The aim of this book is to examine networks of human and non-human connections pertaining to the climate in Palestine in the first half of the twentieth century. To borrow Bruno Latour’s words, these networks will be viewed as “simultaneously real, like nature, narrated, like discourse, and collective, like society.” More specifically, this book tells the story of climate investigation in Palestine and the way it shaped and transformed the life of humans and non-humans in this country. Likewise, it examines how climate inspired experts’ response, and why this response was not always successful. It is in part a story of people and their old and new environments, as well as a story of power relations and ecological engagements. Those who dwelled in Palestine in the first half of the twentieth century—Palestinians and Jews—had different experiences of and engagements with their local climate and environment. While these experiences were inseparable, they also reflected very different perspectives that were a result of their distinct colonial positions.

This study focuses mainly on the attempts of Jewish European experts to understand, manage, and deal with the climate in Palestine while highlighting the link between their orientalist views towards both the local climate and environment as well as towards its Palestinian population.
Orientalism, as Edward Said defined this term, “expresses and represents the Orient culturally and even ideologically as a mode of discourse with supporting institutions, vocabulary, scholarship, imagery, doctrines, [and] colonial bureaucracies.” According to Said, orientalist knowledge usually also tends to transform into a practical plan for domination. More recently, within the field of environmental history, Diana Davis has defined environmental orientalism as a Western representation of Middle Eastern and North African environments that were viewed as “strange and defective” compared to Europe’s “normal and productive” environment. This view resulted in the perceived need to “normalize” and “repair” them, thus justifying imperial projects of agriculture, irrigation, and forestation. Davis’s work, published in 2011, was one of the first to interrogate the power relations and forms of knowledge production concerning nature in this region from a postcolonial perspective. While Davis used the concept of environmental orientalism to refer mainly to British and French colonial environmental approaches, the current study wishes to highlight Zionist orientalist interactions with the climate and environment in Palestine and its discourses about it. By “discourse” I do not only include how climate was discussed in words, but also how it was formulated within social, political, cultural, scientific, and very much material spheres.

Addressing climate via an environmental orientalist approach goes hand in hand with adopting a more general colonial analytical framework, which is essential to this study for several reasons. The most obvious reason is related to the fact that climate science, and especially the investigation of warm climates by Western societies in the modern period, has been deeply embedded in a colonial context. Historians have often addressed European colonial perceptions of warm climates and suggested that the development of climate as a field of intense medical and scientific study was largely a result of European encounters with climates outside the so-called “temperate zone.”

As these historians demonstrate, the scientific study of warm climates by Europeans had already received growing attention with the first colonial conquests of the “New World” in the late fifteenth century. Nevertheless, climate obtained even greater attention from the eighteenth century onwards as a result of a number of scientific, economic, and political developments. It was predominantly the increasing transportation of
humans, as well as of animals and plants, between the metropoles and their colonial holdings, and the enormous financial possibilities enabled by global and imperial commerce, that led European trading companies during this period to hire experts to study environmental and climatic conditions necessary for human, animal, and plant acclimatization.9

However, as Deborah Coen and Martin Mahony individually show, the successful quantification of climate required numbers in different times and places to have the same meaning. Thus, it was only during the era of high imperialism in the second half of the nineteenth century—with its advanced communication and transportation technologies—when information on climate achieved its zenith, becoming standardized, widespread, and prevalent.10 The German-Jewish meteorologist Rudolf Feige confirmed the relationship between colonialism and climate science when he wrote that “every colonial enterprise, wherever it may be, relies tremendously on the climatic potential of the target country, and all colonialists must therefore notice the recordings of weather observations.”11

Today most scholars agree on the colonial characteristics of the Zionist project.12 Moreover, in recent years new scholarship has started to tackle the environmental aspects of this colonial project.13 In 2023 Irus Braverman coined the term “settler ecologies” to describe “the structural as well as the plural and dynamic components in of the colonial administration of nature as configured through scientific modes of knowledge and practice” in Israel/Palestine.14 One of the main objectives of this study is, therefore, to enrich and deepen this understanding by specifically addressing the role of climate within early Zionist settlement schemes and strategies. Zionist approaches to the climate in Palestine during the first half of the twentieth century were certainly formed by colonial science. Nevertheless, as we shall see shortly, the Zionist employment of colonial knowledge concerning climate was not one-dimensional, and it often revealed a blend of diverse colonial and metropolitan notions and tactics concerning the local environment and its Arab population.

For example, during the early twentieth century the Zionist Organization (ZO) regularly hired the services of “foreign” experts for its scientific expeditions (mainly British and German scientists, but also several Belgian, Swiss and French experts) who tended to employ Western research methods and axioms to examine climatic conditions that were
new and unfamiliar to them. Instead of trying to access local knowledge, these experts usually preferred using standardized scientific instruments such as thermometers, barometers, and rain gauges. They often stored this data in tables and charts and then used statistical tools to remotely analyze their findings.

This type of knowledge concerning warm climates was also mirrored in the education and work experience of Jewish Zionist experts themselves. At the turn of the twentieth century, Jewish experts generally acquired their academic studies in European universities, where they were often exposed to knowledge concerning warm environments that had been developed in the colonies. In addition, some of these experts had even participated in British and German colonial enterprises before joining the Zionist movement, and in some cases, they retained other colonial affiliations even after becoming Zionists.

As Derek Penslar and other historians have already shown, the German-Jewish botanist and Zionist leader Otto Warburg can serve as a prime example of this trend. Born in Hamburg in 1859, Warburg studied botany at the Universities of Bonn, Berlin, and Strasbourg. Following his graduation, he embarked on a three-year scientific excursion to study tropical plants in Asia and Australia. In 1897, he helped to found the German Colonial Economic Committee (Kolonialwirtschaftskommittee), which focused on promoting economic development in the German colonies, and became one of its most active members. Soon afterwards he founded the Committee's scholarly journal on colonial agriculture, entitled The Tropic Planter (Der Tropenplanzer), which he also edited.15

Warburg's prominent position in the German colonial scientific enterprise did not, however, prevent him from being a zealous Zionist. Warburg joined the Zionist movement in 1898, and from 1903 onwards he held several important executive positions in its organization, including as director of the Committee for the Exploration of Palestine (CEP) and chair of the ZO between the years 1911 and 1920. Warburg's involvement, instigation, and management of almost all the Zionist expeditions and investigations that took place between 1903 and 1914, alongside his unique emphasis on climate investigation, demonstrate how the transfer of knowledge and experts between different colonial enterprises enhanced Zionists' assimilation into general colonial scientific discourses.16
Alongside Zionist absorption of colonial knowledge in Europe and its colonies, Jewish experts were also exposed to colonial climate science via the imperial sponsorship provided to the Zionist enterprise in Palestine. This sponsorship was specifically relevant to the British support of the Zionist settler cause. As Shira Robinson notes, the “empire’s sponsorship . . . with the blessing of the League of Nations, had done much to facilitate the development of a Jewish national home.”\(^\text{17}\) While this sponsorship is often presented in the historical literature as starting with the Balfour Declaration of 1917, it reflected a much older tradition of English Protestant interest in a Jewish national revival, which was expressed between the years 1902 and 1904 through attempts of British Empire officials to find alternatives to Palestine for Jewish colonization.\(^\text{18}\)

British support for the “return” of Jews specifically to Palestine was similarly expressed before 1917 with, for instance, the activity of the Palestine Exploration Fund (PEF), established in the 1860s. This organization, like other analogous organizations operating in Palestine during the last decades of the nineteenth century, not only mapped and researched the country’s biblical mythology while advocating its revival by the Jewish people—as it officially stated—but also contributed to the production of colonial knowledge concerning the local environment and climate, which it frequently shared and exchanged with Zionist experts in later decades.\(^\text{19}\)

Moreover, during the Mandate period (1920–48), British sponsorship of the Zionist project was often manifested in official scientific collaborations between Zionist and British individuals and institutions, even if the relationship between the Yishuv (the Jewish settler community in Palestine) and the British local government was not always stable and was sometimes even conflicted.

Therefore, as Eitan Bar-Yosef claims, Palestine presents a challenge to the binary logic of Said’s orientalism. Rather than being a case of East/West, either/or, Bar-Yosef identifies it as a case of this/that/the other. In other words, unlike other destinations in the East which were perceived as antithetical to the West, the biblical land was ambiguously addressed as both exotic and strangely familiar, terrifying as well as manageable, as this and the other.\(^\text{20}\) While this logic has so far pertained mainly to Britain’s religious approach to Palestine, it also serves as a central component of the Zionist settler colonial identity in this country.
Thus, for example, while the investigation of warm climates among European colonialists in other destinations often expressed a sense of apprehension that was meant to “protect” colonizers from the so-called enervating influences of these climates, Jewish settlers in Palestine had a much more intricate approach to the local climate. This was a result of Zionist ambiguity towards Palestine and its native population. On the one hand, Jewish Europeans wished to view themselves as Occidentals settling in the Orient. On the other, they hoped to establish themselves in the country and become native to it. Thus, while they too feared the impact of warm climates on their lives, Jewish settlers were sometimes open to studying indigenous Palestinian methods of coping with the local climate, while simultaneously usually adhering to Western technological solutions. In so doing, similar to other contemporary settler societies, Jewish experts focused on how Jews could best acclimatize. In other words, while the colonial approaches to the study of climate in Palestine, mentioned above, mirror the knowledge absorbed by Jewish experts in metropolitan and imperial contexts, many Jewish experts who will be discussed in this book specifically expressed settler-colonial perspectives towards the study of the local climate in Palestine.21

Such perspectives are manifested, for instance, in the biography of the renowned Jewish agronomist Aaron Aaronsohn. Born in Romania in 1876, Aaronsohn immigrated to Palestine with his family at the age of twelve, following the economic and social hardship experienced by many Jewish communities in Eastern Europe in the last decades of the nineteenth century. As a youth he worked on the agricultural farms of Baron Edmund de Rothschild, which were often run by French agronomists, and at the age of eighteen he went to study agronomy in the École nationale supérieure d’Agronomie de Grignon, where he became acquainted with the French settler-colonial agricultural experience in Algeria. Following his return to Palestine, during one of his excursions to Mount Hermon in 1906, Aaronsohn discovered emmer (Triticum dicoccoides), which was believed to be ‘the mother of wheat’. This discovery brought him great professional fame, and Aaronsohn was consequently invited to lecture about his findings around the world, thus, creating many professional connections with international experts, mostly in settler societies.22

Growing up in Palestine before the advance of the interwar Zionist mass immigration, Aaronsohn was fluent in Arabic and was interested in
understanding Palestinian traditional agricultural practices. In 1910, he established an agricultural experimentation farm in Atlit. This station focused mainly on growing various local types of grain including wheat and barley, as well as local fruit trees such as citrus, olive, carob, pomegranate, and fig. Moreover, Aaronsohn investigated Arab cultivation methods, such as dry farming, that suited the country’s water regime. However, at the same time, he frequently pointed out the supposed backwardness and inefficiency of such methods and suggested improving them with Western cultivation methods.23

Aaronsohn’s biography largely embodies the Zionist settler-colonial experience. Unlike imperial-colonial administrations, which are often presented in the historical literature as primarily motivated by maximizing profit via extracting natural resources and exploiting indigenous labor, settler societies are usually characterized by populations that move by circumstance or necessity and tend to place great importance on the territory as a desired site of social transformation that they intend to make their own. Accordingly, settlers wish less to govern indigenous people or recruit them in their economic undertakings, than to seize their land, eliminate them or push them beyond an ever-expanding frontier.24

It is important to stress that the elimination of an indigenous presence by settler societies is not always expressed in physical annihilation. Before 1948, there were two other prominent forms of elimination in Palestine that we will frequently encounter in this book. The first form of elimination was manifested in formal and informal political, cultural, economic, and physical segregation and separation between Jews and Palestinians. This approach was often linked with feelings of anxiety and disgust “inspired” by the indigenous residents and their lifestyle, and it tended also to associate the local climate and environment with so-called Palestinian neglect. The second form of indigenous elimination, which might initially appear contradictory to the first form, was expressed in the active absorption, fascination with, and even appropriation of local customs, knowledge, and culture. As Lorenzo Veracini writes “a settler colonial project is ultimately successful only when it extinguishes itself—that is, when the settlers cease to be defined as such and become ‘natives,’ and their position becomes normalized.”25 Thus, following the work of Rayna Green, I argue that the cultural appropriation of indigeneity is based on a
logic in which non-native peoples imagine themselves as the rightful inheritors of what previously belonged to the local population, thus entitling them to ownership of the land.\textsuperscript{26} Within the realm of climate investigation, these two attitudes of rejection and appropriation frequently manifested in Zionist experts’ oscillation between expressing sincere interest in studying indigenous Arab methods of coping with the local climate, while simultaneously rejecting them as unsuitable for the living standards of Jewish Europeans and stressing the usefulness of modern science and technology in achieving the desired results.

In addition to expressing settler-colonial approaches to the land (including its climate and environment) and its indigenous people, as explained above, Jewish experts often also consciously compared the climate in Palestine and its different variables with the climate in other settler countries such as California in the United States, Queensland in Australia, and French Tunisia, and aspired to learn directly from these places how to overcome the hazards of warm climates. Thus, this study argues that Jewish experts not only shared similar climates with American, Australian, and French settlers but also saw themselves as sharing similar experiences, such as demographic and territorial interests and concerns, as well as viewing the new territory as a promised land.

The numerous Zionist approaches to the local climate and environment in Palestine also included memories of and comparisons with the climates in European countries that the Jewish settlers had left behind. Such comparisons, among other things, mirrored the difficulties of Jewish European settlers in adjusting and acclimatizing to their new environment in Palestine, and they similarly align with common settler-colonial perspectives about their new territories. As some have recently argued, the historiography of Zionism for many decades focused on praising the movement’s so-called successes in Palestine. Studies that have criticized this literature in the last few decades\textsuperscript{27} argue that it has given disproportionate attention to a relatively small group of idealist Jewish settlers, identified in the Zionist ethos as “the pioneers” (ha-chalutzim) who were believed to be “the paradigmatic Zionists.” However, despite the popularity of this group in Zionist historiography, it did not represent the attitude of most of the Jewish settlers who arrived in Palestine during the first half of the twentieth century. The majority of Jewish settlers were, in fact,
urban and middle class, and were not necessarily driven by a strong Zionist ideology but rather by anti-Semitic persecution and economic hardship. Accordingly, they often expressed feelings of alienation from and frustration toward the local climate, which, as we shall see, grew in proportion with the refugee crisis in Europe during the interwar period and World War II. During the Mandate period the Jewish community in Palestine increased its demography by 8.4 times (73 percent) as a result of mass immigration. This was also the time when the Jewish economic sector grew larger than the Arab economic sector in the country for the first time. The flourishing sense of Jewish confidence that was accompanied by these changes, alongside the existing difficulties of the settlers in managing the local natural conditions and the escalating political conflict with the local Arab population, similarly influenced the scientific discourse concerning climate, especially during the 1930s and 1940s.

In recent decades many historical and anthropological scholarly works have critically analyzed the cultural aspects of the Zionist transformation of the Palestinian landscape that were aimed at “blooming the desert.” The purpose of this study is to focus on the scientific investigation of the natural environment by experts, as well as to place Zionist professional and popular discourses concerning the warm climate in a larger global and colonial context by focusing on the professional links and connections between Zionist and other western experts on a global scale, as well as on the transfer of knowledge concerning climate within Western colonizing or “modernizing” networks. In addition, influenced by the unique trajectory of Jewish history in general and of modern Jewish history in particular, scholarship on Zionism tended for many decades to stress the Zionist movement’s exceptionalism. The intention of this book is different. As stated above, this study aims to juxtapose the Zionist project to other colonial projects, and to present it in relation to, and correlation with, other similar approaches toward warm climates.

Nevertheless, emphasizing the similarities of Zionism to other colonial enterprises does not mean that this colonial project did not have any unique features. One of the most obvious traits of the Zionist colonial project in Palestine was the aforementioned liminality of its members between east and west. While in Europe Jews perceived themselves—and, indeed, were perceived by others—as an oriental minority in the Occident,
their attempts to obtain a non-European territory led them to see themselves as an occidental minority in the Orient. While Jews indeed adopted an occidental perspective about Palestine and its indigenous people, they have often been presented as Orientals themselves whenever occidentals talked about or imagined the East.32

This condition of in-betweenness can also be seen in the shifting Zionist approaches to the environment in Palestine, which were not always consistent. As we shall see, the aim of establishing a settler nation of European Jews was, at first, based on a romantic belief in their autochthonous belonging to the Land of Israel. Thus, at the turn of the twentieth century, many Zionist leaders and thinkers attempted to highlight what they perceived as an organic link between the Jewish people and the environmental conditions of Palestine. However, following the actual encounter of Jewish settlers with the natural realities of Palestine, discussions on climate gradually lost their romantic attributes and instead became associated with growing fear of the perceived dangerous implications of non-temperate climates on Jewish European bodies and minds. While Jewish attitudes towards the climate shifted following the colonization of Palestine, this study does not aim to present this shift as an uncomplicated clear-cut event. Nor does it pretend to situate this change in a specific point in time or to associate it with a particular political faction within the Zionist movement. Instead, its emphasis is on the intricacy and ambiguity of the settlers’ physical dislocation, which occurred at different times for different actors.

Another unique characteristic of the Zionist colonial project, which was also present in the various scientific discourses on climate in Palestine, was the role of the Hebrew Bible in the construction of its national mythology. Descriptions of the Land of Israel in religious texts prevailed in both Jewish and in Christian traditions for many centuries. As we shall see in the following chapters, the discrepancy between the imagined biblical climate of “the land of milk and honey” and Palestine’s disappointing present-day reality became not only a cultural reference but also an important issue of scientific examination. As Billie Melman and Tamar Novick individually point out, religious sentiments in Zionist science and technology were not replaced by, but instead fused with, modernist sentiments.33

Biblical sentiments existed as foundational myths in the development of many national movements, especially those of the settler-colonial type.