristics of their region, which they understood in environmental terms first and in political segmentation only second. The fact that climate zones do not adhere to political borders makes botanical research trans-spatial by designfirst across empires and later across nation-states. Which influence this connectivity of the botanists had on the politics of Mandatory Palestine and what exactly their connections were is still up for analysis.

Tying the history of the botanical garden back into the broader context of imperial botany, several aspects stand out. First, the garden

was one of the first projects realized at the university, even before the establishment of several departments. This shows the importance of the botanical garden for the study of botany, but also botany's general importance for Jewish nation-building. The goal of the garden was to "acquire fuller representation of the Mediterranean and Oriental Flora" and to "concentrate . . . nearly all Palestinian plants" in one space.9 Neighboring areas are mentioned as well; however, it is quite clear that the focus is on Palestine. This focus on Palestinian plants differs from the setup of other botanical gardens' collections. The London Royal Botanic Garden at Kew, for example, was not intended to represent a full picture of British flora. By the mid-nineteenth century, it mostly functioned to gather as many plants as possible from around the world to showcase the extension and botanical richness of the empire, to support scientific botanical studies, and thus to advance the empire's needs.¹⁰ By representing the plant world of Palestine, the Jerusalem botanists did two important things for the Zionist endeavor: they solidified the space they saw as their homeland as a coherent (botanical) entity, and they tried to make a knowledge claim over said space, which was supported by their status as employees of the only university in the area.

BUILDING A NEW SPACE FOR KNOWLEDGE CREATION

Eig and Warburg saw the botanical garden as an important part of the Department for Botany at Hebrew University. When Eig was writing the letter to Magnes in 1929, the creation of the botanical garden was still ongoing. Practical issues, however, imposed obstacles on the creation of the garden: adequate land had to be found, and the necessary funds secured. To emphasize the importance of the garden in Jerusalem, Eig, in his letter, established (immaterial) frontiers delineating both the garden's sphere of relevance and its character. For example, Eig claimed that the garden was the only truly scientific institution of its kind "[f]rom Turkestan . . . and Caucasus . . . up to the North of French Africa, on the whole vast area which includes the greatest part of the Oriental Flora Zone." ¹¹ He thus invoked a farreaching space that allegedly lacked a scientific botanical garden, at the center of which he places Jerusalem.

Simultaneously, Eig dismissed the existing botanical gardens in Alexandria, Cairo, and the Beirut universities as mere "magnificent parks," albeit with a "certain scientific direction" in the case of Beirut.¹² In doing so, he drew a line between what he considered "scientific" and "non-scientific," and explained in detail the scientific needs the garden

in Jerusalem would fulfill, covering the field of systematic botany and many others.

Eig's dismissal of the gardens in Alexandria, Cairo, and Beirut as not scientifically satisfactory also functions to elevate the importance of the Jerusalem botanical garden. His emphasis on the garden being based on science-as opposed to being a park with a randomized collection and arrangement of plants-is supposed to legitimize the creation of the garden vis-à-vis the Hebrew University administration in charge of attributing the necessary land and funding. Another factor increasing the importance of the garden, according to Eig, was the unique location of Jerusalem at the border of the Oriental and Mediterranean floral zones, which rendered the garden a special significance for botanical research.¹³ From a "floristic standpoint," this location was ideal as it increased the appeal of the garden "if it be arranged properly and on a sound basis."14

The locations Eig invoked are suggestive of the space in which he saw the future of the garden play out. He drew up a mental map in which the garden was situated, which encompassed what today we might call the Middle East, with Jerusalem at its center. This space was clearly delineated. Eig's main reference points were the cultural hubs of the time, Alexandria, Cairo, and Beirut. He connected Jerusalem to these centers of science by mentioning the envisioned superiority of Hebrew University's garden as compared to theirs – which was rather aspirational, considering Hebrew University's early stage of development at the time.

The letter, however, does not only emphasize the relevance of the garden and the inclusion of Jerusalem into a line of urban centers but also illustrates how Eig attempted to put the botanists of Hebrew University on the map of a global network of botanical and broader scientific knowledge creation. Both founders of the garden, Eig and Warburg, saw the garden as an important tool for the study of botany, and also as conducive for the prestige of the Jewish community in Palestine. 15 Significantly, Hebrew University was the first all-Jewish attempt at scientific knowledge creation, which was simultaneously leveraged for the advancement of the Zionist cause of establishing a Jewish state in Palestine.

The political dimension of the endeavor becomes clearer when Eig refers to the establishment of an exchange network of botanical specimen with institutions abroad. In the letter, he mentioned that, although there was already great demand of specimen from Palestine,

the Sinai, and Syria, there were no established institutions that were able to meet these demands. The fulfillment of these requests, which he thought the botanical garden and connected Department of Botany were able to carry out, would "be a great service to us in our relations abroad." ¹⁶ The "us" in this context is interesting to reflect upon. Considering the background of the botanists involved, the mission of Hebrew University, and the general backdrop of Mandatory Palestine, "us" does not just reflect upon the community at Hebrew University but the broader Zionist movement and goals. Establishing connections with institutions abroad, albeit in a seemingly unpolitical context of botanical exchange, would embed the Jewish botanists more firmly into an international network of scientists and create legitimacy for them individually as well as their institution, which ultimately served the Zionist goal of creating a Jewish nation-state in Palestine.

Importantly, the work done at the garden and by the Jerusalem botanists did have practical influence on the future of the Zionist movement in Palestine. For example, in 1937, Eig was asked to testify in front of the Peel Commission on the question of whether Palestine could sustain more people (a crucial aspect to enable increased Jewish immigration) and to "prepare a map that would serve the arguments of the Zionist side in the international arena."17 In sum, in this letter, Eig fulfilled a series of important rhetorical tasks in the service of his imagined botanical garden, including emphasizing the garden's relevance as a center of scientific knowledge in the middle of a vast space without such an institution. Thereby, he laid out his mental reference points of the space that he wanted the garden to be in communication with. He was, at the same time, delineating himself, his colleagues, and the garden against competitors, carving out the Jerusalem botanists' position as unique by being situated in the "Holy Land" and across Middle Eastern and Mediterranean environmental spaces simultaneously.

CONCLUSION

The final scheme for Hebrew University's botanical garden tied together several influences and viewpoints about botany: On the one hand, its scientific focus met the needs of the group of botanists at Hebrew University who envisioned the garden as a place for experiments and research. On the other hand, the garden included an appreciation of the singularity of the garden's location. While more practical Zionists might have seen the garden as a step towards agricultural development of Palestine, there was also an awareness of

the needs for religious, cultural, and historical connection to the land through its plant world. This second aspect of the garden was not only directed at religious Jews but also at Christians who shared the imagery of the "Holy Land" and the biblical descriptions of its environment.¹⁸

Alexander Eig inaugurated the garden in 1931. Due to its location on Mount Scopus (today's East Jerusalem), it was not readily accessible from 1948 to 1967 and fell into disrepair. In the early 2000s, the garden was renovated and now shows a collection of uncultivated plants. Its main purpose today is the conservation of rare and endangered plants, their propagation, and their reintroduction into nature.

The 1929 letter from Eig to Magnes shows how the emerging Jewish community of botanists at the newly established Hebrew University was carving out space for itself in the international community of botanical experts. It exemplifies the importance of people's mobility to create botanical knowledge, as well as the movement of plants, seeds, and other specimens, and the interaction between scientific institutions as an important aspect of nationbuilding. Mandatory Palestine's position as the "Holy Land," as well as its location across Middle Eastern and Mediterranean environmental spaces made Jerusalem a unique and attractive center for botanical knowledge creation, as was recognized by Eig and his colleagues early on. The Jerusalem botanists' legacy for Israel's institutionalized study of botany, in turn, confirms the self-ascribed importance of this community.



PRIMARY SOURCE

Eig to Magnes, 28 July 1929. Box 18, folder 80/3: Botanical Garden 1925–1930. Archives of the Hebrew University of Jerusalem. (Translated by P. Hein)

July 22, 1929

Dr. J.L. Magnes,

<u>Jerusalem</u>

Dear Dr. Magnes,

Subject: Botanical Garden

I have been requested to submit to you a general scheme of the Botanical Garden. A detailed plan cannot be submitted now since such was not yet sufficiently discussed with Professor Warburg. A preliminary plan can be submitted in general features:

The Nature of the Botanical Garden

From Turkestan (where the foundation of an immense botanical garden has been laid down during the last few years) and Caucasus (where botanical gardens have been in existence a very long time) up to the North of French Africa, on the whole vast area which includes the greatest part of the Oriental Flora Zone, there is no botanical garden in the true sense of the word. The beautiful gardens of Alexandria and Cairo are but magnificent parks, as well as those of the Beirut Universities (both, that of the American and that of the French University) which have a certain scientific direction. Our Botanical Garden will thus be located almost in the centre of a large area which possesses no scientific institution of that kind. The interesting position of Palestine from the floristic standpoint, as situated on the border of the Oriental Flora zone on one side, and in the Mediterranean Flora Zone on the other side, will increase the importance of this institution if it be arranged properly and on a sound basis.

The Aim of the Botanical Garden

The fact of our being in a small country of limited possibilities and a limited number of specialists, necessitates the utmost centralisation. We understand, therefore, under the conception Botanical Garden a higher scientific institution for plantations, which will have to serve the science of Botany in all its aspects. Our aim is therefore the satisfaction of requirements of Systematic Botany in general, and those of Floristica (in its wide sense, which comprises both Oriental and Mediterranean Flora) particularly, Phytogeography, Phytosociology, Ecology, Plant Biology, Plant Physiology, numerous needs of Applied Botany, Seed Cultivation, etc., and finally, the study of our ancient literature in so far as it is connected with Botany, in short the more or less full satisfaction

of all these needs and requirements must be found in our Botanical Garden.

Some Details on the Various Sections of the Botanical Garden.

1. The Systematic Section.

We shall endeavour to have in our Botanical Garden representations of the most important groups in the plant world, a thing very important in the University botanical studies.

2. Floristic section

Special care will be taken to acquire fuller representation of the Mediterranean and Oriental Flora. According to the scheme we hope to concentrate in our garden nearly all Palestinian plants, as well as those of the most important of the neighbouring countries

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5. Physiological Section

In the greenhouse, as well as in the open air will be cultivated plants required for Physiology investigations. Here will be carried out all those Physiological experiments, in living plants, which have to be done in the open air and not in the laboratory.

6. Section of Applied Botany

The needs of this important branch of Botany are very numerous and its requirements from the Botan[ical] Garden are large. A portion of the Garden will be assigned for introduction of forest and fruit trees which are suitable for the mountainous region of the country. This requires first of all a large and convenient nursery, as well as the arrangement of an Arboretum for the varieties of fruit trees. Even if an Introduction Garden at Rehobot [sic] be arranged, the introduction garden of Jerusalem will not be parallel to it but will compete it, since the latter is intended for another area and other requirements. The Botanical Garden will be a central and principal experimental field for experiments in the different branches of Applied Botany, as: selection of summer fodder herbs, without watering, selection of honey plants, perfume plants, medical herbs, etc. It will have a special importance as an experimental forest, from the point of view of the study of the theoretical aspect, as well as of the practical side.

7. Section for Cultivation of Seeds and their Substitutes.

As in the majority of the Botanical Gardens, there will have to be at our garden a section for supplying seeds, bulbs, onions, etc. of Palestinian as well as plants of the neighbouring countries. This is of great importance in connection with our relations with the foreign institutions. There is a great demand for seeds, bulbs, etc. of the above mentioned countries, and there is none who would supply it. Even today we receive many requests from various Botanical institutions, as well as from individual botanists, in connection with the supply of the material requested, necessary for the investigations. This may be a great service to us in our relations abroad. This is particularly important, as there is a great interest in the plants of Palestine, Sinai and Syria, since these are "holy lands" and historically famous. An attempt of this kind was made last year by the Agricultural Department of the Government but its work is greatly depended on our assistance, and it is doubtful whether without us the Government is able to develop this branch of activity. We have to begin this branch of activity next year.

8. Section of the Plants of our Ancient Literature.

All, or nearly all, of the pants mentioned in our ancient literature will naturally have place in the garden, since it will comprise all the plants of Palestine. Care will have to be taken, however, that in the general layout of the garden, these should have to be placed conspicuously and in the manner suitable for the aim of the garden. There is no place here, of course, to speak about the large scheme of the "Prophets' Garden".

General Remarks.

For the beginning of the realization of this scheme, we have about 50-60 dunams of land of the Lamport donation. This area is insufficient for the establishment of our Botanical Garden. It has not to be expected that we may be able to arrange here a Botanical Garden which would be similar to the Great Botanical Gardens of Europe and America, but the very conception of such and [sic] institution, especially if it has to serve so many purposes as ours, makes it necessary to draw up a scheme, modest as it may be, which will suit that name. In accordance with the scheme discussed with Prof. Warburg, the Lamport Garden will have to be the central part of the Botanical Garden, and the various other parts will have to be connected with it. Such decentralization of the Botanical Garden, has of course many inconveniences in what concerns the organization, but on the other hand, it has certain advantages. It is well known, that the importance of the micro-climatic action in Jerusalem is very great. The following may serve as an example: in every garden the cultivated plants which grow on the western side of a house, differ in composition, as well as in development, from those growing on the eastern side of it (the side

protected from wind). It may be suggested, therefore, that is a part of the Botanical Garden of the University, will be planted to the east, on the side sloping to the "Dead Sea" (in the deep and pleasant valley, at a distance of half an hour's walk from the University Building, the climate of which is different from that of the place where the Lamport Garden is situated) we would be able to enlarge the potential possibilities of our garden, in so far as the subtropical flora is concerned. On the other hand, we are taking into consideration the fact, that a certain portion of the "Warburg Forest" which will extend over a sufficiently vast area, may be utilized for some of the purposes mentioned above e.g. partly for needs of "introduction". Mr. Ettinger's proposal of about 30 dunams in Talpivyot [sic], may be taken into consideration (it is perhaps a suitable place for introduction of Coniferous trees). The possibility of extending the Lamport Garden, has also to be taken up seriously.

Funds

Even the most limited scheme of the Lamport Garden requires sums much larger than those which we have in the present moment (L.P. 4750). The general unfavourable conditions of Jerusalem will necessitate very great further expenditure for the preliminary arrangements only, building of a basin of 2000 cubic metres approximately, levelling the ground, (though the lands which we have chosen are almost level), fencing the ground, paving of roads within the garden, erection of 2-3 buildings (even barracks), a greenhouse, watering installation, etc. are preliminary preparations. arrangement of the tree nursery and the plantations will take about four or five years, and then normal work will be started.

During the whole period it will be necessary to employ several special permanent workers and a number of temporary workers, and all this means considerable expenses. It will be worth while to persuade the Lamport family that they cover the expenses for the preparation of the garden bearing their name. They have to understand that after the exchange with the Government the Lamport Garden will be extended almost twice its original size, and the expenditure will thus be increased. As far as the widened program is concerned, it may be possible to interest new people in it. Thus for example, the interest may be secured of people concerned with agriculture and forestry, in the Applied Botany Section, (in the introduction garden and in the Arboretum), and of scientific men and physicians in the Subtropical Section of the Garden (since here will be located primarily the part of

the garden in which cultivation and selection of medical herbs will be carried out.).

In connection with the permanent staff required it may be supposed, that the Lamport Garden itself will need at least one scientific worker and three-four gardeners, one of them a trained specialist. For the coming years, only one gardener-planter is to be taken into consideration for planting of the tree nursery, (perhaps this may be Mr. Alterman) and one half day scientific worker.

We shall do our best to arrange the work in such a way as to enable Mr. Sohari [sic] to carry out this work during the next year, but then increased technical help will have to be given to our Department.

Respectfully yours,

A. Eig, Custodian of the Herbarium of Palestine Natural History

NOTES

- ¹ The history of botanical gardens and their role for imperialism has best been studied for the British Empire and its Royal Botanic Garden at Kew. See, for example, Lucile Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens* (New York: Academic Press, 1979); or Richard Drayton, *Nature's Government. Science, Imperial Britain, and the "Improvement" of the World* (New Haven: Yale University Press, 2000).
- ² The station later moved to Rehovot and took over this town's name.
- 3 Frank Leimkugel, "Botanischer Zionismus: Otto Warburg (1859–1938) und die Anfänge institutionalisierter Naturwissenschaften in 'Erez Israel,'" *Englera* 26 (2005): 128–52.
- ⁴ Eig to Magnes, 28 July 1929, box 18, folder 80/3: Botanical Garden 1925–1930, Archives of the Hebrew University of Jerusalem.
- ⁵ "CV of Feinbrun-Dotan," Naomi Feinbrun-Dotan I, Archives of the Hebrew University of Jerusalem.
- ⁶ See, for example, Londa Schiebinger and Claudia Swan, *Colonial Botany: Science, Commerce, and Politics in the Early Modern World* (Philadelphia: University of Pennsylvania Press, 2005); Zaheer Baber, "The Plants of Empire: Botanic Gardens, Colonial Power and Botanical Knowledge," *Journal of Contemporary Asia* 46, no. 4 (2016): 659–79; or Michael A. Osborne, "Acclimatizing the World: A History of the Paradigmatic Colonial Science,"

- in Nature and Empire: Science and the Colonial Enterprise, ed. Roy MacLeod, Osiris 15 (2000): 135-51.
- ⁷ "Warburg's Scientific CV," 4 January 1927, Otto Warburg, Archives of the Hebrew University of Jerusalem.
- ⁸ See Brockway, Science and Colonial Expansion; Drayton, Nature's Government; and William Beinart and Lotte Hughes, Environment and Empire (Oxford: Oxford University Press, 2008).
- ⁹ Eig to Magnes, 28 July 1929.
- ¹⁰ Drayton, *Nature's Government*, chaps. 6 and 7.
- ¹¹ Eig to Magnes, 28 July 1929.
- 12 Ibid.
- 13 Ibid.
- 14 Ibid.
- ¹⁵ Several documents in Botanical Garden 1925–1930 and Ephraim Hareuveni 1923–1930, Archives of The Hebrew University of Jerusalem.
- ¹⁶ Eig to Magnes, 28 July 1929.
- ¹⁷ "Prof. Alexander Eig," The Alexander Silberman Institute of Life Science, The Hebrew University of Jerusalem website, last modified May 2022, https://www.bio.huji.ac.il/en/content/eig-alexander.
- ¹⁸ Carlton C. Curtis to Hareuveni, New York, 16 March 1925, Ephraim Hareuveni 1923-1930, Archives of The Hebrew University of Jerusalem; Julian Mack to the Hareuvenis, US, 25 June 1925, Ephraim Hareuveni 1923-1930, Archives of The Hebrew University of Jerusalem; Marshall A. Howe to the Hareuvenis, NYC, 9 March 1925, Ephraim Hareuveni 1923–1930, Archives of The Hebrew University of Jerusalem.