

Jewish Blues

JEWISH CULTURE AND CONTEXTS

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JEWISH BLUES

A History of a Color in Judaism

Gadi Sagiv

PENN

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Introduction

What role does the color blue play in Judaism? In his autobiography, Russian-born Hasidic leader Yehoshua Heschel Rabinowitz (1860–1938) relates that following the 1917 revolution, a group of Jews arrived at a demonstration in Uman (today in Ukraine) in support of the new regime, waving a blue and white flag. Rabinowitz was asked about the Jews' choice of flag colors, which contrasted so strongly with the red Communist banners:

One person approached me and asked: Why is the color of your flag different from all other flags, which are red, whereas yours is blue and white? I responded: This will be your sign, sir. When the feet of our ancestors stood on Mount Sinai, hearing the living voice of God talking from the fire, saying, “You shall not murder!” (Exod. 20:13), a latent power was rooted in our soul to hate red blood; red blood is a horrible monster in the eyes of the Israelites, and upon seeing the appearance of red, the color of blood, the heart of Israel trembles. This is why we chose a flag of different colors, but not red. Among us, red is the symbol of evil, and when the prophet wanted to portray the image of human sins, he said: “Be your sins like crimson, they can turn snow-white; be they red as dyed wool, they can become like fleece” (Isa. 1:18). In contrast, the colors of blue [*tekhelet*] and white are symbols of goodness and grace. Tekhelet is like heaven and the Throne of Glory, on which the Creator sits and leads his world with grace. And white is the symbol of tenderness and pleasantness, causing all humankind to rejoice—a symbol of light and delight, a symbol of forgiveness and absolution.¹

Jews, it seems from the quotation above, are negatively inclined toward the color red and positively predisposed toward the color blue, also identified here with the term *tekhelet*. Moreover, the passage suggests a strong link between

color and group identity. Jews, a people close to peace and mercy and distant from blood and murder, argues Rabinowitz, prefer to distance themselves from the color red, associated with the latter. Rabinowitz further presents the color *tekhelet*, which is generally understood as blue, as the color of the divine Throne of Glory, thereby implying that the Jews have a special affinity for spiritual matters. This is just one of many examples of the symbolism attributed to the color blue in Jewish sources.

Of all colors, the color blue plays the most prominent role in Judaism. The term *tekhelet*, which in Jewish religious texts is the term for a range of bluish hues, denotes a dye that serves primarily two ritual purposes in the Hebrew Bible and rabbinic texts. The first concerns the liturgy of the Tabernacle and the Temple, where *tekhelet* was perhaps the predominant color encountered by visitors to these spaces. The second is the commandment to put a *tekhelet* thread on the *tsitsit* (the ritual fringes on the clothing of Jews) and to periodically gaze at these threads, a practice meant to serve as a reminder of God's commandments. This commandment to wear a thread of *tekhelet* actually distinguishes blue as the *only* color explicitly required in the performance of a personal ritual.

The rabbis of late antiquity mandated that the *tekhelet* dye be produced from the secretion of a marine mollusk known as the *hillazon*. In the centuries since, Jews gradually ceased to use *tekhelet* in their ritual life. The matter took a turn in the 1880s, when a Hasidic leader announced that he intended to reproduce the *tekhelet* dye and renew the religious laws associated with it. The twentieth century saw significant growth in the Orthodox discourse and scientific research on the *tekhelet* dye, culminating in the invention of another *tekhelet* dye, which has been widely accepted among several groups of Orthodox Jews.

That being said, blue is much more than a dye in Judaism. It features prominently in the *kabbalah*, the Jewish mystical tradition. The color also plays a notable role in Jewish magic and popular custom, particularly in Mediterranean societies, where it is considered an effective form of protection against the "evil eye." Blue is representative of the Zionist movement and is the only chromatic color in the national flag of the State of Israel. Blue also plays a messianic role because the *tekhelet* dye is required for the priestly garments and other cloths used in the Temple liturgy, and the reestablishment of the Temple is often a feature of Jewish eschatology.

This book presents a broad cultural, social, and intellectual history of the color blue in Jewish life, mainly between the sixteenth and twenty-first

centuries. The book explores important manifestations of this color in Jewish religious culture as a lens through which to view Jewish identity. I argue that the encounter between the social practices and the spiritual meanings associated with blue contributed to the perception of blue as a particularly significant color for Jews. Bridging diverse domains such as halakhah (Jewish law), mysticism, and messianism, as well as clothing and literature, this book proposes that, by way of a protracted process, the color blue has become a representation of Jewish identity and has even constituted a means through which Jews have understood themselves.

Two general premises underlie the study. The first is that colors constitute a unique prism through which to examine cultures, societies, and religions. Colors, which are basic properties of light and sight, generate intense emotions, communicate profound preferences, and are loaded with meaning. Color, which is perceived by most human beings, is a gateway to culture—not only visual culture but also systems of symbols, values, and practices. The universal aspects of color, however, should not lead us to the essentialist, ahistorical assumption that the color blue has certain intrinsic and unchanging traits. Johann Wolfgang von Goethe, for example, claimed that the blue hue “is powerful, but it is on the negative side, and in its highest purity is, as it were, a stimulating negation,”² whereas Wassily Kandinsky asserted that “blue is the typical heavenly color.”³ But I prefer to take this study in a different direction, one that avoids aligning itself with a specific ideological approach, be it religious or artistic.

Eschewing such essentialism, the second premise of this study is that the characteristics of color are shaped by history. In fact, colors have their own cultural and social histories. These histories include the changing roles and meanings that human beings have attributed to different colors in various historical contexts, as well as the manifold ways in which colors have been used. Tastes and preferences for particular colors also change according to historical context. A particular color can be perceived more favorably in certain historical contexts but generate aversion in others. Moreover, the color terms themselves change over time.

The changing roles and meanings of blue in Jewish culture will be investigated here against the backdrop of scholarship on colors in general, and the color blue in particular. Indeed, blue is probably the most researched color of all, whether in its material manifestations, such as indigo dye, or as a more abstract or spiritual presence.⁴ This popularity of blue as a subject of research seems to reflect a broader popularity of that color; in the twentieth and

twenty-first centuries, blue has consistently “won” color preference surveys around the world, at least in American and European cultures.⁵

Chapter 1 of this book briefly introduces premodern—ancient and medieval—references to material manifestations of the color blue in Jewish religious texts. This chapter, which aims to provide background for the chapters to follow, also introduces the basic vocabulary of the color blue in Judaism; this includes the color terms associated with bluish hues, as well as some of the objects and phenomena linked to these terms. The vocabulary of blue highlights the elusive relationship between color and language, in that the actual hue denoted by a particular color term varies in response to historical and cultural contexts.

While Chapter 1 deals with the materiality of blue, Chapter 2 turns to the spiritual significance of tekhelet in medieval Jewish mysticism, primarily in the kabbalah. Mystical texts present the color blue both as a divine manifestation and as a physical phenomenon that enables human beings to connect with God.

Chapter 3 combines the material and mystical perspectives of the first two chapters to discuss the symbolic and spiritual meanings associated with various practices in which the color blue has been, and continues to be, used. The chapter begins with a discussion of the distinctive colors of dress of Ottoman Jews, and then examines the discourse on color in the context of sixteenth-century kabbalah in Safed, Palestine, which was then under Ottoman rule. The encounter between the social practices of Ottoman Jews and the spiritual meanings attributed to clothing by the kabbalistic texts of that time contributed to the perception of blue as a color of special significance for Jews. In addition, this chapter investigates the relatively minor role played by the color blue among early modern Ashkenazic Jews.

Chapters 4 and 5 focus on the modern renewal of the tekhelet dye. Chapter 4 presents the introduction of new tekhelet dyes in the nineteenth and twentieth centuries against the backdrop of general scientific developments in color production, particularly scientists’ growing interest in the renewal of historical colorants. Chapter 5 goes beyond the material aspects of the tekhelet dye to discuss broader issues within Orthodox Judaism raised by the renewed use of the dye, such as the tension between science and religion, the limits of rabbinic authority, and the rise of messianic sentiments.

Below, I briefly survey the existing scholarship on colors in Jewish studies and elaborate on my approach in this book.

Colors in Jewish Studies

The study of colors, an interdisciplinary field of research, has grown significantly in recent decades. Colors are studied across various disciplines—not just in the natural sciences and the arts but also in the social sciences and the humanities, including history, anthropology, and religion. This research takes an interest in color not only as a property of light and sight but also as a gateway to various manifestations of culture. In this regard, it is worth mentioning that linguists often mention color terms when discussing the complicated relationship between language and culture.⁶ Philosophers, too, often bring up the topic of color, and Ludwig Wittgenstein famously claimed that “colors spur us to philosophize.”⁷

In the field of Jewish studies, too, colors have begun to draw scholarly attention, although to a lesser extent than in other cultures or religions.⁸ Since the nineteenth century, many scholars and thinkers have maintained that Judaism has traditionally been characterized by “aniconism”—the rejection, denial, or suppression of visual representations. Indeed, the Hebrew Bible commands that “you shall not make for yourself a sculptured image, or any likeness of what is in the heavens above, or on the earth below, or in the waters under the earth” (Exod. 20:4). The purported aniconicity of Judaism has been used as the basis for an argument that color did not play a prominent role in Jewish culture. Other scholars have claimed that Jews have a propensity for color blindness, due to some genetic characteristic or as a result of poverty (based on an argument that color blindness is more widespread among poor people).⁹

But the aniconicity of Judaism has long been contested.¹⁰ Moreover, toward the end of the twentieth century, Jewish studies has undergone a “visual turn,” and the study of Jewish visual culture is flourishing in the twenty-first century.¹¹ Relatedly, Jewish studies is clearly not characterized by what David Batchelor has termed “chromophobia,” which he describes as an aversion to the use of multiple colors and a preference for black-and-white combinations.¹² Although color research does not yet play a notable role in Jewish studies, when compared with the role it plays in the study of other cultures

and religions, it is now undeniable that color has long been a key aspect of Jewish visual culture. Accordingly, there has been a steady increase in studies of the roles and manifestations of color in Jewish cultures.

The bulk of this research centers on antiquity, with studies of ancient Hebrew color terms (studies that reflect the aforementioned interest in color terms among linguists), studies of the dyes and textiles of ancient Palestine, and studies on ancient Jewish material culture, in which these dyes hold a prominent place.¹³ Related to the studies on ancient material culture are endeavors to restore ancient dyes used by the Jews, particularly *tekhelet*.¹⁴ Most notable are Steven Fine's studies on the role of color in the Jewish culture of the Roman period, which employ a holistic historical approach that combines texts, art, and archaeology.¹⁵ An art historian, Fine focuses on revealing the original colors of ancient Jewish artifacts. In particular, Fine directed an international project that discovered the original colors of the menorah relief on the Arch of Titus in Rome.¹⁶

Gershom Scholem's essay "Colours and Their Symbolism in Jewish Tradition and Mysticism," originally presented at the 1972 Eranos Conference "The Realms of Colour," mapped out a new direction for the study of the role of colors in medieval Judaism.¹⁷ In that work, Scholem argued that in contrast to the widespread image of Judaism as a religion in which the visual aspect is suppressed, colors do in fact play a significant role in Judaism, primarily in kabbalistic sources. He claimed, therefore, that there was a need for further research on colors. Accordingly, Scholem's essay focuses mainly on kabbalistic sources; it does not extend beyond the medieval period and examines the mystical and symbolic roles of color while neglecting other aspects of color, such as the materiality of color and its connection to the spiritual in domains such as ritual and magic.

After Scholem, scholars of Jewish mysticism did refer to colors, but usually this was done *en passant*. In these studies, which, like Scholem's essay, focus on medieval kabbalah due to the relatively numerous references in kabbalistic texts, colors are understood as secondary attributes of other phenomena, or as instruments for achieving other goals. A notable exception is Moshe Idel, who has dedicated several articles to the visualization of colors during prayer.¹⁸

There is hardly any research on the significance of color among Jews in the early modern and modern periods. Rebekka Voss's work on the manifestations of the color red in Yiddish and German narratives of the "Red

Jews”¹⁹ is an important start in that direction. Literary scholars also occasionally note the use of color in Hebrew writers’ figurative language.²⁰ Overall, however, the role of colors in the lives of modern Jews has been largely ignored.

In addition to the academic scholarship on color in the field of Jewish studies, this book should also be understood against the backdrop of contemporary writing on tekhelet by Orthodox Jews. These writings are part of attempts to rediscover the lost source of the ancient tekhelet dye and recreate allegedly “authentic” tekhelet-colored fringes, as well as attempts to promote the use of the dyed fringes among contemporary Jews. Contemporary tekhelet activists, some professionally trained in the natural sciences, have published valuable studies about dyes and dyeing in antiquity. However, these studies have an explicit religious and ideological agenda: renewing the Jewish past and emphasizing the connection between the Jewish past, Zionism, and the contemporary State of Israel. The scientific character of these studies, incorporating chemistry and biology, generates an impression of pure scientific objectivity leading to the authentic dye. But most of these scientific studies are marked by a religious disposition and an excessive reliance on rabbinic texts as historical sources. While these tekhelet activists attempt to reach definitive conclusions regarding the usage of tekhelet in religious ritual, it is not at all clear that that usage was so definitive in ancient times.

Moreover, the desire of contemporary Orthodox researchers of tekhelet to achieve a practical dyeing method that will be accepted by communal consensus also marginalizes dissenting Orthodox opinions regarding tekhelet’s origins and production. Additionally, in their aspiration to advance the acceptance of tekhelet by the entire Jewish people, they formulate their message in ways that portray tekhelet in a positive light, leaving aside potentially controversial issues. This might explain their avoidance of the messianic aspects of tekhelet, as well as the relative neglect of the various kabbalistic texts that discuss tekhelet, as these two subjects are rather contentious. Active messianism is a debated topic among Orthodox Jews, while kabbalistic texts present not only the positive, even sacred, character of the color blue but also its dangerous and demonic aspects. Moreover, kabbalah sometimes suffers, in the eyes of secular as well as religious Jews, from a negative image as irrational idolatry. Hence, these two aspects of tekhelet—messianism and kabbalah—might deter various circles of Jews from accepting tekhelet.

The present book aims to contribute to the growing awareness of the role of color in Judaism and among Jews. It follows in Scholem's footsteps in its assumption that colors and color symbolism play an important role in the Jewish religion, particularly in Jewish mystical traditions. But the book breaks with Scholem in that it is not limited to the theoretical and spiritual aspects of color but rather aims to employ a more integrative approach, examining the material and social reality of color use. This book also breaks with the contemporary Orthodox Jewish discourse on *tekhelet*. It seeks to show that the history of the color blue is not only the history of the production of an ancient dye for the performance of religious laws. Accordingly, this book has no practical or religious agenda to prove the authenticity of any specific dye or the legitimacy of any particular commandment. Instead, this work aims to provide a thorough analysis of the social and cultural significance of the color *tekhelet* in Jewish life.

The Approach of This Book

Jewish Blues might seem like a companion volume to Michel Pastoureau's books on particular colors,²¹ Amy Butler Greenfield's book on red,²² or Bruce R. Smith's book on green in early modern England.²³ In fact, it differs from these works in its focus on a particular religious context and on the textual sources of that context.

Below, I outline the main principles of this book. First, however, a word is in order about color terms. In 1931, the Committee of the Hebrew Language (which would later become the Academy of the Hebrew Language) proposed that the word *tekhelet* denote dark blue and *kaḥol* light blue. The distinction between terms for dark and light blue might have been inspired by a similar distinction in the Russian language, which was spoken by many Jews in Mandatory Palestine. In 1934, the committee switched the pair, proposing that *tekhelet* denote light blue (as it does in modern Hebrew today) and *kaḥol* denote dark blue.²⁴ This flip-flop might have been caused by a mismatch between the Russian dark blue / light blue distinction and the premodern Hebrew conceptions of color. In the Hebrew of antiquity and the Middle Ages, it was not necessarily the shade that differentiated one blue from another but rather the practical use of the color: while *tekhelet* was a dye required for liturgical purposes, *kaḥol* or *koḥal* was probably the pigment kohl, used for cosmetics. Of these two, it was the word *tekhelet* that

became the main color term for blue in premodern Hebrew. *Tekbelet* denoted a range of bluish hues, whereas the word *kaḥol* was rarely used as a color descriptor.

Integrating the Semiotic, Normative, and Social Aspects of Color

In *Blue: The History of Color*, Michel Pastoureau argued for the importance of the social history of color: “Any history of color is, above all, a social history. Indeed, for the historian—as for the sociologist and the anthropologist—color is a social phenomenon. It is society that ‘makes’ color, defines it, gives it its meaning, constructs its codes and values, establishes its uses, and determines whether it is acceptable or not. The artist, the intellectual, human biology, and even nature are ultimately irrelevant to this process of ascribing meaning to color.”²⁵ Although this statement is somewhat hyperbolic in its disqualification of important aspects of color, it makes an important point about the need to consider the oft-neglected social aspect of color.

Jewish Blues investigates the color blue from an angle that addresses both spiritual and material facets, seeking to illuminate a possible bidirectionality of influences. This integrative approach brings together not only various types of sources but also several aspects of color. I am referring primarily to the semiotic, normative, and social aspects of the color blue.

The semiotic aspect of color refers to the significations of particular colors, particularly color symbolism and the meanings attributed to different colors. These sorts of meanings can often be found in literary texts. Within religious sources, they are most striking in kabbalistic texts, in which colors are often symbols of the celestial world, representing attributes or manifestations of God. Colors can also signify emotions and ethical values such as anger, humility, and purity.

In the semiotic sphere, colors not only represent the world but also construct it—that is, they shape our perspectives. One might think of the twentieth-century example of the Western cultural tagging of pink as “feminine,” in contradistinction to blue as “masculine.”²⁶ An example from the Jewish context is that Jews in medieval Venice were in some periods required to wear yellow clothing, a color that was associated with prostitution.²⁷ This contributed to a negative image of the Jews. Thus, by observing a culture’s use of colors, one can glimpse how culture and society themselves are shaped.

The normative aspect of color refers to directives for using colors in legislation, ethics, rituals, and so on. In the internal Jewish discourse, that aspect

is manifested in the biblical and later rabbinic directives for the use of pigments and dyes, such as in the liturgy of the biblical Tabernacle and the Jerusalem Temple. It also includes kabbalistic sources that present colors as means or objects for mystical experiences, sometimes with guidelines for the achievement of those experiences. The normative aspect also includes guidelines and regulations on external appearance, such as sumptuary laws indicating prohibited or mandatory colors imposed by non-Jewish rulers, as well as internal guidelines presented by various rabbis, in order to attain or maintain specific values, such as modesty.

The semiotic and normative spheres are theoretical in that they do not reflect the actual historical use of color in society—namely, how colors were used by people of a particular social group in a particular time and place. Therefore, this book also approaches color as a social phenomenon with a history of reception, including preference and usage. The social aspect of color depends on the material aspect of color, including the sources from which colorants are made, such as minerals, mollusks, and plants. There are numerous types of colorants, be they dye solutions or pigment suspensions. In addition, there are many types of colored objects, including textiles, jewels, paintings, and ritual objects. While I cannot cover all colorants or colored objects, I will describe major ways in which Jewish people chose to use specific shades of blue, as well as the social history of the Jewish scientists who aspired to produce a “Jewish blue.”

The semiotic, normative, and social aspects of color are inseparable. There are complex relationships and multidirectional influences between each of these features. For example, normative discussions regarding the commandment to wear the tekhelet thread of the tsitsit often come with semiotic elaborations on the thread’s innate meaning, whereas the social reality of how the dye was used resulted in adaptations to the directives of using it. Hence, in the following chapters, I focus on instances in which the meanings attributed to a color influenced its usage in the social realm. Conversely, I aim to shed light on cases where the praxis of a particular color’s use enriches its symbolism, which, in turn, further explains the praxis.

One such point of interest is the question of color preferences. Contemporary studies in social psychology survey affinities for or aversions to particular colors in particular cultural settings, sometimes from a cross-cultural perspective.²⁸ Although it is difficult to find such systematic surveys about the past, a variety of sources convey color preferences, such as the passage at the beginning of this Introduction. Preferences can also be gleaned

from studying the colors used in material culture. From sources about dyed textiles, jewels, and cosmetics, it is possible to learn not only about the availability of materials in a certain culture but also about the tastes and preferences of the people of that culture, as well as the value ascribed to certain artifacts. Color preferences are associated with both the physical and the symbolic aspects of colors. Preferences influence, and are influenced by, the availability of particular colorants. At the same time, preferences for particular colors affect and are affected by the symbolism of these colors.

In different cultures, colors are associated with different emotions or traits. Like other colors, blue has been attributed various, often contradictory, roles and meanings. It is often linked with the spiritual or the divine, yet also with evil forces, depression, and even death.

Clothing is another domain in which various aspects of color meet. Michel Pastoureau has claimed that “fabrics and clothing offer the richest and most diverse source of artifacts for the historian seeking to understand the role and history of color in a given society. Cloth products tell much more about this history than do words or artworks.”²⁹ Individuals’ and groups’ clothing colors are influenced by numerous factors, including availability of materials, local and contemporary preferences, and legislation. The relationship between these features, however, is intricate. Personal taste, emotions, availability, affordability, and legislative enforcement are only a few of the many possible drivers for color choice. Additionally, the line between preference and requirement is difficult to draw: while state or religious laws might prohibit or mandate a color, the wearer might hate that color, like it—or learn to so do, and declare it a preferable color as an act of opposition and subversiveness.

Blue as Part of the Palette

Colors do not exist in isolation: they are always part of a system. As Umberto Eco remarked in “How Culture Conditions the Colours We See”: “In any system, whether geopolitical or chromatic or lexical, units are defined not in themselves but in terms of opposition and position in relation to other units.”³⁰ Accordingly, colors are markers of diversity in both nature and culture; they both represent and shape our image of diversity. This diversity can take several forms. One form, which we find in the opening passage, is that of stark oppositions: there, the line between blue and red marked the difference between Jews and non-Jews. Another form is an infinite gradient

of diversity and specificity, like that of “darker,” “brighter,” “colder,” and “warmer,” comparatives that represent the endless variety of nature.

Accordingly, the history of the color blue in Judaism is by no means limited to what we might consider the basic shades of blue. The history of any particular color includes those colors considered similar, as well as those considered different and even opposite. As in other languages, linguists identify basic color terms (BCTs) in Hebrew. In biblical Hebrew, these are *adom* (red), *lavan* (white), *shaḥor* (black), *yarok* (green), and *tsabov* (yellow).³¹ Colors considered similar to blue—primarily green and black—are often associated with the color term *tekhelet*. As we will see in the chapters to follow, there has been some controversy as to whether *tekhelet* referred to blue or to shades of green or black. These colors, which are close to blue in the visible spectrum, have often been taken to characterize blue or *tekhelet*.

Blurring the borders between color terms is a general characteristic of the language of colors. Despite the finite number of color terms in particular languages, the continuous character of the visible spectrum means that the boundaries between these separate terms are not always clear. Consider, again, the case of blue and green. Surveys of color terms across cultures show that there are cultures in which there is a single color term for the range between green and blue,³² and there are colors, such as turquoise, that can be classified as either blue or green. The term *grue*, an amalgamation of “green” and “blue,” is used in scientific literature to refer to those terms denoting that range of hues. Studies in psychology show the difficulties, in certain circumstances, of differentiating between green and blue.³³

However, blue and green can be perceived as significantly different, such as when the Muslims considered green to be the color of Islam, whereas blue befits the humiliated non-Muslims. In addition, red (*adom*) and white (*lavan*) are also considered, particularly by modern Jews, to be in sharp contrast to blue. Blue is contrasted to white within the colors of the *tsitsit*,³⁴ as well as the colors of the flag of the State of Israel. Blue, which often signifies spirituality, will be contrasted with red, which sometimes symbolizes blood and corporeality.³⁵ As such, all colors of the palette are part of the history of blue because they point to what blue is not.

Between Universality and Particularity

In this study, I use the universality of color to examine the role of the color blue in various social groups and cultural settings. Colors are universal because

they appear everywhere in the physical world, as well as in the imagination. Colors are perceived by most human beings regardless of culture, religion, class, gender, or literacy. Hence, through color it is possible to probe the reception of values, ideas, and sensibilities across social class, gender, and educational background. Moreover, colors can also highlight the mobility of ideas, symbols, and practices across these boundaries. In the case of the color blue, I will investigate how attitudes toward blue among Jews were influenced by dispositions toward it among non-Jews; how Jews distanced themselves from colors that they considered non-Jewish; how blue became a color that signified the subversion of lower classes against the elite, or young people against older generations; and how the messianic undertones of blue generated mixed emotions toward that color in different subgroups of Orthodox Jews.

However, universality does not imply uniformity. The same colors play different roles in different social groups and cultural settings. Although colors are perceived by most human beings, the ways that certain colors are perceived, as well as the roles and meanings attributed to colors, depend on the cultural and physical settings in question. For example, in American and European cultures, there is a preference for blue; but studies show that in eastern Asian cultures, white plays a more prominent role.³⁶ Another example is the argument that in cultures with high UV radiation (such as Middle Eastern cultures), the distinction between blue and green is not as sharp as in cultures with less UV radiation.³⁷ Accordingly, in this book, I also highlight differences in the role played by blue in a variety of Jewish contexts. For example, I discuss the divergent roles played by blue in Ashkenazic and Sephardic Jewry in the early modern period and take note of the different shades of blue denoted by the term *tekhelet* in different periods.

Sources

This book draws on a wide array of sources, most of them textual, such as halakhic works, commentaries, kabbalistic texts (in print and manuscript form), books of customs, personal letters, and the Jewish press. Although this is a book about color, a visual phenomenon, it is not a study of art history. The discussion, rather, encompasses cultural history, social history, and the study of religion (with particular emphasis on kabbalah and Hasidism). I occasionally exploit visual sources when they contribute to the discussion. However, I embrace Rachel Neis's argument that "just as images or the built environment operate in the realms of touch, space, proprioception, scent, and

sound, so too do written words point to more than just the realms of textuality, verballity, orality, or language.”³⁸ Thus, texts referring to color can convey as much meaning as visual artifacts. In fact, in some ways, they are more useful sources through which to understand the meaning, more so than the visual manifestations of color. Indeed, in some cases, images can even mislead. For example, one should hesitate to draw conclusions about the actual colors of Jewish attire from paintings that depict Jews. Quite often, Jews were depicted as symbols or as they “should have” appeared, rather than how they actually dressed. And regarding photos, there is the common limitation of black-and-white images.

Jewish Blues examines a wide array of textual sources that refer to colors, but with the exception of the Conclusion, this book does not deal with the numerous references to colors in literary sources. In the context of the Jewish religion, this book does not deal with Karaite Judaism, but rather focuses on rabbinic Jews, who accepted the authority of the rabbinic sources such as the Mishnah and the Talmuds. Furthermore, the book does not discuss influences of the Jewish color discourse outside the Jewish religion. For example, the influence of the role of blue in Judaism on the important role of blue in Freemasonry is left aside.³⁹ In addition, the book does not address the influence of kabbalistic discourse regarding colors on esoteric and mystical movements outside Judaism, such as the influence of the role of blue in kabbalah on theories of chromotherapy.⁴⁰

Notably, scientific publications on ancient Jewish dyes, especially tekhelet, play a dual role here: they are not only research articles on which the book is based but also primary sources that expose an important aspect of the Orthodox—primarily religious Zionist—discourse on tekhelet in the twentieth and twenty-first centuries. The explicit religious and ideological agenda of many of the tekhelet activists makes it an inseparable element of the history of the color blue. To be sure, this book does not dismiss the Orthodox writing on tekhelet. This discourse and the issues that it raises, such as the relations between science and religion or the relations between Orthodox Judaism and the Zionist Jewish state, form an important chapter in the history of the color blue in modern Judaism.

* * *

The focus on the last two centuries in the second half of the book reflects a major characteristic of the color blue in Judaism: although tekhelet has its

origins in antiquity, it has played a major role in modern times, when it was reinvented by several parties and incorporated into modern historical processes. Rather than telling “the story” of the color blue throughout Jewish history, this book uses the color blue as a vantage point from which to explore broader issues of modern Jewish history and religion—namely, the often controversial approaches in Judaism toward appearance, science, magic, mysticism, and messianism, as well as the modern character of Orthodox Judaism.

“Colour is not an easy matter,” wrote Umberto Eco in “How Culture Conditions the Colours We See.” Indeed, color is complicated by multiple dualities: the aforementioned universalism and particularism; a continuous, infinite range of hues and a discrete, finite set of color terms, the linguistic representations of the hues; and the contradictory emotions and preferences evoked by particular colors. Yet it is this very multiplicity that makes color such a useful prism for the study of cultures. Color, like culture, is complex and ambivalent. *Jewish Blues* is driven by this fascinating ambiguity.

Chapter 1

The Materiality of Blue in Premodern Judaism

The ancient Greeks may not have had a proper color term for blue. This issue was famously addressed in 1858 by William Gladstone, future prime minister of the United Kingdom. In his monumental work *Studies on Homer and the Homeric Age*, Gladstone titled a section “Homer’s Use and Perception of Colour,” in which he noted a silence regarding the color blue. Regarding descriptions of the sky, for example, Gladstone wrote: “Homer had before him the most perfect example of blue. Yet he never once so describes the sky. His sky is starry, or broad, or great, or iron, or copper; but it is never blue.”¹ Gladstone’s observations on the usage of color terms in Homeric literature, in which the example of blue was perhaps the most striking, sparked the “color-naming debate” among anthropologists, linguists, and other scholars. Gladstone suggested that the lack of a color term for blue in ancient Greece indicated that the ancient Greeks could not see blue as a distinct color—that is, they were blue-blind. This proposal was rejected by other scholars in favor of an alternative: the ancient Greeks indeed saw blue, but colors were coded differently in ancient Greek from the way they were coded in modern languages, and the color blue was referenced through comparison to blue-hued phenomena and materials rather than through a specific color term. The debate, which continued through the twentieth century and even today retains some purchase, pivots on the wider question of how different languages assign terms to colors. The discussion of color naming reflects an even broader inquiry about the universalism and relativism of language and culture. According to relativist approaches, color perception is conditioned by language, whereas according to universalist approaches, there is a basic set of

color terms that exist in most languages; these terms refer to colors that are perceived by most human beings. Additional approaches introduce a compromise between these two positions.²

Although this debate has largely treated color as a test case for broader conceptual questions of this kind, it has also drawn attention to the significance of colors and their roles in various societies, particularly the elusive role of the color blue, compared with other colors, in premodern cultures. Sky and sea have made blue a universal component of human experience; however, in contrast to other colors, it is difficult to acquire blue objects and colorants using natural sources.

This chapter presents premodern—ancient and medieval—references in Jewish religious texts to material manifestations of the color blue. It also introduces the basic vocabulary of the color blue in Judaism, including the color terms associated with bluish hues, as well as the objects and phenomena with which these terms are associated. In the background of this chapter are various general studies indicating the rise in recent decades of scholarly research in the colors used in ancient cultures.³ This interest is manifested in the Jewish context as well, with studies conducted from a variety of perspectives, such as studies of linguists and Bible scholars on color terms in ancient Hebrew,⁴ as well as studies of archaeologists and art historians on the original colors of buildings and artifacts in Jewish antiquity.⁵ Let us now delve into the intricate relationship between color, language, and culture, and how the actual hue denoted by a particular color term changes in response to historical and cultural contexts.

Tekhelet in the Hebrew Bible

Tekhelet is the most frequently occurring basic color term in the Pentateuch. In the Hebrew Bible as a whole, it is surpassed in frequency only by the color white. Among the narrower group of names for dyes, *tekhelet* once again predominates.

There are forty-nine references to the word *tekhelet* in the Hebrew Bible. Of these, thirty-nine occur in the context of the Tabernacle in the books of Exodus and Numbers; three appear in the discussion of the Israelite Temple in 2 Chronicles; five refer to luxurious garments; and only one addresses the commandment of *tsitsit*. The vast majority of references to *tekhelet* in the Hebrew Bible, then, occur in the context of the Tabernacle and its liturgy. Exodus 25–40

deals primarily with the construction of the Tabernacle and the production of its artifacts, such as the ceremonial garments of Aaron the priest. In these chapters, tekhelet appears as the primary color used in the external cloths covering the artifacts of the Tabernacle, as well as the color of the priestly robe (*me'il* or *me'il ha-ephod*), the apron (*ephod*), the priestly turban or miter (*mitsnefet*), and the sash (*avnet*). Notably, among these liturgical garments, the priestly robe, *me'il ha-ephod* (Exod. 28:31), was described as entirely tekhelet.

Numbers 4 mentions a “tekhelet cloth” (*beged tekhelet*) as the cover for a series of objects, including the Ark, the table of showbread, the candelabrum, the golden altar, and all the auxiliary vessels. These references to tekhelet appear as part of the description of the role assigned to the Kehat family, a family of the Levite tribe who were charged with carrying the holy objects of the Tabernacle during the Israelites’ wanderings in the desert. The biblical text explicitly states that the requirement to cover the objects is intended to save the lives of the Kehat family members. It seems that the process of covering prevented direct contact between the carriers and the sacred objects that they carried, thereby averting tragic accidents.⁶ This is an early hint at the protective role of tekhelet cloth, to which we will return in the following chapters. This motif will become much more explicit in kabbalistic sources, which are based on the statement that the Ark was covered by a “cloth of pure tekhelet” (*beged kelil tekhelet*) (Num. 4:6).

In addition to its use in the Tabernacle, tekhelet was used to dye luxurious—often royal—garments. For example, in Esther 8:15, “Mordecai left the king’s presence in royal robes of tekhelet and *hur*,⁷ with a magnificent crown of gold and a mantle of fine linen and purple wool. And the city of Shushan rang with joyous cries.” And in the prophet Ezekiel’s portrayal of the kingdom of Israel as a woman seduced by Assyrian idolatry, the Assyrians wore tekhelet: “clothed in tekhelet, governors and prefects, horsemen mounted on steeds—all of them handsome young fellows” (Ezek. 23:6). In these two instances, the word *tekhelet* is a metonym for royalty. The contexts are not liturgical but rather literary, which might also reflect a historical phenomenon: tekhelet-colored clothing may have been the style favored by royals in ancient empires. It is possible that the liturgical context may have been influenced by nonliturgical realities. That is, directives for the Tabernacle may have specified tekhelet and other textile dyes such as *argaman* (purple) because of their general connotations of prestige.

Tekhelet was one of three dyes required for the Israelite liturgy; the other two are *argaman* and *tola’at shani* (scarlet, a dye made of kermes insects; lit.,

“crimson worm”).⁸ The triad *tekhelet*, *argaman*, and *tola‘at shani* usually appears in this order.⁹ This may indicate an order of importance, in which *tekhelet* might have been considered to possess a higher degree of sanctity than *argaman* and *tola‘at shani*.

The terms *tekhelet* and *argaman* are not unique to Hebrew. In Akkadian, the term *takiltu* refers to a “precious blue-purple wool,”¹⁰ whereas the term *argamanu* denotes a red wool.¹¹ Wayne Horowitz has noted that “the cuneiform evidence in Sumerian and Akkadian confirms the existence of dyed wool in different hues of what the ancients considered blue.” However, “the available evidence does not allow us to ascertain the color of the Akkadian *takiltu* wool.”¹² It could have been dark blue, light blue, purple, or a mixture of these colors.

In contrast to the numerous references to dyes and colors in the communal liturgy of the Israelites (in the context of the Tabernacle), the commandment of the *tsitsit* is the one and only law requiring the usage of a certain dye in a personal ritual. The *tekhelet* of the *tsitsit* is introduced only once, in a block of three verses: “Speak to the Israelite people and instruct them to make for themselves fringes on the corners of their garments throughout the ages; let them attach a cord of *tekhelet* to the fringe at each corner. That shall be your fringe; look at it and recall all the commandments of the Lord and observe them, so that you do not follow your heart and eyes in your lustful urge. Thus you shall be reminded to observe all my commandments and to be holy to your God” (Num. 15:38–40).

The commandment of the *tsitsit* requires several actions: preparing and attaching the fringes; gazing at the *tekhelet* thread; and remembering the commandments. The injunction to prepare fringes appears in Deuteronomy as well: “You shall make tassels on the four corners of the garment, with which you cover yourself” (Deut. 22:12). It is only in Numbers that the *tekhelet* cord and the requirement to remember all God’s commandments appear. According to this biblical formulation, the *tsitsit* is first and foremost a mnemonic. As we shall see below and in the chapters that follow, later interpretations of that commandment endowed the *tsitsit* with additional meanings and functions.

Jacob Milgrom has discussed the commandment of the *tsitsit* in several publications,¹³ arguing that it was the *tekhelet* thread that gave the commandment its special character. In the ancient Near East, according to Milgrom, tassels were used as extensions of hems and were a mark of nobility. According to the Hebrew Bible, *tekhelet* was used by priests, and similar

dyes were used in the ancient Near East by kings and noblemen. Hence, in wearing tsitsit with a tekhelet thread, the Jew symbolically elevates himself to the status of both a king and a priest. Milgrom pointed out that the tsitsit with tekhelet must have been made of the otherwise forbidden *sha'atnez*, a mixture of wool and linen. This is because the tekhelet-dyed thread was made of wool, which absorbs the dye, whereas the white threads were made of the more common linen. For the Israelites, *sha'atnez* was allowed only in the garments of the priests—for whom it was even mandatory. However, laypeople were forbidden to wear *sha'atnez*, with the exception of the tsitsit. Therefore, the requirement for tsitsit is actually a requirement for priestly dress. If the commandment of the tsitsit does approximate the priests' ritual garb, then it aims to raise the status of all who wear it.¹⁴ Thus, while wearing tekhelet garments was considered a display of nobility, the tekhelet thread became a unique sign of Jewishness.

Mollusk-Based Blue

The Bible is silent on the subject of the tekhelet dye. Rabbinic literature from the Roman period, however, does provide information about it. The Tosefta, a rabbinic source from the first centuries CE, states:

Tekhelet is not ritually fit unless it is from the dye-stuff of the *hillazon*; if it is not from the *hillazon* it is not fit.¹⁵

In modern Hebrew, the word *hillazon* denotes a snail. However, in ancient rabbinic literature, there were other options. In addition to the *hillazon* that can be seen after rain,¹⁶ which looks like a snail, the following source describes the *hillazon* of tekhelet differently: “This is the description of the *hillazon*: Its body is like unto the sea; its shape is like unto a fish, and it comes up once in seventy years; and with its blood tekhelet is dyed, wherefore it is very dear.”¹⁷

It is doubtful whether a snail can be described as possessing the shape of a fish, but there are marine mollusks with the appearance of a fish. The identification of the *hillazon* has been the subject of intense debate, as we will see in Chapter 4. In any event, these sources indicate that in antiquity, tekhelet would have been prepared from the secretion (termed “blood,” although it was not blood) of a marine mollusk.¹⁸

There is little textual and archaeological evidence about mollusk-based bluish dyes in antiquity that can be identified as tekhelet. However, mollusk-based dyeing was not a Jewish innovation, and we know about the ancient mollusk-based dye known in English as Tyrian purple, in Greek as *porphyra*, and in Latin as *purpura*. Like tekhelet, Tyrian purple was produced from marine mollusks, and we have evidence that this dye was produced and used in time periods and geographical regions close to those of the rabbinic tekhelet. This similarity between tekhelet and Tyrian purple is backed by textual interpretation. The Septuagint, the earliest translation of the Hebrew Bible, translates *tekhelet* as *iakynthos* and *argaman* as *porphyra*.¹⁹ While *iakynthos* has long been an enigma, we know quite a bit about *porphyra*, which is Tyrian purple. Researchers of tekhelet have thus based much of their knowledge and examination about tekhelet on sources about Tyrian purple, which they identify as the biblical *argaman*. I will therefore elaborate on Tyrian purple in order to draw conclusions about tekhelet.

Tyrian purple, a dye prepared from marine mollusks, was considered by the Romans to be the most precious dye.²⁰ This dye was produced long before the Romans, by the Phoenicians,²¹ Egyptians, and Greeks; there is evidence of its manufacture as early as the fifteenth century BCE. Archaeological findings of dyed textiles and pits containing mollusk shells on the northern shores of contemporary Israel and the southern shores of contemporary Lebanon attest to the existence of a dyeing industry.²² There are also texts describing the preparation of Tyrian purple, most famously a text by Pliny the Elder.²³

Tyrian purple was an expensive dye, with thousands of mollusks required for the preparation of a few grams of the dye. It was also difficult to produce: the mollusks were hard to hunt, and the dyeing procedure itself was complicated. This dye was considered of the highest quality, with a steadfast result and a hue described as beautiful. Tyrian purple was a prestigious dye favored by nobles and kings. It was the particular choice of Roman emperors, who were known to wear garments dyed completely with that dye. It seems likely that the difficulty of obtaining the dye in terms of price, rarity, and production was the very factor that made it so prestigious, a symbol of the power and wealth of the ruling class.²⁴ In *Twelve Caesars*, the Roman historian Suetonius recounts that Caligula ordered the execution of a young prince when he noticed in the theater that the prince was attracting attention with the splendor of his purple cloak.²⁵ Suetonius uses the story to showcase Caligula's cruelty, but it also indicates that the wearing of purple garments

by those whose status was not high enough (here, due to age and class) was considered pretentious and even rebellious.

The Roman rulers limited the production, trade, and usage of Tyrian purple to the rulers themselves. There are documents showing particular legislation from the first centuries BCE and CE: Julius Caesar and Augustus limited the use of purple to the elite, whereas Nero forbade any trade in purple except for the needs of the emperor. A decree from 383 CE restricted the production of purple to imperial (rather than private) factories and prohibited the wearing of entirely purple garments by anyone but the emperor. After an imperial dyeing center was established by the Byzantine Empire in the sixth century, the prices of those dyes rose significantly, and the number of those who could afford them decreased. Eventually, the Muslim conquest of Palestine in the seventh century destroyed the mollusk-based dyeing industry.²⁶

Based on Jewish sources from late antiquity, one can speculate that the tekhelet dye had a similar history. As noted above, biblical references to tekhelet present tekhelet as a prestigious color not unlike the Roman purple. Yet the source of prestige was significantly different from that of the Roman purple. "To the ancient Israelites," write Sterman and Taubes Sterman, contemporary tekhelet activists, "these dyes possessed a holiness not by imperial fiat [like the Romans] but because God himself commanded their use in his worship."²⁷ If the tsitsit was a distinctively Jewish dress in the Greco-Roman period,²⁸ and tekhelet was different from purple, then tekhelet was even more distinctively Jewish. The tekhelet dye also disappeared from Jewish ritual and material culture in late antiquity, as indicated in Jewish medieval sources since the ninth century CE.²⁹ The disappearance took place gradually:³⁰ first, the restrictions on the production and trade of mollusk-based dyes in the Roman empire; second, increased restrictions and prices in the Byzantine Empire of the sixth century; third, the Muslim conquest of Palestine in the seventh century and the ensuing destruction of the local dyeing industry.³¹

Thus, the external political context for the disappearance of Tyrian purple influenced tekhelet as well. However, the use of tekhelet in Jewish ritual had begun to dwindle earlier, partly for internal Jewish reasons. First, the need for tekhelet decreased after the destruction of the Jewish Temple in the year 70 CE, as there was no longer a need for Temple artifacts colored tekhelet. Additionally, usage may have decreased at this point because many Jews could not afford to obtain the expensive tekhelet threads for their tsitsit. The high cost of tekhelet might account for the following mishnaic

ruling: “Tekhelet does not impair the validity of the white, and the white does not impair the validity of tekhelet.”³² This statement became the formal basis for the later consensus that performing the tsitsit law with thread of a single color (white or tekhelet) is permissible, for the absence of one color does not invalidate the other, or the performance of the law of tsitsit as a whole. This permission for all-white threads might have been a compromise due to the economic situation following the Bar Kokhba revolt (132–136 CE), when tekhelet prices soared and the newly impoverished people could not afford to buy the expensive dye.³³ But this permission might also imply an objection to using an alternative plant-based blue dye in place of the mollusk-based tekhelet. According to this speculation, the rabbis placed so much weight on the mollusk origin of tekhelet that they preferred not to use colored thread at all. Regardless, we can assume that this permission contributed to the decreased use of tekhelet for tsitsit.

Although the use of mollusk-based tekhelet diminished in the second and third centuries, the knowledge of how to prepare tekhelet had not yet been lost. A Talmudic statement indicates that at least some Jews attempted to continue using tekhelet for another few centuries. It claims that tekhelet was brought to Babylon in the time of Rabbi Aḥai, during the fifth century CE.³⁴ By that time, however, restrictions had been introduced regarding the possession and trade of tekhelet: “A couple [of scholars] have arrived from Rakkath [Tiberias] who had been captured by an eagle [a Roman soldier], while in possession of articles manufactured at Luz. What was it? Tekhelet, yet through divine mercy and their own merits they escaped safely.”³⁵

This source indicates that events beyond internal Jewish culture contributed to the decreased use and eventual disappearance of tekhelet. Tekhelet seems to have been included under the imperial Roman restrictions on the production and trade of Tyrian purple. The reference to Luz may indicate that tekhelet was produced there.³⁶ But Luz was also known in the Talmud as a legendary place where death did not prevail, an attribution that supported later associations between tekhelet and healing.³⁷

Tekhelet did not merely disappear; Jewish sources claim that it was intentionally concealed. The earliest source to make this assertion is the following passage from the tannaitic midrash *Sifre to Deuteronomy*, edited in Palestine during the third century:

Said R. Yossi, “Once I was going from Kezib to Tyre, and I came across an old man.

I said to him: How do you make a living?

He said to me: From the *hillazon*.

I said to him: Is it still around?

He said to me: By heaven! There is a place in the sea, set among mountains, with spiders all about, and no one goes there who doesn't get stung to death by spiders and rots there.

I said: That means that it is hidden away for the righteous in the age to come."³⁸

Rabbi Yossi had thought that the *hillazon* was lost. Upon hearing of its inaccessibility, he concluded that it had been hidden, probably by God. Other sources indicate that the tekhelet dye itself or the knowledge of how to prepare it (and not just the *hillazon*) was concealed,³⁹ but the reason is not given.⁴⁰ The spiders guarding the *hillazon* in the quotation above are like the "fiery ever-turning sword" (Gen. 3:24) that blocks access to the Garden of Eden. Its concealment imparts a certain drama to the tekhelet dye: embedded in a dangerous environment, it is considered a treasure suitable only for the righteous in a future messianic era. Such dramatic tension also appears in the context of the tekhelet dye itself, as we will see in the coming chapters.

In any event, as a result of this cessation in the use of tekhelet, Jews began to use only white threads in their tsitsit. The mishnaic permission to perform the commandment with white threads alone, introduced in the second or third century CE, became much more relevant after the seventh century.

As mentioned above, there is meager archaeological evidence for the use of mollusk-based blue dyes. But recent archeological findings complicate the picture. In 2011, Zvi C. Koren identified the usage of dark blue mollusk-based dye in Masada.⁴¹ In 2013, Naama Sukenik presented three pieces of mollusk-dyed textiles, one with a green-blue hue, and suggested that this dye might be the same one as the ancient tekhelet.⁴² Although most of the mollusk-based dyed textiles found in archaeological excavations were of reddish-purplish hues (arguably, closer to Tyrian purple) and although most of the blue-dyed textiles found were of plant origin, these rare finds indicate that inhabitants of the southern Levant used mollusks to prepare not only purple but also bluish hues (for examples of shells and colored textiles, see Figures 1–5 in the color plates). Yet no blue mollusk-dyed tsitsit have appeared in archaeological findings of the southern Levant. Of course, it is unlikely

that single mollusk-dyed threads would survive. Still, this lacuna is a source of frustration for devotees of tekhelet.

Plant-Based Blue

Few archaeological findings attest to mollusk-based blue dyeing; in fact, most of the blue-dyed textiles found in the southern Levant have been of plant origin. Back in the 1950s and 1960s, dyed textiles found in the Judean desert turned out to be plant-based, despite hopes to the contrary.⁴³ In 2016, Naama Sukenik and others discovered red- and blue-dyed textile fragments of organic origin from the thirteenth to tenth centuries BCE in Timna (southern Israel). Although these are among the earliest findings of blue-dyed textiles of organic origin in this area, the sources were plant-based dyes, and the people who used them might not have been Jews at all.

The dyes used for these pieces of fabric seem to have been made either from woad (*Isatis tinctoria*) or indigo (*Indigofera tinctoria*).⁴⁴ Woad had been known in the southern Levant since ancient times, whereas indigo came from India only after the Muslim conquest. However, it is also possible that the blue dye was extracted from other species of indigo, such as *Indigofera articulata* or *Indigofera coerulea*, that were found in excavations from the Roman period.⁴⁵

The Roman world was familiar with numerous varieties of purple; not all of them were based on the pure secretion of mollusks. The high price of pure dyes can therefore be understood in the context of the proliferation of mixed dyes. Attempts to produce cheaper dyes led to instances of fraud.⁴⁶ Upon seeing a dyed textile, it was difficult to identify its exact components. That reality might have contributed to the aforementioned restrictions on private dye houses introduced by the Romans.

Dye fraud was also a possibility in the case of blue; mollusk-based tekhelet was sometimes replaced with a plant-based blue dye. A discussion in the Babylonian Talmud about undetectable deceits is illuminating here.⁴⁷ An example of such a case, in which God himself would take revenge on the cheater, is to put salt on a weight meter so that the scale shows a higher weight. Another example is one who puts *kala ilan* on his garment and claims that it is tekhelet. The Talmud does not tell us what exactly this *kala ilan* is, but we can conclude that it looks identical to tekhelet. It is worth mentioning that the Talmud provides a chemical test to distinguish between these two bluish dyes.⁴⁸

Post-Talmudic sources identify *kala ilan* as the plant-based indigo dye. The book *ʿArukh*, an eleventh-century authoritative lexicon for the Talmud and midrash, seems to be the first to identify *kala ilan* as *indeko*, which probably means “indigo.”⁴⁹ That identification is commonly accepted and can even be extended to all plants from which the indigo dye, indigotin, is produced.

I suggest that *kala ilan* plays more than one role in the history of the color blue in Judaism. In addition to being a symbol of inauthenticity and even deceit, I will show that kabbalistic texts endowed tekhelet and *kala ilan* with polarized mythical roles: while tekhelet is a symbol of the Godhead, *kala ilan* represents the forces of evil or demons.⁵⁰

Importantly, ritualistic tekhelet had to be made of mollusks (according to the aforementioned rabbinic requirement), but the usage of plant-based blue dyes for purposes other than ritualistic tekhelet was not forbidden; these dyes were simply not considered tekhelet. Blue-dyed textiles, like other color-dyed textiles, were called *bigdey tsivʿonin* (lit., “colored clothes”)⁵¹ and regarded as normal dress, at least among Babylonian Jews.⁵² Indeed, colorful textiles were sometimes considered immodest because it was believed that when worn by women, they attracted the attention of men.⁵³ However, colored clothes were allowed and even useful in everyday attire. For example, they were effective in obscuring menstrual stains.⁵⁴ Moreover, they were allowed in ritualistic items such as prayer shawls, as long as they were not trying to misrepresent or replace tekhelet.

It is even possible that indigo, or another sort of plant-based blue dye, was used in the Jewish Temple. While the requirement of the *hillazon* in the context of the rabbinically mandated tsitsit was not debated, it remained a point of contention as to whether *hillazon*-based dye was also obligatory in the context of the Temple. Maimonides, for example, has been interpreted as requiring tekhelet from *hillazon* for the tsitsit but not necessarily for the blue cloths used in the Temple. Following that line of thinking, indigo may have been a permissible form of tekhelet for use in the Temple of Jerusalem.⁵⁵

Additionally, the reservations regarding the use of indigo in the specific ritualistic context of tsitsit do not imply that Jews distanced themselves from indigo dye in general. On the contrary, there is evidence that Jews were highly involved in indigo dyeing and trade in the medieval and early modern periods. During the seventh to thirteenth centuries, many of the indigo merchants of the Arab world were Jews.⁵⁶ Moreover, during the medieval period, indigo dyeing may have been considered a Jewish occupation in most of the Arab lands (except Yemen).⁵⁷ Jews were willing to pay considerable taxes to keep

their monopoly on indigo dyeing. They also enjoyed a high reputation as dyers.⁵⁸

In addition to producing and distributing plant-based blue dyes, Jews also bought and used textiles made with them, as the color blue became increasingly well regarded among Jews. The popularity of blue fabrics among Jews who lived between the tenth and the thirteenth centuries is attested to in documents found in the Cairo Geniza.⁵⁹ Geniza scholars have noted that medieval people had a passion for brilliant and variegated colors, a passion in tandem with a flourishing dye industry. Scholars have gleaned medieval color preferences from orders for textiles by merchants, as well as from trousseau lists that detail the garments and home furnishings gifted to brides on their wedding days. Although such lists are not as meticulous as textile orders in detailing specific shades, it is still possible to deduce the preferred basic colors by counting the number of times that they appear. Among textile colors, blue played a prominent role. It seems that white and its shades were the most popular, immediately followed by blue.⁶⁰

Blue Minerals, Stones, and Gems

Stones are prominent manifestations of color. The colors of stones, like those of textiles, are also imputed with symbolism and used to express identity and value. Stones were sometimes pulverized to make pigments for paintings and makeup; at other times, they remained unground and were used as jewelry. Since antiquity, stones were attributed magical properties.⁶¹

Lapis lazuli, which appears in numerous ancient sources, was probably the most famous blue stone of antiquity.⁶² But there were other popular blue stones, such as turquoise.⁶³ In the Jewish context, a number of stones were associated with blue.⁶⁴ The high priest's breastplate was a central textual reservoir of gemstones.⁶⁵ *Tarshish*, for example, was a stone associated with blue. Rabbi David Kimḥi (1160–1235) associated *tarshish* with the turquoise stone, writing that “its hue resembles the hue of tekhelet.”⁶⁶

Of all the stones, in Jewish texts the sapphire has been most frequently associated with the color blue. The word “sapphire” (*sappir*) appears in the Hebrew Bible eleven times. Its basic denotation is a gemstone, as it is listed as one of the twelve stones of the priestly breastplate introduced in Exodus (28:18, 39:11). In general, the exact identification of biblical gemstones is unclear. In antiquity, the term “sapphire” and its parallels in Greek and Ara-

maic (such as *sapphyrus* or *sappirion*) probably referred to lapis lazuli and its major mineral component lazurite. However, in later periods, several medieval and early modern sources associated sapphire with a different blue stone—blue corundum.⁶⁷ In the twelfth-century midrash *Numbers Rabba*, it is written that the gemstone of the tribe of Issachar is sapphire and that its “map” (perhaps a flag or another emblem) is colored “black resembling blue” (*shaḥor domeh le-kaḥol*), which seems to refer to a dark blue hue.

In addition to its use to denote a gemstone, the term “sapphire” is mentioned more figuratively to convey the appearance of other phenomena. Of relevance to the discussion of the color blue is the likening of divine visions to sapphire. In Ezekiel’s visions, the image of a sapphire stone is used to describe an appearance resembling a throne (Ezek. 1:26, 10:1). These verses are relevant because the appearance of the sapphire described in them is used in later sources to associate the tekhelet dye with celestial entities. Another verse used to connect the earthly and the divine through the sapphire stone is the description of the vision of God by the Israelites in the desert: “and they saw the God of Israel: under his feet there was the likeness of a pavement of sapphire, like the very sky for purity” (Exod. 24:10). In the Hebrew original, “sapphire” is mentioned as *livnat ha-sappir*, loosely translated as “whiteness of sapphire.”

The expression “whiteness of sapphire” raises the question of the hue of sapphire, and to what degree it can be understood as blue. This point was debated among medieval writers. Rabbi David Kimḥi noted that Sa’adia Gaon understands sapphire as white, whereas Avraham Ibn Ezra understands it as red.⁶⁸ The reference to red might indicate that the sapphire stone was also identified with the red corundum. Rabbi Baḥye ben Asher (1255–1340) rejected Sa’adia’s association between sapphire and white and wrote that the term *livnat ha-sappir* refers to a reflection of all colors.⁶⁹ Rabbi Baḥye was not alone; other medieval authors understood sapphire as transparent or crystalline, rather than white.⁷⁰ Maimonides, for example, wrote that the term *livnat* does not denote a white hue but a glittering character; the glittering of sapphire is unlike that of a mirror because it enables one to see the objects behind it.⁷¹

However, in Rabbi Baḥye’s discussion of the qualities of the stones of the breastplate, he associated tekhelet with both *tarshish* and sapphire, perhaps hinting that sapphire is blue like *tarshish*. In his discussion of sapphire, he characterized sapphire: “Issachar on sapphire . . . having the color of tekhelet. . . . That color of tekhelet is not a color of pride like the color of redness or the color

of greenness [*yarkut*/ירקוֹת] called *green* [גִּי'וֹן], both [red and green] are colors of pride; *tekhelet* is rather a color of modesty and humility, appropriate for young, appropriate for the old. . . . The quality of that stone [sapphire] is that it is beneficial for the light of the eyes, and that is why it is put on the eyes.”⁷² Although the hue of sapphire, according to Rabbi Baḥye, is not entirely clear, the list of beneficial qualities of the sapphire stone is of interest: for instance, sapphire is put on the eyes, perhaps as a pigment of makeup, or perhaps as is, in order to “lighten them.” Perhaps he meant that applying that sort of makeup improves one’s sight. Baḥye’s discussion of the sapphire stone highlights interesting qualities of the color *tekhelet*, explicitly associated with that stone. Of particular interest is the ethical quality of humility, to which we will return later.

In the Middle Ages, interest in gemstones increased. Symbolism and magical powers were associated with particular gemstones, and numerous lapidary texts circulated. This literary genre originated in ancient Greece and Rome and gained popularity in medieval western Europe. In his popular work on gemstones, Marbodius of Rennes (c. 1034–1123) wrote that the sapphire stone had curative properties for eye ailments. This property of sapphire is mentioned in the Hebrew lapidaries influenced by his work,⁷³ especially by Berakhyyah ben Natronai’s *Ko’ah ha-avanim* (lit., “power of the stones”).⁷⁴ Berakhyyah ben Natronai also attributed to sapphire other protective properties known only to specialists.⁷⁵ Perhaps other medieval Jewish scholars, such as Rabbi Baḥye, were also influenced by non-Jewish views on the protective value of the sapphire stone. Be the route of influence as it may, in the Middle Ages, Jews clearly believed that the sapphire stone had beneficial qualities for the eyes.

Minerals were also used for cosmetics. The major biblical terms for the bluish pigments associated with substances used for cosmetics since antiquity are *koḥal/kaḥal* and *pukh*. Possibly, the ancient Israelites did not differentiate between the materials denoted by these terms. Both words are often translated as “kohl,” which maintains the root *k-ḥ-l*, from which the nouns *koḥal/kaḥal* are derived, as well as the verb *likheḥol*, denoting the action of putting that substance on the eyes, which is mentioned only once in the Hebrew Bible (Ezek. 23:40).

Kohl is a pigment used to color parts of the body, particularly the eyelids. Early traces of cosmetic kohl have been found in ancient Egypt. The term “kohl,” which originated in Arabic or Hebrew, and its variations in other languages (such as *sormeh* in Persian) denoted materials of various colors,

ranging between green, blue, gray, and black, which were often made from galena (PbS) or stibnite (Sb₂S₃). Although kohl was often associated in antiquity with blackish hues, dark bluish variants also exist.⁷⁶ In later periods, as early as the Middle Ages, it was more commonly understood as blue. In modern Hebrew, as has already been noted, *kaḥol* became a color term denoting dark blue, as opposed to *tekhelet*, which refers to light blue.

Kohl was used in the Mediterranean region for the purpose of self-adornment but also as a medicine, particularly for ocular ailments. The color was believed to cure blindness and, more generally, to improve one's vision. Additionally, it was considered effective against the evil eye. Medieval rabbis wrote that men should not use kohl for aesthetic purposes,⁷⁷ in accordance with the biblical prohibition against men wearing women's garments (Deut. 22:5). However, the use of kohl for medicinal purposes was not prohibited.

The Bible mentions *pukh* as a cosmetic product: "Jehu went on to Jezebel. When Jezebel heard of it, she painted her eyes with *pukh* and dressed her hair, and she looked out of the window" (2 Kings 9:30). The word *pukh* also denoted a stone, perhaps the stone from which *pukh* powder was made. Some commentators understood the *pukh* stone to be synonymous with the precious stone *nofekh*. Interpretations of the *nofekh* gemstones vary. While most of them are associated with the red carbuncle, some commentators understood the term *nofekh* to mean a green or blue stone.⁷⁸ However, the word *pukh* is indirectly associated with the color blue through the sapphire by the following verse (Isa. 54:11): "I will lay *pukh* as your building stones, and make your foundations of sapphires." Although the Hebrew original *be-pukh* (with *pukh*) has been translated in various ways, it is clearly in some way parallel to sapphire. Nonetheless, it is unclear whether this is merely a parallel between two gemstones, or whether it indicates a similarity in color.⁷⁹ Notably, this verse imparts to the color blue an eschatological significance, which will be discussed further in Chapter 3.

Was Tekhelet Blue? A Few Notes on the Similarity of Blue, Green, and Black

The Bible does not provide clues about the appearance of *tekhelet*—unlike, for instance, white, which is likened to snow.⁸⁰ And, as we noted above, the Mesopotamian sources do not advance our knowledge because the word *takiltu* does not indicate a definite hue but rather various shades of blue and

purple. The association between tekhelet and blue is primarily derived from rabbinic sources in later periods of antiquity.

Of these sources, the best known is the following statement (which has more than one variation), attributed to Rabbi Meir, a leading rabbi of the second century:

Rabbi Meir says: Why has tekhelet been singled out from all other colors? Because tekhelet is like unto the sea and the sea is like unto the sky and the sky is like unto the sapphire and the sapphire is like unto the Throne of Glory, for it is written (Exod. 24:10): “and they saw the God of Israel: under his feet there was the likeness of a pavement of sapphire, like the very sky for purity,” and it is written (Ezek. 1:26) “the semblance of a throne, in appearance like sapphire.”⁸¹

This text is quoted by religious and academic scholars for various purposes, such as to argue that tekhelet is the closest of all colors to the divine; to advocate a practice or a process through which the worshiper can direct himself from his tsitsit to God; and to elaborate on the vision of the Throne of Glory. I will return to these topics in Chapter 2. Here I would like to read the text as support for the argument that tekhelet is blue, as it is similar to natural bluish phenomena such as the sea, the sky, and the sapphire stone.

While the association between tekhelet and blue seems obvious and was accepted by several authors in premodern times,⁸² other versions of the statement provide another option. The version of this text in the Palestinian Talmud hints at the color green: “Tekhelet is like the sea. And the sea resembles the grasses. And the grass resembles the firmament. And the firmament resembles the throne of glory. And the throne resembles the sapphire.”⁸³ Let us note that here, unlike in other versions of Rabbi Meir’s statement, “grass” is inserted in the chain of phenomena between the sea and the firmament. This version shows the difficulty in any attempt to draw conclusions from Rabbi Meir’s comparisons regarding the hue of tekhelet. The word *tekhelet* can refer to various shades, sometimes a bluish hue, sometimes green. Even within the bluish range, it can denote a number of hues: just as tekhelet can be the color of a daylight sky, it can also be the color of the sky at various times of day when the shade of the sky changes. Moreover, we should remember that comparison does not imply identity. The likening of tekhelet to the sea does not imply that both have the *same* color, but rather a *similar* color. Finally, as mentioned in the Introduction, it can be difficult to distinguish between

blue and green. There are hues that some people will call blue and some will call green, while others will use a medial term, such as turquoise.

The different versions of Rabbi Meir's statement, which raise the question of the hue of *tekhelet*, also invite a broader discussion of the associations between the color blue and other color terms (not just *tekhelet*) that can be associated with blue, such as green, black, and purple. In particular, exploring the various hues associated with the basic color term *yarok* might shed light on the color blue. In addition to whether the color term *tekhelet* should be understood as having a greenish hue, we should also ask whether *yarok* denotes a bluish hue. Alternatively, perhaps the similarity between blue and green prevented any possibility of clearly distinguishing between colors. Were such close similarities characteristic of perceptions in antiquity? And if *tekhelet* can denote the color of a darker sky, what is the difference between *tekhelet* and the color term *shahor*, black? I will address these and other questions by discussing a few examples in ancient rabbinic literature and their interpretations by medieval rabbis.

In contemporary Hebrew, *yarok* refers to green; in antiquity, this term denoted a wider range of colors, including yellowish hues. Under the entry *yarok*, the Israeli *Talmudic Encyclopedia* states that that color term is associated in halakhic literature with green, yellow, or blue.⁸⁴ The question of the difference between blue and green arises in a mishnaic discussion on the timing of the morning prayers, the recitation of the Shema:⁸⁵ "From what time do they recite the Shema in the morning? From the hour that one can distinguish between *tekhelet* and white. R. Eliezer says, between *tekhelet* and *karti* [leek]. And one must complete it before sunrise."⁸⁶

In this text, the term *tekhelet* can denote an abstract color not associated with a particular natural or cultural phenomenon. It is more likely, however, that the author was referring to the *tekhelet* thread of the *tsitsit*: one may recite the Shema if he can distinguish between his *tekhelet* thread and other colors. An anonymous opinion, attributed to a prevalent opinion among the rabbis, asserts that one should be able to distinguish between *tekhelet* and white. Rabbi Eliezer dissents, asserting that the differentiation should be between *tekhelet* and *karti*, the color of leek, which, in rabbinic literature, denotes green.⁸⁷

If we assume that the hue of *tekhelet* is more similar to green than to white (this is not obvious because *tekhelet* can be understood as a very light blue, similar to white), then it is easy to distinguish between *tekhelet* and white in any light, whereas the differentiation between *tekhelet* and green is more difficult; one needs a certain amount of light to be able to distinguish

between them. According to that interpretation, the anonymous opinion (distinguishing between tekhelet and white) is more lenient: it allows an earlier start time, when the light is limited but one is capable of differentiating between tekhelet and white. Rabbi Eliezer, for his part, asserts that the time window for reciting the Shema is narrower: one cannot start too early because one would then not be able to distinguish between tekhelet and leek green. One way or another, we can assume that according to this mishnaic source, tekhelet and green are different colors, although perhaps difficult to distinguish.⁸⁸

The Mishnah's implication that tekhelet is similar to green, particularly leek, resulted in further associations between blue and green. It seems that the explicit association between *yarok* and blue was introduced by medieval commentators, who based themselves on the aforementioned similarity between tekhelet and greenish hues. In his medieval commentary to the text of the Mishnah cited above, the influential commentator Rashi (1040?–1105) wrote that tekhelet is green—*yarok*, similar to the color of leek—and that it is the color of the face of a sick person.⁸⁹ In Rashi's commentary to the Bible, the term *tekhelet* does not denote an abstract color term but rather a dyed wool used in liturgical clothing or threads made of that sort of wool.⁹⁰ In his commentary to the commandment of *tsitsit* (Num. 15:38), he wrote that tekhelet is a green color of the *hillazon*, without specifying whether it is the color of the *hillazon* itself or of its secretion. However, in his commentary to verses describing the dyes of the Tabernacle (Exod. 25:4), he wrote more specifically that tekhelet is a wool colored by the green “blood” of the *hillazon*.

Some Orthodox Jews claim that although Rashi wrote *yarok*, he actually meant a wide range of hues that included blue. Others try to harmonize among the options. Rabbi Isaac Herzog, for example, wrote that Rashi, who lived in northern France, “would seem to have derived his idea of the sea colour from the British Channel or from the North Sea, which as we know are of a green tint, here and there playing into bluish. Hence, so at least it seems to me, he came to regard tekhelet as essentially a green colour playing into blue.”⁹¹ Like other sources, these harmonizing interpretations are based on the similarity between blue and green.

The possibility that Rashi did understand tekhelet as green is supported by the fact that he mentioned the term *kaḥol* (blue) without mentioning tekhelet in the context of the dietary laws—specifically, in a discussion about the permissible colors of an animal lung in order for it to be considered ko-

sher, a food that conforms to Jewish dietary laws. Rabba, a prominent Talmudic sage, gave examples from the domain of colorants. He stated that if the color of the lung is like *kohla*, it is kosher; and if it is like ink, it is not. It seems that he meant that the kosher hue is blue, even dark blue, whereas a black hue is not kosher. In his commentary to Rabba's statement, Rashi was more explicit. Rashi identified the word *kohla* (kohl) as *tseva kahol* (a blue color), and translated it to French as *lazur*, a word originating from lapis lazuli, the blue stone discussed above.⁹² He even explicitly stated that *kohla* is neither *yarok* (green or yellow) nor *shahor* (black). Hence, Rashi identified the color term *kahol* with blue, distinguishing it from the colors green and black, as well as the term *tekhelet*. Significantly, the translation to French vernacular adds clarity to Rashi's interpretation because he translates the word to a term denoting a well-known hue.

While Rashi was quite decisive in identifying *tekhelet* with green, other medieval Ashkenazi rabbis were less definitive. In an interpretation of a Talmudic discussion about the color of an acceptable (kosher) citron for the Jewish holiday of the Feast of Tabernacles, a Tosafist (member of a school of rabbis by that name) begins by identifying *yarok* with leek and also with the color term *vert*, the French color term for green. Following the mishnaic assertion that *tekhelet* is similar to green, it seems that the Tosafist agrees with Rashi, but he then associates *tekhelet*'s hue with indigo and seems to remain puzzled.⁹³ Another example is a medieval interpretation of rabbinic attempts to distinguish between various shades of red in order to reach conclusions about women's purity after menstruation.⁹⁴ The German rabbi Mordechai ben Hillel (1250–1298) identified the various hues using color terms from his own vernacular, which, in his case, was Old Yiddish or medieval German. After mentioning various Talmudic references to color, including Rabbi Meir's, he wrote that "these three appearances [of blood]—blue [*bla* or *blau*, בל"א], yellow [*gel*, גל], green [*grin*, גרין]—all are included under the definition of *yarok*," and none of them falls into the category of ritual impurity.⁹⁵ We can see from this example that Ashkenazi rabbis grappled with the associations between color terms and their denotations. The border between blue and green was indeed difficult to draw.

In contrast to the interpretations of *tekhelet* as green in Rashi's commentaries to the Bible and Talmud, Rashi gives space to a different opinion by the eleventh-century Provençal commentator Moshe ha-Darshan.⁹⁶ Moshe ha-Darshan notes that the color of *tekhelet* is "similar to the color of the blackening evening sky," which seems to be black or dark blue.⁹⁷ Moshe ha-Darshan

based his opinion on an ancient association between tekhelet and death, which will be discussed in Chapter 2.⁹⁸

The twelfth-century Jewish-Spanish scholar Avraham Ibn Ezra (1089–1167) wrote more than one commentary to the Pentateuch. In his earlier short commentary, he wrote on the first occurrence of tekhelet in the Bible, namely Exod. 25:4, that tekhelet has a hue close to black, which somewhat resembles the sky.⁹⁹ He then suggested that tekhelet has that name because it is the end—*takhlit*/תכלית—of all colors, just as white is the beginning; there is nothing beyond it. However, in Ibn Ezra's later, longer commentary on the same verse, he wrote: "Yefet [Yefet ben Ali, the Karaite commentator] says that tekhelet is a black-like color. Black is the end of all colors [*takhlit kol ha-tseva'im*], as all colors turn black, and no human hands can change black. However, we will rely on the sages of the Talmud, who said that tekhelet is green wool."¹⁰⁰

Here Ibn Ezra presents two possibilities for the hue and material of tekhelet: the color black and green wool. It seems that in his short commentary, he relied upon Yefet's interpretation of tekhelet as black (without mentioning his name) but rejected this interpretation in his longer commentary, in which he explicitly preferred the green wool alternative.¹⁰¹ Like Rashi's commentary (with which Ibn Ezra was familiar), Ibn Ezra's commentaries also indicate uncertainty regarding the hue of tekhelet. The interpretation of tekhelet as black is based on the wordplay between tekhelet (תכלת) and *takhlit* (תכלית). In modern Hebrew, *takhlit* denotes a purpose; but in medieval times, it also denoted an end, in the sense of finality.¹⁰² Black is described as a final color because "all colors turn black," which seems to refer to the fact that black absorbs all hues. The presence of the letters of the word *kol* (כל), "all," in *tekhelet* (תכלת) also contributed to the characterization of tekhelet as an inclusive color with a blackish hue.

The blackish option is further supported by references to tekhelet in medieval Sephardic Hebrew poetry. Moshe Ibn Ezra (c. 1055–1140), describing a handsome child, wrote that his hair was like tekhelet. According to Muslim aesthetic ideals of the time, black hair was considered a handsome hair color for boys.¹⁰³ Another famous source is a poem by Yehudah Halevi (approximately 1075–1141)—"Ha-tirdof na'arut" (lit., "Will you chase juvenile pastimes")—in which he described the night sky as tekhelet. Thus, there is more than a single source from the eleventh and twelfth centuries identifying tekhelet with black or a dark midnight blue.¹⁰⁴

The association of tekhelet with black is similar to its association with very dark blue by the Spanish-born Moses Maimonides (1135–1204). This

seems odd because Maimonides is often presented as an apparently clear example of the association between tekhelet and light blue, based on the following quotation: “Wherever the Torah mentions tekhelet, it refers to wool dyed bluish; this is the color of the clear sky. Fringes dyed tekhelet must be prepared according to the accepted process, such that its beauty is permanent and does not fade. Anything not dyed according to that process is unfit for fringes, even if it is the color of the sky, such as things dyed with woad or other darkening agents; such are unfit for fringes.”¹⁰⁵

Like Rashi, Maimonides identifies tekhelet as a dyed wool rather than a hue. The translation of the dye’s hue is “bluish”; but in the Hebrew original, the term is *ke-patukh she-ba-kohal* (כפתוך שבכחול), a phrase that should more precisely be translated as “a mixture of kohl.” The association of tekhelet with “the color of the clear sky” seems to indicate that tekhelet is light blue. However, Zohar Amar studied the various terms and characteristics given to tekhelet in the entire Maimonidean oeuvre and concluded that the hue of tekhelet, according to Maimonides, was blackish gray or very dark blue.¹⁰⁶ In addition to the hue, Maimonides requires that the dye be steadfast and not fade after a few washes. This requirement later became a central point of debate about the authenticity of a candidate for a tekhelet dye.¹⁰⁷

In addition to blue, green, and black, there was also an opinion that characterized tekhelet as purple. The Ashkenazi rabbi Eliezer ben Yoel Halevi (c. 1140–1225; known as the Ra’avyah) implicitly associated tekhelet with purpura, which might indicate that he understood it as purple.¹⁰⁸

If tekhelet has a single definite hue, blue seems to be only one possibility for that hue; other possibilities include hues in the range between black and green, as well as purple. This diversity of opinion is not limited to medieval times, but—as we will see—reappeared in the modern period, where it had practical implications.¹⁰⁹

Conclusion

In 1969, Brent Berlin and Paul Kay published a groundbreaking study, entitled *Basic Color Terms: Their Universality and Development*.¹¹⁰ They argue that most known languages have eleven “basic color terms” (BCTs) that denote more or less the same colors and that these BCTs develop in a universal, seven-stage process of specification. In the first stage, there are two color terms: black and white. The “cold” colors—blue, black, and gray—are part

of the term for black, while the “warm” colors—red, yellow, and brown—are part of the term for white. The second stage is the addition of red, and then a color term denoting green and yellow together, followed by a separation of the terms for green and yellow. The appearance of a dedicated color term for blue comes in the fifth stage; brown in the sixth stage; and color terms for purple, orange, pink, and gray in the final, seventh stage. Berlin and Kay’s theory can be understood as yet another round in the aforementioned “color-naming debate,” in which color terms in various languages became a test case for the relativity or universality of language. Applicable to numerous languages, the theory supports the universalistic argument, while still taking into account that every language has its own history and pace of specification of color terms.

In our context, some linguists argue that Berlin and Kay’s theory conforms with the development of the Hebrew language,¹¹¹ while others are more skeptical.¹¹² The current chapter indicates that the treatment of the color blue does align with this theory, albeit with certain exceptions. In the language of the Bible, Mishnah, and Talmuds, there was no BCT for blue; the color blue was described using the color term *yarok*, which also denoted green and yellow, or references to objects with the color blue, such as the tekhelet dye or the sapphire gemstone. Thus, the Hebrew language of antiquity reflects the third stage of Berlin and Kay’s theory, or perhaps the transition toward the fourth stage, as *yarok* began to split between yellow and green. In medieval times, one already finds the term “tseva kaḥol.” The associations and range of opinions between blue, green, and black reflect the fourth stage.

Regarding terms for blue, things seem more complex. While the color blue was referred to by comparison to materials that are colored blue, such as the lapis lazuli stone or tekhelet dye, this chapter has shown that the terms usually associated with blue do not necessarily denote blue, or at least not blue alone. For the term *tekhelet*, there were various options regarding the hue: it could have been dark blue, light blue, green, purple, or any shade in the range of those colors. Additionally, there was more than a single understanding for the hue denoted by the term “sapphire,” which was understood not only as blue but also as white, red, and even transparent.

Ancient texts did not concern themselves with defining the hue of tekhelet. Medieval commentators, however, did discuss the issue—with some puzzlement. Such interest might be related to the fact that, by the Middle Ages, the mollusk-based tekhelet had completely disappeared from Jewish material culture and had become a virtual or imaginary color. However, the range of options for the hue of tekhelet may also have reflected the situation in antiq-

uity, where the hue might have included more shades than moderns believe. It may be a modern halakhic mind-set, not an ancient one, that seeks to define tekhelet as a specific shade of blue for the sake of determining Jewish law.

Notwithstanding the various possibilities that they entertained for the hue of tekhelet, medieval commentators tended to highlight the darker shades of tekhelet and its similarity to black. This is particularly true of rabbis from Spain but also of the Ashkenazi Rashi. Moreover, contrary to an argument that tekhelet became a BCT only in the nineteenth century,¹¹³ it is very prominent in medieval kabbalah, as we will see in Chapter 2. Hence, in Berlin and Kay's model, Hebrew reached its fifth stage of development as early as the thirteenth century, if not earlier.

The complex history of the Hebrew terms for blue perplexed even modern scholars of the Hebrew language. In 1887, the future Hebrew scholar David Yellin (1864–1941) announced in the newspaper *Hazewi* that the scholar Zeev Yaavetz (his relative) intended to renew color terms for blue and yellow. Yellin and Yaavetz wanted to introduce the term *kaḥol* for blue, but the editor, Eliezer Ben-Yehuda, commented that Rashi had already done that.¹¹⁴

These developments of Hebrew color terms draw our attention to another phenomenon: while the Mishnah and both Talmuds refer to color terms solely as attributes of material phenomena, such as the sky, plants, and blood, medieval texts refer to colors more systematically as abstract entities. Chapter 2 will elaborate on the significant role played by tekhelet as a color term, as well as its place in the broader system of colors and color terms.

Chapter 2

Tekhelet in Medieval Jewish Mysticism

Cosmology, Theology, and Vision

Let us return to the famous characterization of tekhelet by Rabbi Meir quoted in Chapter 1: “Rabbi Meir says: Why has tekhelet been singled out from all other colors? Because tekhelet is like unto the sea and the sea is like unto the sky and the sky is like unto the sapphire and the sapphire is like unto the Throne of Glory, for it is written (Exod. 24:10): ‘and they saw the God of Israel; under his feet there was the likeness of a pavement of sapphire, like the very sky of purity,’ and it is written (Ezek. 1:26) ‘the semblance of a throne, in appearance like sapphire.’”¹

We have seen the use of this statement as a source for the determination of the hue of the earthly tekhelet.² But there is more in this text than just a hint as to the hue of tekhelet. The likening of earthly and divine phenomena creates a symbolic linkage between the color tekhelet and divine entities. Moreover, the specific sequence of comparison—from the tsitsit to the sea, the sky, and, ultimately, the Throne of Glory—paves the way for the worshiper from earthly to divine tekhelet. Hence, tekhelet is imbued with the potential to induce elevation toward a mystical experience.

The current chapter deals with the divine aspects of blue, primarily in the context of medieval Jewish mysticism.³ The references to colors in Jewish mystical texts, particularly kabbalah, are more elaborate than those featured in other genres, such as biblical commentaries or halakhic works.⁴ The vocabulary of color affords the mystic a language that is both concrete and abstract, and it facilitates visual descriptions of the Godhead without being overly anthropomorphic. Hence, this chapter discusses only a limited selection of the many references to color in Jewish mystical texts.

I will focus on tekhelet rather than other color terms associated with blue because tekhelet, more than any other color, is described in mystical texts as inviting human contemplation. After some general comments about the role of colors in Jewish medieval texts, I will focus on three roles of tekhelet found in kabbalistic texts: the role of tekhelet in the creation of the universe, the role of tekhelet within the system of divine emanations (the *sefirot*), and the role of tekhelet as an object of visual contemplation to aid in connecting with the divine.

Of particular importance is the question of what exactly tekhelet is in the divine realm, and to what extent tekhelet serves to reveal or conceal. As a visual phenomenon, color can accomplish both these actions. Thus, when tekhelet is presented as the color of the divine entity itself, it reveals something about that entity. At the same time, tekhelet can be the color of something that covers the divine entity, or of something that separates that entity from the human eye. In that case, although tekhelet itself is visible, it actually conceals the divine entity.

A Few Notes on References to Colors in Medieval Judaism

The medieval references to tekhelet in Jewish texts should be understood as part of a growing discourse on color in the Jewish culture of that period. As is typical in medieval Jewish culture, this discourse is based on previous Jewish references to color, as well as on Greek and Arab scientific and philosophical knowledge. Greek thought addressed color theory as early as the pre-Socratic philosophers, followed by the famous theories of Plato and Aristotle.⁵ Arab thinkers read, translated, and adapted the Greek understanding of color while providing their own original contributions.⁶ Although the systematization of colors had existed among the Greeks for centuries, it entered Jewish discourse only in the Middle Ages, mediated by the Arab thinkers.

In his *Kitab al-amanat* (Book of beliefs and opinions), the medieval Jewish thinker Sa'adia Gaon (882–942) introduced a list of natural colors, perhaps for the first time in Jewish sources: “There are seven foundations of natural colors: whiteness and blackness, and greenness, and yellowness, and redness, and the color of the heavens, and the color of the earth.”⁷ Sa'adia does not provide a source for this statement, but he may have been influenced on this point by contemporaneous Muslim thinkers such as the Ikhwān

al-Ṣafā, a secret order of Neoplatonic philosophers in ninth- or tenth-century Iraq that listed seven basic colors almost identical to Sa'adia's.⁸ Later medieval authors referred to Sa'adia's color system as an authoritative Jewish source on colors.⁹

Sa'adia's list of colors is an early (if not the first) example of the systematization of color in Jewish sources, as well as an unprecedented conceptualization of color. It seems that in antiquity, color had not yet been presented systematically in Jewish texts, and there were no discussions on the nature of color itself. Ancient Greek culture, in contrast, featured theories of vision and of natural phenomena (such as the rainbow), which generated systematic exploration of groups of colors. Medieval Jewish sources began to discuss colors as entities in and of themselves, rather than as secondary attributes of other phenomena. Not all these attempts at systemization were based on seven basic color terms, as was Sa'adia's; systems based on three or four fundamental colors were more common. These may have been influenced by Greek, Roman, or Arab texts, which played a prominent role in shaping medieval Jewish culture.¹⁰ However, the concurrent existence of various systems somewhat counters the effect of systematization because the systems were not always consistent with one another.

Let us take the rainbow as an example. The rainbow, a naturally occurring, universal, and striking manifestation of colors as a system, is loaded with symbolism.¹¹ In his *Meteorology*, Aristotle elaborated on the colors of the rainbow, thereby presenting his broader views regarding color and vision. Aristotle's *Meteorology*, an influential text on color, reached Jewish scholars of that time through the works of Arab thinkers.¹² Resianne Fontaine, who has studied the reception of *Meteorology* among Jewish scholars in the thirteenth century, claims that "there was no fixed colour scheme to which every author unhesitatingly subscribed. Instead, it appears that various views were circulating and that a considerable amount of unclarity and inconsistency pervaded several of the expositions."¹³ As we shall see, such ambiguity characterized the entire discourse on colors in medieval Judaism, not only that of the rainbow.

The systematization of colors in medieval Judaism is manifested not only in discussions of the physical world but also in discussions of visionary experiences, such as the chariot in Ezekiel 1. This vision is partly likened to the appearance of the rainbow: "Like the appearance of the bow which shines in the clouds on a day of rain, such was the appearance of the surrounding radiance" (Ezek. 1:28).

A medieval theological system in which colors play a relatively major role is that of the *sefirot*, the divine emanations of the kabbalah, the major Jewish mystical tradition that flourished in medieval Provence and Spain. In many medieval kabbalistic texts, the Godhead is described as a complex of ten manifestations, or *sefirot*, that emanate from the transcendent God; each emanation or *sefirah* (singular of *sefirot*) is a distinctive aspect of the Godhead, such as mercy or judgment. A prominent characteristic of kabbalistic language is the use of symbols to describe the distinctive characteristics of each emanation. Color is one of the clusters of symbols of the Godhead in kabbalah, so each emanation is linked to specific colors that represent its distinctive characteristics. Colors, a central expression of the diversity of the phenomenon of light, thus come to reflect the diversity of the Godhead. For example, the color white often symbolizes the emanation of mercy, while the color red symbolizes the emanation of harsh judgment. The correspondence between every color and a particular aspect of the Godhead was not merely coincidental; the kabbalists meant to suggest that every color shared specific features with its corresponding *sefirah*.

In a commentary on the ten *sefirot*, known as *Sha'ar ha-sho'el* (lit., Gateway of the inquirer) and attributed to the thirteenth-century Spanish kabbalist Azriel of Gerona, the author responds to a question about the “essence” of the *sefirot* by likening them to colors—tekhelet among them—as various manifestations of light:

When the divine [essence] is clothed in the imagination, we should liken the first power to a hidden light; the second power to the light that comprises every color—and this light is the likeness of tekhelet, which is the end [*takhlit*] of all colors, but there is in it no known color; the third power to a green light; the fourth power to a white light; the fifth power to a red light. The sixth power is composed of white and red; the seventh power is a red power inclined toward the white; the eighth power is a white power inclined toward the red; the ninth power is composed of the white and red, and from the red inclined toward the white and the white inclined toward the red. The tenth power is composed of every color.¹⁴

Colors are presented here as a manifestation of the diversity of light. The author does not refer to color as the actual experience of the *sefirot* but rather as metaphors. The light represents God, and the spectrum of colors derived

from that light represents the diverse manifestations of God. Every color is associated with a specific *sefirah* associated with a particular godly trait.

The association between colors and the *sefirot* is further found in the idea that earthly phenomena have certain colors symbolic of certain *sefirot*. We find an example of this approach in a list of the *sefirot* and their signifying colors attributed to another thirteenth-century kabbalist, Joseph Gikatilla.¹⁵ A unique feature of this text is that it attaches significance to the color *yarok*, which is understood to be the color of the sixth *sefirah*, *tiferet*, the *sefirah* that connects many of the other *sefirot*. *Yarok* is described as the color of nature, particularly the trees and plants. From these examples, it is apparent that the author renders the color term *yarok* as green. According to this approach, color is not just an abstract metaphor but rather an actual manifestation of God in the world, or at least a very concrete reminder of God.

The role of color in kabbalah extends beyond its theoretical function of providing knowledge of God. Like other kabbalistic symbols, colors also facilitate more practical or experiential interaction between human beings and God. Colors, as phenomena relatively easy to perceive, are an accessible departure point for further spiritual elevation. This may be achieved via various physical or imaginative practices. Where a particular color symbolizes a particular emanation, the color may be used in mystical practices involving that emanation. Such visual experiences can be real (physical) or imaginary.¹⁶ Regarding the former, one might take the example of gazing at a candle flame and its colors; the latter, rolling the closed eyes¹⁷ or visualizing colors during prayer.¹⁸ Some of these practices are not included in the formal law, whereas others, especially the visualizing of colors during prayer, have entered the arena of Jewish observance.

Colors played a dual role in mystical experiences: they potentially provided both the means to achieve the mystical experience and the content or outcome of that experience. Seeing colors could be the point of departure for a spiritual experience that did not necessarily involve colors. Yet colors could constitute the experience itself, even if the experience was brought about by a technique that did not involve colors, such as the recitation of certain verses.

Regarding the historical context of techniques of visualization, Moshe Idel noted that while the association between colors and the *sefirot* exists in early kabbalistic texts, the visualization of colors, particularly in prayer, is not mentioned in kabbalistic texts before the late thirteenth century.¹⁹ He also suggested that in these techniques, the kabbalists might have been in-

fluenced by Sufi circles.²⁰ Jonathan Garb demonstrated the influence of these visualization techniques on sixteenth-century Palestinian kabbalah (which will be a focal point of Chapter 3).²¹

Sources that address colors as a system, such as those introduced in this section, do not always assign a unique role to the color blue or to tekhelet, while other sources do spotlight tekhelet. In the remaining part of this chapter, I analyze medieval texts of Jewish mysticism that emphasize the special role of tekhelet. While many of these texts discuss tekhelet within the system of the *sefirot*, others, including a number of cosmogonic texts, provide a different frame for its discussion.

Tekhelet and Cosmogony

The prominent role of colors in the process of creation, traditionally termed *ma'ase bereshit* (lit., “act of creation”), seems to have been a medieval innovation.²² Yet, we find a prominent ancient Jewish cosmogonic tradition reflected in a statement in the Babylonian Talmud about the green line (*kav yarok*) that surrounded the entire world prior to creation and was the origin of the darkness that preceded creation.²³ This tradition later appears in *Sefer yet-sirah* (Book of creation), an influential text whose dating in late antiquity remains an open question.

The role of color in the process of creation is particularly striking in the thirteenth-century kabbalistic work *Ma'ayan ha-ḥokhmah* (Fountain of wisdom). This text is classified by scholars of kabbalah as a work associated with the Circle of Contemplation (Heb., *Ḥug ha-ityyun*), a mysterious group of mystics who were approximately contemporaneous with the early masters of theosophic kabbalah but developed a different theology. Gershom Scholem remarked that “this small book [*Fountain of Wisdom*] was always regarded by the kabbalists as one of the most enigmatic works of their literature.”²⁴ Accordingly, I will not attempt to extract a full picture from the unclear, often contradictory, statements of that work. This is true of *Fountain of Wisdom* in general and of its approach to colors in particular.²⁵ As Oded Porat has noted, although the basic color scheme of *Fountain of Wisdom* consists of five colors—black, white, red, green, and tekhelet—they are discussed in various structures and dynamics, with intricate interrelations. Hence, the book does not present a single, unified system of colors.²⁶ One can nonetheless discern two significant roles afforded to tekhelet in this complexity: it appears as a prominent

color in the primordial darkness, and it becomes the central color in the light after that darkness.

From the primordial darkness of the ether came two sources (Heb., *mekorot*): darkness and light.²⁷ The darkness, which was actually a second darkness after the primordial darkness, consisted of three hues: *yarok* (which here might be yellow or green), *tekhelet*, and *lavan* (white). The light consisted of red and white. Hence, these two sources contained five colors (including black). The following quotation mentions these two sources, while elaborating on the darkness, which is of special interest to us:

Know and comprehend that prior to all of these things that we have mentioned above there was only this ether, as we have already stated. It was obscured by two things, pertaining to two sources. From the first flowed an undefinable light, infinite and immeasurable. The flow was rapid like sparks that are produced simultaneously and disperse into many directions when the blacksmith wields his hammer. Afterward one spring was emanated from which emanated darkness. This darkness was mixed with three colors. The first was dark like dawn that is greenish. The second was a mixture of green and *tekhelet*, and the third was darkened white mixed with green, *tekhelet*, and red.²⁸

Oded Porat suggests that the three kinds of darkness described here as part of the process of creation correspond to three manifestations of darkness within the daily cycle: the first, greenish, is explicitly likened to the dawn; the second, a mixture of green and *tekhelet*, seems similar to the dark night; and the third, a mixture of green, *tekhelet*, and red, might be akin to the evening.²⁹ Apparently, these colors do not exist side by side but rather as successive stages of development, in which an additional color appears at each stage.

In this darkness stage of creation, *tekhelet* is preceded by *yarok* (green). *Yarok* exists from the beginning, whereas *tekhelet* joins only in the second stage. After discussing the colors of darkness, the author introduces “the Marvelous Light” (*Or mufla*), the first hue to stem from the darkness: “The first [of the ten hues] is the Marvelous Light, which has no color unto itself; nonetheless, it manifests the power of every color. It is like a mirror in which everything is seen, yet it possesses no color [of its own]. For the Marvelous Light receives the exchange from the Light That Is Darkened from Illuminating [*ba-or ba-neḥshakh me-ba’ir*]. It is the head of all the colors, even

though it does not possess a fixed color. It is similar to tekhelet.”³⁰ This text compares the appearance of the “Marvelous Light” to tekhelet. That appearance is said to have “no color unto itself” and to be “a mirror in which everything is seen”; it is “the head of all the colors.” In this stage of creation, tekhelet becomes the most prominent of all colors.³¹

Notably, in *Fountain of Wisdom*, tekhelet and *yarok* are closely related. Both are considered primordial colors with a preeminent status. But whereas tekhelet is somewhat secondary to *yarok* in the context of darkness, *yarok* becomes secondary to tekhelet in the unfolding of the hues in later stages of reality.³² The prominent role of tekhelet as representing the source of being, as well as its function as a primal color from which other colors unfold, is even more striking in the context of the *sefirot*, to which we now turn.

Tekhelet Within the System of the *Sefirot*: Between Complexity and Nothingness

I will now return to the structure of the *sefirot*, the divine emanations according to the kabbalah, and attempt to characterize the role of tekhelet in this construction. Different kabbalistic texts associated tekhelet with different *sefirot*, and some associated tekhelet with more than a single *sefirah*. For example, in a scheme of colors by the kabbalist David ben Yehudah he-Ḥasid, tekhelet is mentioned in association with three emanations: “*Ḥokhmah*, tekhelet of heaven . . . *netzah*, white that tends to tekhelet . . . *yesod*, tekhelet that tends to black.”³³ In this section, I will engage with the more prominent associations between tekhelet and two *sefirot*, each representing one extreme of the system: the second, *ḥokhmah*; and the tenth, *malhut*.

Ḥokhmah, the second *sefirah*, has various characteristics in kabbalistic texts. It is presented as a primal source of existence; as such, that source is often described as an end. As the second *sefirah*, which is almost at the top of the hierarchy of divine potencies, *ḥokhmah* is the divine source from which all lower *sefirot* emanate. As the source of existence, it is also described as darkness that precedes creation.

All these characteristics of *ḥokhmah* fit the characteristics of tekhelet as presented in various medieval kabbalistic texts. Although *Ma’ayan ha-ḥokhmah* discussed above did not employ the terminology of the *sefirot*, it is significant that tekhelet is described there as darkness that is the source of other colors, just as *ḥokhmah* is the darkness from which all lower *sefirot* emanate. More

explicit are kabbalistic sources that associate *ḥokhmah* and tekhelet on the basis of these features. The aforementioned thirteenth-century *Shā'ar ha-sho'el* introduced an association between tekhelet and the second *sefirah*, *ḥokhmah* (wisdom).³⁴ The author described tekhelet as the end (*takhlit*) of all colors, with no definite hue, and referred to the linguistic similarity between *tekhelet* and *takhlit*.³⁵ The description of tekhelet as a color without any known hue is congruent with the characterization of *ḥokhmah* in kabbalistic literature—that it is a primal source from which all other *sefirot* emanate. Tekhelet and *ḥokhmah* are linked in other medieval kabbalistic texts as well.³⁶ We see another instance of the association between tekhelet and *ḥokhmah* in later manuscripts (fifteenth–seventeenth centuries) that list the *sefirot* along with their corresponding colors.³⁷ Here is one example: “The color of *ḥokhmah* is as written: ‘A man’s wisdom lights up his face’ (Eccles. 8:1). It is the end [*takhlit*] of the colors; it is like tekhelet, which is not a color, but the source [*ko’ah*] for every color.”³⁸

Here, the association between tekhelet and *ḥokhmah* is similar to that of *Shā'ar ha-sho'el*: tekhelet is explicitly described as the end (*takhlit*), as having no hue, and as the source for all hues. Other manuscripts add another parallel structure, associating tekhelet and *ḥokhmah* with the first group of letters that played a role in the creation of the world, according to *Sefer yet-sirah*.³⁹ This highlights again the prominent role that tekhelet played in the creation of the world, its representation of the source of being, and its role as the primal color from which other colors emanate. Other manuscripts connect tekhelet with *ḥokhmah* but state that tekhelet “unifies” all colors (rather than presenting it as a noncolor). This notion of unification is related to the fact that the tallit, the prayer shawl with strands of tekhelet attached, envelops the body. The bodily organs are paralleled to the colors that symbolize the *sefirot*.⁴⁰

Notwithstanding the important association between tekhelet and *ḥokhmah*, the more common and influential association is between tekhelet and the last and lowest emanation, whose more familiar names are *malkhut* (kingdom or kingship), the *shekhinah* (divine presence), and *Kenesset Yisrael* (the unification of Israel—a representation of the entire Jewish people). The last *sefirah* is a central theme in kabbalistic texts because it serves as the junction between the divine system of the *sefirot* and the earthly, human world. Kabbalistic texts assembled the various characteristics of tekhelet from pre-kabbalistic sources and attributed them to tekhelet as part of its embodiment of the last emanation.

One can trace the association of tekhelet with *malkhut* to the earliest kabbalistic literature. In *Sefer ha-bahir*, considered one of the earliest kabbalistic texts, there are two significant references to tekhelet. One describes tekhelet as divine wisdom, but it is not clear whether the text refers to the upper wisdom (*hokhmah*) or lower wisdom (*malkhut*) or to both of them.⁴¹ The second reference is more clearly associated with *malkhut*:

What is the earth from which the heavens were graven? It is the Throne of the Blessed Holy One. It is a Precious Stone and the Sea of Wisdom. This parallels the tekhelet in the tsitsit. Rabbi Meir thus said: Why is tekhelet special among all other colors? Because tekhelet resembles the sea, the sea resembles the sky, and the sky resembles the Throne of Glory. It is thus written (Exod. 24:10), "and they saw the God of Israel: under his feet there was the likeness of a pavement of sapphire, like the very sky for purity." It is furthermore written (Ezek. 1:26), "the semblance of a throne, in appearance like sapphire."⁴²

Based on Rabbi Meir's phrase, this text parallels the "tekhelet of tsitsit" to a list of seemingly divine objects and phenomena: "the earth from which the heavens were graven," "the Throne of Glory," "a Precious Stone," and "the Sea of Wisdom." These objects and phenomena were also understood by later commentators as symbols of the last *sefirah*. If we accept this interpretation, then tekhelet was defined in the twelfth century as a symbol of the last emanation of God.⁴³

The association of tekhelet with *malkhut* becomes more decisive in later kabbalistic texts, such as the aforementioned work attributed to Gikatilla: "Know that the color which is the secret of tekhelet is the secret of *Kenesset Yisrael*, which is the secret of *malkhut*."⁴⁴ However, this text stresses that tekhelet is the inner aspect of *malkhut*, whereas its outer aspect is black. The inner aspect of *malkhut* seems to be what interacts with the other *sefirot* inside the Godhead, and the outer aspect is what interacts with power external to God, including forces of evil. This text's conclusion is not accepted universally; in a Zoharic text (whose author might not have been distant in time or place from the author of the previous text), tekhelet is described as the outer aspect of *malkhut* rather than its inner aspect, which is associated with the color white.⁴⁵

Of the various qualities attributed to *malkhut* in kabbalistic texts, in this section I will address a particular characteristic of *malkhut*: its nature as a

vessel that receives all the divine influx from emanations above it and subsequently transfers this influx to the earthly world. Hence, every distinct power of the Godhead is discernible in *malkhut*.⁴⁶ An example of the association between tekhelet and *malkhut* by means of unification and inclusion can be found in the famous Torah commentary by Moses Nahmanides (1194–1270). Nahmanides noted the linguistic connection between the Hebrew word *kol* (כָּל), which generally means “all,” with both tekhelet and *malkhut*.⁴⁷ The word *kol* is often associated with *malkhut*, representing its inclusion and unification of the divine influx coming from all other *sefirot*. But the letters of the word *kol* (כָּל) are also part of the word *tekhelet* (תְּכֵלֶת), thereby representing the multifaceted quality of the color tekhelet, which unifies all other colors.⁴⁸

As a vessel receiving divine energy from all the upper emanations, the sea is another important symbol of *malkhut*. Of all colors, tekhelet was the most suited to associations with the sea. Aside from the obvious resemblance of the hue, the tekhelet *hillazon* should have been a marine mollusk. Accordingly, several sources note that tekhelet dye originates in the sea of *malkhut*.⁴⁹ The symbol of the sea, then, was a channel through which the material character of tekhelet influenced its kabbalistic character.

The linkage between tekhelet and *malkhut* through the quality of inclusion bears a certain similarity to the aforementioned association between tekhelet and *hokhmah*, which was also based on the quality of inclusion. But whereas *malkhut* includes all other *sefirot* as the final destination, *hokhmah* includes them as the departure point for the emanation process. The characterization of tekhelet as the unification of all colors thus also fits the association between tekhelet and *hokhmah*. Likewise, *hokhmah* and *malkhut* were both said in kabbalistic texts to have no hue of their own, which fits in with the description of tekhelet as a noncolor or as the endpoint for all colors.

What is the hue of the inclusion or the unification of all colors? The association between tekhelet and *hokhmah* corresponds to the linkage between tekhelet and the color black, introduced in Chapter 1.⁵⁰ This association fits the two seemingly contradictory characterizations of tekhelet mentioned above. On the one hand, tekhelet is described as including all colors, just as the color black absorbs all colors. On the other hand, it is characterized as having no color. This is similar to premodern perceptions, famously publicized by Leonardo da Vinci’s statement that “black is not a color.”⁵¹ The association between tekhelet, black, and the second *sefirah* also

fits the description of tekhelet as devoid of hue in the aforementioned text *Sha'ar ha-sho'el*.⁵² Although that text did not ascribe a blackish hue to tekhelet, later commentators introduced black as the more probable option for the color of the second *sefirah*.⁵³ By contrast, the text attributed to Gikatilla⁵⁴ presented tekhelet as the inner aspect of *malkhut*, and black the outer one. According to that text, then, tekhelet is not black. Neither is it green, which was associated with *tiferet*, the sixth *sefirah*. More probably, the author of that text thought that tekhelet was blue.

An inclusive compound color might have more than a single hue. Rather than reducing all colors to a single hue, some medieval authors imagined the opposite: that tekhelet shimmers in various hues.⁵⁵ That identification is also associated with Rabbi Meir's phrase, but this time with the comparison between tekhelet and sapphire, which was also considered to have a number of glittering hues, and therefore to contain many colors. In accordance with this characterization of *malkhut* as gathering the divine influx or energy of the various upper *sefirot*, one may characterize *malkhut* as having diverse colors: the colors of judgment, such as red or black, as well as the colors of mercy, primarily white. In the list of *sefirot* and their corresponding colors in *Sha'ar ha-sho'el* quoted above, the author wrote that "the tenth power is composed of every color."⁵⁶ This statement depicts *malkhut* as gathering the divine influx of all the higher *sefirot*. However, this text did not associate tekhelet with *malkhut*, but rather with *hokhmah*, as noted above.

But tekhelet is not the only color that has been said to shine in various hues. *Argaman*, or purple, was also described as a compound color.⁵⁷ For example, the text on colors attributed to Gikatilla mentions tekhelet as one of the colors within the purple shade (*argaman*) of the sixth emanation, *tiferet*.⁵⁸ The other colors are black, white, *yarok* (green?), *yerakrak* (yellow?), and red. In this example, the compound color is *argaman*, whereas tekhelet becomes one of the hues within it.

Tekhelet Within the System of the *Sefirot*: Between Judgment and Mercy

The characterization of *malkhut* as including the actions of all the *sefirot* above it is manifested especially in its dual quality of judgment and mercy—namely, the judicial and executive aspects of the Godhead, as well as the more giving

and forgiving aspects. Judgment operates primarily through the fifth *sefirah*, named *din* (judgment) or *gevurah* (strength). Mercy operates through the fourth or sixth *sefirah*; the fourth *sefirah* is named *hesed* (grace) or *gedulah* (grandeur), whereas the sixth *sefirah* is named *tiferet* (splendor) or *raḥamim* (mercy). Although these two seemingly contradictory forces are associated with different *sefirot*, they are combined together in *malkhut*. *Malkhut* is sometimes presented as a divine force oscillating between judgment and mercy, depending on human behavior. But *malkhut* is also presented as the synthetic force of a mild judgment—namely, a result of the operation of divine judgment that was mitigated by divine mercy.

As we shall see, the color tekhelet is the ideal candidate for that sort of dual action because the blue hue can also be interpreted as dual. Blue is associated with both fire and water. The fire annihilates, whereas the water puts out the fire. Both fire and water motifs are dual in and of themselves. Fire is used for warming and cooking but can also destroy. Water indeed extinguishes fire, thereby giving life, but water can also drown and annihilate. Moreover, every destructive force, when directed to one's enemies, can be considered beneficial.

The duality of tekhelet appears in three linguistic associations between the word *tekhelet* and other words in Hebrew. The ancient midrash *Sifre to Numbers* links tekhelet with the death of the firstborn sons of the Egyptians and the drowning of the Egyptian soldiers in the sea, based on a linguistic association between the word *tekhelet*/תכלת and the Hebrew roots *klb*/כלב (denoting annihilation).⁵⁹ Another ancient source, the Onkelos translation of the Bible into Aramaic, translates the Hebrew root for bereavement (*škl*/שכל) as *takhal* (תכל), which is similar to *tekhelet* and *takblit*, which is an end.⁶⁰ According to that association, tekhelet is an end, a final terminus, emblematic of the divine powers of destruction and death. This midrashic motif reverberates in the Zohar, a major text of medieval kabbalah.⁶¹ Other Zoharic texts introduce a third linguistic association that conveys a sense of threat: between the word *tekhelet*/תכלת and the Hebrew root *akl*/אכל, which denotes consuming and devouring fire.⁶²

Why is tekhelet associated with destruction? The ancient texts, as well as some of the medieval ones, highlight only the linguistic similarity, but other medieval interpretations suggest more visual explanations. One text represents tekhelet as the fire that devoured the sacrifices of the Israelites (which is actually a good annihilation, as it signifies that God is willing to accept the sacrifice).⁶³ Apparently, this identification of tekhelet with a de-

vouring fire was based not only on the annihilating function of tekhelet but also on the natural phenomenon of blue fire.⁶⁴

The Talmudic phrase that “all colors bode well in a dream except the color tekhelet” (*b. Ber.* 57b) also represents tekhelet as threatening, and it is later quoted by the Zohar. The reason for tekhelet’s characterization in the Talmud as threatening remains unclear. Perhaps Rabbi Meir’s statement likening tekhelet to the sea, the sky, and the Throne of Glory is an indirect source for understanding tekhelet as threatening; tekhelet may be threatening because God’s Throne can be also seen as the judge’s seat in a courtroom. These two sources are linked in a Zoharic text quoted by later kabbalists:

Tekhelet is the throne from which capital cases are judged; for there is a throne from which civil cases are judged and a throne from which capital cases are judged. Consequently, all colors bode well in a dream except the color tekhelet,⁶⁵ since one realizes that his soul is being arraigned in judgment, and when the soul is judged, the body is sentenced to destruction—that dream needs great mercy.

Tekhelet is the Throne, of which is written, “a flashing fire and a radiance surrounding it” (*Ezek.* 1:4)—because with it, windings are wound to tsitsit, and when it attains a radiance it turns green, the color of leeks. From that moment begins the time of reciting the Shema,⁶⁶ since the color tekhelet changes from what it was. Therefore, it is forbidden to try capital cases at night because the color tekhelet rules at that time and permission is granted to snatch a soul without justice, since justice does not rule at that time.

When morning arrives and the right above arouses,⁶⁷ that light radiates and reaches this tekhelet, which changes from what it was. Then another throne reigns over it, cleaving to it in holiness. From that moment on is the time for reciting the Shema.⁶⁸

This Zoharic text appears in the context of the biblical verses that mention the dyes of the Tabernacle. The association of tekhelet with a throne, which opens the quotation, follows Rabbi Meir’s statement. But this text further elucidates that the Throne of God is also the seat of judgment. Initially, the Throne is described as ruling over a court of capital cases, and the appearance of tekhelet in a dream signals to the dreamer that he or she is currently

under trial. Later, the Throne is identified with the throne mentioned in Ezekiel's vision of the chariot, an identification also implicitly based on the Talmudic association between tekhelet, sapphire, and the Throne of Glory discussed above.

Tekhelet is identified in this Zoharic text with both the Throne and the radiance of flashing fire that surrounds it. Over the course of the text, it undergoes a transformation from a threat to a source of relief. According to this passage, a form of harsh divine judgment lacking in justice, symbolized here by a dark tekhelet, is active at night; when daylight comes, the color of tekhelet changes to green. This process might reflect the mixing of blue with the yellow of the sun. That is, yellow is the moderating color, and the resulting green is the moderated tekhelet. The transformation of hues expresses both the dawning of daylight and the softening of divine judgment: after sunrise, divine grace is activated and the divine leadership changes from judgment to mercy, shifting from a dark tekhelet to a lighter green hue. Although the quoted text lacks any explicit reference to the last emanation and its association with tekhelet, it implicitly connects several symbols of that *sefirah* in a way typical of the Zoharic language in which the symbolic associations take place.⁶⁹ Notably, in this text, the Zohar attributes a visual character to the threatening force of tekhelet. Tekhelet is active in the darkness of the night and seems to be associated with a dark hue.

To further complicate matters, tekhelet is not only a manifestation of divine judgment; it is also linked with the power of mercy that attenuates such judgment. While the association of tekhelet with blue fire shaped it as an expression of harsh judgment, it is also linked with the water that diminishes this fire, casting it as an element of mercy that mollifies the severe judgment. Another Zoharic text elaborates on this issue. The midrashic context of this text is again the dyes required for the Tabernacle. The Zohar moves the discussion to the water motif when introducing the marine origin of tekhelet: "Tekhelet (Exod. 25:4). Rabbi Yitshak said, 'Tekhelet is from that fish [*nuna*, in the Aramaic original] of the Sea of Ginnosar, which is in the share of Zebulun. This color was needed for the making of the Dwelling, so that this color could be made manifest.'⁷⁰

Most of the previously quoted texts in this chapter implicitly referred to the visual aspect of tekhelet, its hue. The water motif, however, introduces a material property of tekhelet into the discussion—namely, that it is derived from the sea, from a marine mollusk (according to the rabbinic re-

quirement). Although the Zohar uses the word *nuna*, the Aramaic word for fish, the marine *hillazon* is clearly the referent.

This association between tekhelet and water leads the Zohar to a teaching about the role of tekhelet on the second day of creation, on which God created the water. The teaching begins by describing the first three days of creation. The first day is characterized by divine grace, the second day by divine judgment (hell was created on that day), and the third day is a synthesis of grace and judgment. But there was already an aspect of judgment on the first day and an aspect of grace on the second day. The water of the second day actually originated on the first day (water is a symbol of grace), but it was colored tekhelet, which is considered the “seat of judgment” (as described in the Zoharic text quoted above).⁷¹ Note the part of the following text that describes tekhelet: “This tekhelet on the second day was tinged with other colors: red and black. Tekhelet (Exod. 25:4)—red comes to it from the second day itself, corresponding to the color of fire, and this is *Elohim*.⁷² It inherits the color gold, for all is one color. Tekhelet emerges from that color red. When it descends, the red plunges deep into the place that is the sea and is dyed with the hue *tikbla*; that red enters the sea and its hue is diluted and turns *tikbla*, and this is *Elohim*, though not as harsh as the first one.”⁷³

This text actually distinguishes between the entity *tekhelet* (or *tkhelta*) and the hue *tikbla*. It is unclear what exactly *tekhelet* is in this textual context—whether it refers to the *sefirah malkhut* or the dye—but it is quite clear that *tikbla* is a hue that is attributed to that entity, a hue that is perhaps blue but definitely neither red nor black. According to the text, tekhelet was initially colored with black and red hues, symbolic of divine judgment (also associated with the color of gold) on the second day of creation.⁷⁴ However, when tekhelet “descends” (a dynamic that supports the understanding of tekhelet as *malkhut* that emanated from the upper *sefirot*), its red hue is attenuated and the tekhelet hue appears. The color black is also separated from red in this process. The process described is thus a myth of differentiation of the various aspects of judgment: black becomes the hue of the forces of evil; red is the color of harsh judgment associated with the fifth *sefirah*; and *tikbla* becomes the hue of tekhelet, which is positioned as the last *sefirah* and has a quality of mild judgment. The attenuating operation of the mild judgment is symbolized by a process by which the red fire of judgment is chilled or put out by the cooler water of the sea.

As noted above, the water attribute does not represent divine mercy alone but rather has a dual character. In another Zoharic passage, the water of the sea is presented as both the water that saved the Israelites after the sea was split and the water in which the Egyptians were drowned.⁷⁵ In this text, tekhelet is both perilous *and* protective.

Kabbalistic symbolism also manifests important mythical aspects in the personification of the divine emanations. The last emanation, with its other name, *shekhinah*, is portrayed as a divine presence that is close to human beings in general and to the Israelites in particular. It is the divine persona that escorts and protects the Israelites throughout their history.⁷⁶ That sort of characterization suits the pre-kabbalistic depiction of tekhelet as the force that struck the Egyptians, thereby saving the Israelites. It also fits the protective role of tekhelet as a cover to the Ark of the Covenant, as both the Ark and its tekhelet cover escorted the Israelites in their journey from Egypt to Canaan.

Seeing Tekhelet: Rabbi Meir's Path

More than any other color, tekhelet is described as inviting human contemplation. In this respect, too, tekhelet is fit to be associated with *malkhut* because *malkhut* is often characterized as the obvious object of human reference to the Godhead. As the emanation closest to human beings, *malkhut* is depicted in kabbalistic texts as the channel through which prayers go upward, as well as the object of prayers. However, as we will soon see, the association of tekhelet with visions of the divine goes beyond the context of the *sefirot*.

In this section and those that follow, I will elaborate on interpretations of texts involving the seeing of tekhelet. These writings, philosophical and mystical alike, might have had various purposes: documenting personal experiences, guiding others, and interpreting texts. Following Elliot Wolfson, I assume that very often these interpretations involve visual experiences.⁷⁷

Rabbi Meir's statement likening tekhelet to other earthly and divine phenomena is perhaps the primary source associated with the vision of tekhelet.⁷⁸ In all its versions, the statement introduces a connection between the earthly and the divine tekhelet. The chain of homologies can be understood as both a phenomenological comparison and as inducing action—practically leading the worshiper from the tekhelet thread of the *tsitsit*, through the

sea, to the divine. Additionally, the chain can be seen as the theory behind the practice of gazing at the tekhelet thread of the tsitsit or the detailed instructions for the performance of this act. One might even speculate that this chain was a mystical technique: by gazing at the color tekhelet, one shifts focus from one phenomenon to another, ultimately beholding divine entities. But which, exactly, is the tekhelet-colored divine entity that the worshiper is invited to experience? Each of the numerous answers to that question develops a different concept of the color tekhelet. Moreover, some of the sources do not refer to the tekhelet of tsitsit as the earthly manifestation of tekhelet. Rather, they refer to other earthly manifestations of the color blue, such as a candle flame, as we will see below.

The association between wearing the tekhelet thread of the tsitsit and seeing divine entities, which is more than just a similarity of appearance, was introduced hundreds of years before medieval kabbalistic texts. The ancient midrash *Sifre to Numbers* offers Rabbi Meir's statement as the basis for the claim that "whoever carries out the religious duty of wearing show-fringes is credited as if he had received the face of the presence of God [*shekbinah*]." ⁷⁹ It should be emphasized that the term *shekbinah* in the context of this midrash does not necessarily refer to one of the manifestations of God himself, as is the case in medieval kabbalistic sources; it can also be an inferior power. In addition, although gazing at the tekhelet thread of the tsitsit is comparable to gazing at the *shekbinah*, we do not know whether the *shekbinah*, the divine entity itself, has any connection to the color tekhelet.

We find a sharper statement about the tekhelet color of the divine entities on the basis of Rabbi Meir's statement in the Hekhalot literature, which contains visionary depictions of the upper realms and guidelines for spiritual ascension to those realms. Although this literature is from late antiquity, it is considered a major component of early Jewish mysticism, which significantly influenced medieval kabbalah. In *Hekhalot zutarti*, the Throne of Glory is likened to the sea and to the color tekhelet: "And the throne of glory stands upon the four living creatures, and the likeness of the throne is the likeness of the firmament, and the firmament is like the water of the sea, and the water of the sea is like tekhelet, and the tekhelet is sapphire."⁸⁰

The chain of comparison here is similar to Rabbi Meir's, but in the opposite direction: where Rabbi Meir begins with the tekhelet thread of the tsitsit and ascends to the Throne of Glory, *Hekhalot zutarti* begins with the Throne of Glory and descends to tekhelet.⁸¹ The Hekhalot text does not seem to necessarily guide the worshiper in spiritual ascension but rather attempts

to describe the upper worlds to the mystic, perhaps as an introduction to a future journey. Clearly, the appearance of the Throne of Glory is the color tekhelet, and this visual experience is associated with a possible mystical journey. That is, the text talks about the possibility of beholding divine entities colored tekhelet.

The notion that tekhelet is primarily the color of a divine entity also appears in a version of Rabbi Meir's statement documented in *Midrash tehilim*.⁸² According to this source, "from his glory he delivered to his worshipers—this is tekhelet, as it is written that 'to make for themselves fringes . . . let them attach a cord of tekhelet to the fringe at each corner' (Num. 15:38)." Namely, tekhelet is an element of God's glory that was delivered to the earthly creatures through the tsitsit. Tekhelet is first and foremost an aspect of God; the earthly tekhelet is a residue of the divine tekhelet.

What is the aspect of the divine described as tekhelet? While *Hekhalot zutarti* states that the Throne of Glory itself has a tekhelet color, other sources present a different opinion, such as the following text from the medieval midrash *Numbers Rabba*:

R. Nathan said: Precious in God's sight was the construction of the ark even as that of the Throne of Glory in heaven. . . . When [Israel] set forward they spread over [the ark] neither a cloth of purple nor of scarlet but a cloth of pure tekhelet. Why? Because tekhelet is like the sea, and the sea is like the sky, and the sky is like the Throne of Glory; as it says: "And above the firmament that was over their heads was the likeness of a throne, as the appearance of sapphire stone" (Ezek. 1:26). This is to teach you that the ark was like the Throne of Glory. And the reason the expression "of pure tekhelet" was used in connection with it is because it was in every way like it. Now because the ark was like it, the cloth of tekhelet was on top, facing forward the sky, which resembled it.⁸³

This text seems to present an affinity between the tekhelet appearance of the earthly cover of the Ark (Num. 4:6) and the tekhelet appearance of the heavens below the Throne of Glory. The affinity is mirror-like: in the earthly realm, the cover is above the covered entity; in the divine realm, the cover is below. As in previous texts, we do not know the relation between the Throne of Glory and God himself—whether the Throne is an aspect of the God-

head (as in the passage from the Zohar quoted in the previous section)⁸⁴ or a lower entity within the system of divine entities. Regardless, we know that *Numbers Rabba* attributes tekhelet not to the Godhead but to something inferior. Whereas the text from *Hekhalot zutarti* can be interpreted as stating that tekhelet is the color of the Throne of Glory itself, *Numbers Rabba* seems to take one step back and attribute the color tekhelet to the cover of the Throne rather than the Throne itself. Accordingly, in *Hekhalot zutarti*, tekhelet reveals something of the appearance of the Throne; but in *Numbers Rabba*, the tekhelet cover hides the sacred rather than revealing it.

Among the works of the Hasidei Ashkenaz, medieval German Jewish pietists, we find a far-reaching interpretation of Rabbi Meir's statement. Moshe Idel noted that tekhelet appears in the writings of thirteenth-century Neḥemiah ben Shlomo, "the prophet" of Erfurt.⁸⁵ In some of his references, Neḥemiah quoted Rabbi Meir's phrase that "tekhelet is like unto the sea." One of these references is a hitherto unknown version of Rabbi Meir's phrase, which added at the end "and the Throne of Glory is like the Lord" (*kono shel olam*).⁸⁶ Whether this addition comes from an ancient version censored in later editions, or whether it is an innovation by Neḥemiah himself, this is a far-reaching statement—it hints not only at the lower level of the Throne of Glory but the color of God himself. Although Neḥemiah opposes attributing an actual tekhelet hue to God (rather, he characterizes God as using the appearance of tekhelet), he still associates tekhelet with entities above the Throne of Glory and closer to God.⁸⁷ Neḥemiah, then, goes beyond ancient rabbinic texts in associating tekhelet with the upper realms.⁸⁸

If we assume that Rabbi Meir's statement hints at a spiritual experience, catching sight of divine entities, a question can be introduced about the domain in which this experience takes place: Is it in the physical world, or in the realm of imagination? The continuity established by the chain of comparison between the lower entities and the upper ones also encourages us to understand the relevant experience as taking place in the physical world rather than in the imagination of the mystic.⁸⁹ In that respect, for example, Idel suggested that the prophet Neḥemiah experienced direct vision of upper entities in a particular moment when veiling entities, such as the curtain, uncovered the upper entities.⁹⁰

However, the vision of tekhelet in the upper realms, especially in conjunction with the Throne of Glory, was not necessarily associated with Rabbi Meir's statement or with actual experiences of looking at bluish objects and

phenomena. The next section addresses visions of a different sort, which take place in the mystic's imagination.

Seeing Tekhelet: Envisioning Ezekiel's Chariot

We find visions of tekhelet, among other colors, in medieval commentaries and speculations on the chariot vision in Ezekiel 1, which include visions of the Throne of Glory. As noted above, following Wolfson, I assume that these interpretations involve real experiences. Regarding Ezekiel's chariot, the visions seem to be purely imaginary, rather than real and physical.⁹¹

Colors are mentioned often in these commentaries; they are used to describe several components of the divine system of the chariot, such as the various lights, fires, angels, and the Throne of Glory. In addition to the Throne of Glory, which had the appearance of sapphire (Ezek. 1:26, 10:1), other components described in that vision, such as the *hashmal* (Ezek. 1:4), were described with reference to colors in general, and tekhelet or blue in particular. These texts often incorporate ancient material such as the Hekhalot literature and *Sefer yetsirah*.

Sa'adia Gaon addressed colors in the chariot vision in his ninth-century commentary on the aforementioned *Sefer yetsirah* (Book of creation; *Kitab al-mabadi*). This commentary includes a list of colors seen by the prophet Ezekiel during his vision of the chariot. These colors are blue, red, yellow, black, and white.⁹² Bluish hues appear twice in this passage. The first occurrence, "an appearance of a blue hue" (*lawn zarka*, in the Arabic original), is associated with the enigmatic *hashmal*. The second one, "a bluish fire," is the color of the body of the animals, and here Sa'adia uses the word *kahol*, which seems to refer to the color of kohl, which is blue-black-gray. "Sapphire," however, is not associated with blue by Sa'adia but rather with white.⁹³ Natasha Zabolotnaya has suggested that Sa'adia's choice for the system of colors reflects a merging of rabbinic tradition, early Jewish mysticism, and Greco-Arabic philosophy.⁹⁴

Rabbi Eleazar of Worms (d. c. 1234), a major figure in the Hasidei Ashkenaz group of medieval pietists, related to Sa'adia's commentary on *Sefer yetsirah* but with a significant change in the system of colors. In Sa'adia's commentary the term *hashmal*, which appears to be a kind of fire, was associated with blue (Arabic, *lawn zarka*); but in Rabbi Eleazar's writings, several opinions are presented. One opinion associates the *hashmal* with the term *yarok*,

usually understood as green rather than blue.⁹⁵ In other texts, Rabbi Eleazar characterizes *hashmal* using another term that refers to a shade of green—*yerakrak* (ירקרק). Elsewhere, he states explicitly that tekhelet is not the color of *hashmal* but rather the color of the darkness of water around the radiance of the *hashmal* fire.⁹⁶ Rabbi Eleazar thus replaces both blue and tekhelet (even if these terms do not denote the same color) with *yarok*. This replacement should be understood as part of the relative importance that he assigns to the terms *yarok* and *yerakrak*, terms that denote greenish hues. Another example can be found in his commentary to (or paraphrase of) Sa'adia's *Book of Beliefs and Opinions*, in which the list of colors is copied but amended: yellowness (*tsafra*) is replaced by *yerakrak*.⁹⁷ This change supports the possibility that the color of *hashmal*, according to Rabbi Eleazar, is not blue but yellow-green.

Rabbi Eleazar of Worms's marginalization of the colors blue and tekhelet as compared with *yarok* should be understood in the context of the more general prominence of the color green in medieval Jewish esoteric traditions. Asi Farber-Ginat, who has studied thirteenth-century Jewish esoteric traditions of the chariot from both Ashkenaz and Spain, has pointed out the prominence of the color green in those traditions: it is the major color of the rainbow (with red and white being the other basic colors) and can also be interpreted as signifying the external color of the *shekhinah*.⁹⁸ The source of the prominence of the color green in those traditions, Farber-Ginat suggested, was not necessarily the traditions of the rainbow but rather the above-mentioned Ashkenazi chariot traditions. But it is also possible that both traditions were part of a broader prominence of *yarok* in medieval Ashkenaz, as discussed in Chapter 1.⁹⁹

The references to tekhelet in visions of the Throne of Glory sometimes emphasized tekhelet and, at other times, marginalized it. Thus, it was “upgraded” to entities above the Throne, as in the interpretation of Neḥemiah of Erfurt; at other times, it was replaced by *yarok* and *yerakrak* and “downgraded” to entities below the Throne, as in the darkness surrounding the *hashmal* in Eleazar of Worms's paraphrase of Sa'adia. Yet it seems that, in both directions, tekhelet plays the role of a mediatory layer between human beings and divine entities. Thus, a mediatory component, be it a curtain, the *hashmal*, or a darkness surrounding the *hashmal*, plays a dual role of both veiling and unveiling upper divine entities.¹⁰⁰

The concept of the curtain, with its various names that are not always easily distinguishable—*yeri'ah*, *pargod*, *parokhet*—features prominently in the

esoteric writings of Hasidei Ashkenaz, the Jewish mystics of the twelfth and thirteenth centuries.¹⁰¹ As an object, the curtain serves to conceal divine entities; as a site, it is a place on which divine entities are inscribed and displayed. Indeed, it is upon these covers that the *Kavod*, the divine glory, is revealed.¹⁰² The concept of the curtain is particularly related to tekhelet because in Num. 4:6, tekhelet is presented as the cloth covering the Holy Ark.

Seeing Tekhelet: Gazing at the Candle Flame

Let us return to the experiences of the divine caused by physically gazing at colors (rather than imagining colors). We find a well-known example of such a practice in the Zoharic text with which Scholem concluded his groundbreaking essay about colors, a teaching describing the appearance of colors in a candle flame, in which tekhelet is preeminent.¹⁰³ That teaching is loaded with meanings; here, I will limit myself to a few interesting characterizations of tekhelet.

The Zohar begins the discussion as follows: “Whoever desires to penetrate the wisdom of holy unification should contemplate the flame ascending from a glowing ember or a burning candle.”¹⁰⁴ Then the Zohar explains what is actually seen when contemplating the flame. The basic appearance is of two colors that are visible in a flame: an upper white light and a lower light whose hue is tekhelet or black. The upper light symbolizes the sixth emanation, *tiferet*, and the emanations above *malkhut*. The lower light symbolizes *malkhut*. The Zohar emphasizes that while the upper light is stable and unchanging, the lower light is sometimes tekhelet-black but sometimes red. That statement reflects the dynamic character of *malkhut*. Following the differentiation between the upper and the lower light, the Zohar goes on to characterize tekhelet as having a dual action. On the one hand, tekhelet performs the destructive function of *malkhut*, the annihilating force of the fire of God toward all that lies below it, as the flame of the altar annihilates the sacrifice. On the other hand, tekhelet is the gate to mystical attachment for all creatures below it (the very same creatures likely to suffer from its destructive power). When the people of Israel connect themselves with the tekhelet of the lower part of the flame, that color connects with the upper color of the flame, thereby establishing unity between *malkhut* (tekhelet) and *tiferet* (white). That dual action of tekhelet among the colors—annihilating

and attaching—is similar to the dual action of *malkbut* in the system of *sefirot*. Notably, this text presents several features of tekhelet discussed above, connecting them to parallel features of *malkbut*: the shifting of appearances, the inherent tension between attachment and annihilation, and the intimate connection to the people of Israel.

In *Sefer ha-ḥeshek*, a handbook for the attainment of mystical experience authored by the renowned mystic Abraham Abulafia (1240–1291),¹⁰⁵ we may discern a more systematic approach to the technique of seeing tekhelet in a candle flame.¹⁰⁶ Admittedly, colors do not play a notable role in Abulafia's works—in one of his texts, he even writes that contemplation of lights is not the supreme mystical technique; he favors practices involving the letters of the Hebrew alphabet.¹⁰⁷ However, his reference to tekhelet is notable in the context of mystical experiences.¹⁰⁸ While *Sefer ha-ḥeshek* is difficult to decipher, it contains several references to tekhelet. Abulafia refers to tekhelet as a particular color seen when contemplating a fire flame, a technique that he provides to acquire mystical experience. He writes that the color of the blood of the heart is tekhelet, which is also the color of the blood of the *ḥillazon* (recall that the secretion of the *ḥillazon* was described as its “blood”), and it is the first color seen in a flame.¹⁰⁹ By seeing tekhelet, according to Abulafia, one sees the Throne of Glory—a notion clearly based on Rabbi Meir's comparison. Visions of this kind are enabled by tekhelet because tekhelet is not a real color but rather a “likeness of a color.” It is hard to know what Abulafia means by a “likeness of a color” that is not a color. Perhaps it means a transparent appearance: Abulafia writes that tekhelet does not interfere with the vision, whereas one can conclude that other colors mediate and interfere with visions. But Abulafia also states that tekhelet takes on the appearance of brightness (*zaharurit*, זוהרורית). In addition, he notes that the letters constituting the word *ḥillazon* (חלזון) are the same as those of the term “to the vision” (*la-ḥazon*, לחזון), or “teach the vision” (*lamed ḥazon*, למד חזון), albeit in a different order. That is, the letters associated with tekhelet hint at its visional quality.

Seeing Tekhelet: The Secret of the Tsitsit

Kabbalistic discussions of tekhelet sometimes appear as part of the kabbalistic genre of elaborations on the mystical meanings of particular commandments, and, within this genre, they are known as *ta'amei ha-mitsvot*, under

the sections on the commandment of the *tsitsit*. Gazing at the *tekhelet* thread of the *tsitsit* fulfills an explicit requirement of the Torah. In this section, I will briefly discuss two examples of medieval kabbalistic texts that elaborate on gazing at the *tekhelet* thread of the *tsitsit*, following the biblical requirement to do so in Num. 15:38–40. I will also provide a relevant image.

One manuscript begins by stating, following the biblical commandment, that the purpose of the *tsitsit* is to help one to remember God and his commandments, and then continues to tie together some of the disparate motifs mentioned above.¹¹⁰ The threads of the *tsitsit* are described as visual symbols connecting heaven and earth: they go down from the second *sefirah*, *ḥokhmah*, to the earthly world. Rabbi Meir's statement is quoted to introduce the opposite direction, from the earthly realms to the divine Throne of Glory, and from there to other divine entities, particularly *sefirah ḥokhmah*. The threads connecting heaven and earth are applied in the context of divine judgment as well: the judgment is described as going up and down. Hence, the vertical appearance of the threads of the *tsitsit* is supposed to remind the worshiper of the vertical road of ascension to the celestial realm, as well as the descent of divine forces to operate in this world.

The appearance of *tekhelet* as a thread was used by other kabbalistic texts that highlighted the mnemonic function of the *tsitsit*, presented in the biblical demand “recall all the commandments of the Lord” (Num. 15:39). According to some texts, when one sees the color *tekhelet*, he is reminded of the divine judgment not only due to the color but also because of the similarity of the thread to two other threatening images: a serpent and a whip.¹¹¹ The thread is likened, in some of these texts, to the biblical image of the curative bronze serpent placed by Moses on a pole when the people were plagued by vipers (Num. 21:4–9). According to the Zoharic interpretation, seeing the serpent calls to mind one's sins (probably because in Genesis, a snake is associated with sin). The visual image of the thread is then likened to a whip. When one sees a whip, he becomes aware of the danger of being hit and immediately improves his behavior. The Zoharic author adds the visual associations of a whip to the biblical demand to look at the threads.

From an image (Figure 6 in the color plates) included in a manuscript of the work *Or ha-sekbel* (Light of the intellect), also by Abraham Abulafia, we can perhaps detect aspirations to use the *tekhelet* of the *tsitsit* to attain mystical experiences.¹¹² In this representation, a man is wearing a white garment, phylacteries, and a prayer shawl with blue fringes. I do not know whether

this image reflects a historical reality in which tsitsit with blue threads were once worn, notwithstanding the disappearance of the tekhelet dye, or whether it is an idealized representation. We can conclude, however, that in the mid-to-late fifteenth century, the hue of tekhelet was understood as blue. Moreover, the editors of the catalog of the Hebrew manuscripts of the Vatican library noted that the location of the image is not coincidental; it is facing instructions for meditation that demand the wearing of white clothes, phylacteries, and tsitsit. Had the fringes of the prayer shawl been painted in white, it would have better suited the requirement to wear white clothes. The decision to depict the fringes in blue might hint at the importance attributed to the blue fringes by followers of Abulafia. And, as noted in the previous section, Abulafia indeed gave the color tekhelet a role in his guidelines for meditation, although he was referring to the blue color of a candle flame and not ritual fringes.

Conclusion

In *Blue: The History of a Color*, Michel Pastoureau argues that the color blue became popular in western European culture between the eleventh and fourteenth centuries. This rise in popularity was due to, or at least reflected by, the rise of the twelfth-century cult of the Virgin Mary, with her blue garments.¹¹³ In controversial studies, two eminent scholars of kabbalah argued for a connection between the twelfth-century Marian cult and the contemporaneous rise of the feminine personification of the Godhead in the kabbalah, the *shekhinah*.¹¹⁴ We have seen that the most significant color associated with the *shekhinah* was blue. There are even texts presenting the *shekhinah* dressed in blue in the manner of the Virgin Mary.¹¹⁵ It would be erroneous to conclude from these connections alone, however, that the connection in kabbalistic texts between the *shekhinah* and the color blue was influenced by the western European Marian cult. In the Jewish context, the color blue did not gain in popularity per se during the Middle Ages, since it had played a notable and unique role as early as the Hebrew Bible. Furthermore, as noted above, Rabbi Meir's statement had a considerable influence on the character of tekhelet in Jewish mystical literature, as did visual symbols that connected tekhelet to the *sefirah malkhut*—such as the sea, which is both blue and a vessel to receive water.

What does seem to be a medieval novelty, however, is the systematic approach to color, as well as the understanding of colors as abstract entities, and even as representations of divine entities. This conceptualization is most striking in Jewish mystical texts, in contrast to hermeneutical, legalistic, and scientific texts that approached colors as attributes of physical phenomena. Yet in this mystical context, there is no single way to position tekhelet within the divine system, and no single way of characterizing its qualities. Tekhelet is portrayed as a complex concept that manifests in a variety of ways.

Tekhelet is frequently characterized as a color with contradictory qualities in antiquity as well as in medieval times. Some texts presented tekhelet as a color of spiritual elevation, whereas others depicted it as a portent of danger. Some associated tekhelet with the initial stages of creation, and others with later stages. Some texts connected tekhelet with divine grace, while others linked it to divine judgment. However, in their systematic approach to colors, medieval texts took a step beyond their ancient forebears. The contradictory qualities found earlier in disparate texts were consciously combined, constituting an explicit concept of duality or contradiction, a color of opposites. Such characterization is most striking when applied to the last *sefirah*, *malkhut*, which also carries a dualistic or contradictory quality. The last *sefirah* is depicted as receiving the contradictory forces of judgment and mercy; it is also described as a sapphire stone, glimmering in various hues. Thus, contradiction became an inherent feature of tekhelet.

Tekhelet was not only a color of contradictions but also played a dual role of mediation: it both separated and integrated opposites. Tekhelet was described as the point of transition between light and darkness and between the earthly and the divine. The association of tekhelet with the last *sefirah*, also characterized as a mediating entity, intensified these features.

One significant manifestation of mediation is the presentation of tekhelet as a curtain covering divine entities such as the Throne of Glory, following the biblical description of the tekhelet curtain (*parokhet*) that covered the Ark of the Covenant. In addition to playing a dual role of both separation and connection, the curtain plays another dual role—it both conceals and reveals. It conceals the covered entity but reveals through the appearance of the cover.

How did kabbalists regard the use of color meditation as compared with other mystical techniques? Did they consider it a desirable practice? Did they conceive of it as a universal method, or as suitable only for a select few? In general, colors are accessible phenomena, yet they have an abstract character

that seems appropriate for the representation of higher aspects of the Godhead. Thus, guidelines to visualize colors or gaze at colored objects and phenomena were sometimes favored as a substitute for visualization of the *sefirot* themselves¹¹⁶ in a culture that introduced restrictions on visionary experiences, such as the prohibition on gazing at the *shekhinah*.¹¹⁷ At the same time, visualizing colors was also considered an esoteric technique that should be transmitted orally (rather than in written form) and only to those with sufficient spiritual stature. And some practitioners, such as Abraham Abulafia, deemed the contemplation of colors a relatively inferior mystical technique.

Was tekhelet the foremost color associated with the divine? From Rabbi Meir's comparison, it seems that it was. However, in texts discussing creation and the vision of the chariot of Ezekiel, *yarok* or *yerakrak* seems to take precedence, whereas tekhelet is downgraded to a secondary status. Still, in the context of the human experience—namely, as the color through which one meditates and acts—tekhelet seems to be considered the dominant color. But the question of the relative status of colors is far from simple. The relationship between tekhelet and *yarok* is hard to pin down because references to these colors are not detailed enough to allow clear conclusions. We have already seen this in the writings of commentators and rabbis,¹¹⁸ and the mystical texts do not make it easier to understand. Even if we assume that tekhelet denotes bluish hues and *yarok* represents greenish hues, the fact that blue and green are similar complicates matters because each color term can denote colors that are also associated with the other color term.

While the physical appearance of the color tekhelet seems to have been known to Jews of antiquity, this was not the case in medieval times. The appearance of tekhelet was an enigma for some medieval authors. Possibly, the unavailability of tekhelet made this color obscure, puzzling the biblical commentators who were forced to speculate on the basic nature of tekhelet—what it was made of, what it looked like. Even among those who seem to have had a clear concept of tekhelet, there was more than a single opinion regarding its hue. The different interpretations of the hue of tekhelet—not only between Sepharad and Ashkenaz but within the contexts of each of these diasporas—show that medieval scholars did not have a common image of that color, in contrast to other colors, such as red. This lack of certainty surrounding tekhelet is manifested in the complex and close relationship—at times, even the inability to distinguish—between blue and green.

Notwithstanding the difficulty in ascertaining the hue of tekhelet, numerous mystical texts support the argument presented in Chapter 1 that, in the Middle Ages, tekhelet was associated primarily with dark colors—with darkness in general and with black in particular. We have seen that tekhelet was a major color of the darkness of creation. In addition, the association between tekhelet and the *sefirah* of *ḥokhmah* leads naturally to an association between tekhelet and black. Furthermore, in the Zohar, tekhelet was sometimes associated with a nightly court that dealt with capital cases.

It appears that a number of factors—the unavailability of tekhelet in Jewish material culture, its conceptualization as a divine color with contradictory features, and its unclear hue—combined to constitute tekhelet as an imaginary color with various features, thereby opening new vistas for future interpretation. In addition to later kabbalistic references to the texts mentioned above (on which I will elaborate in Chapter 3), I would like to note two less conventional examples of the reception of the kabbalistic image of blue at two different moments in history.

The first example is a diagram (Figure 7 in the color plates) of the *sefirot* in a seventeenth-century kabbalistic manuscript in which each *sefirah* has a particular color or combination of colors.¹¹⁹ The second and last *sefirot* (*ḥokhmah* and *malkhut*, respectively) are colored blue, with the addition of the first *sefirah*, as follows: the first (*keter*) with light blue; the second (*ḥokhmah*) with a darker blue; and the tenth (*malkhut*) with an even darker blue. The ninth *sefirah* (*yesod*) is divided into two, with the lower half colored in blue and the upper half in red. It seems that the usage of colors mostly corresponds to the scheme in the texts discussed above, although in medieval texts, *ḥokhmah* was described as having a dark shade of blue, similar to black. Here, we have visual evidence for the reception of the associations between colors and the *sefirot* in the early modern period.

The second example is drawn from modern interpretations of the mystical practices surrounding tekhelet. Rabbi Aryeh Kaplan (1934–1983), a prominent advocate of “Jewish meditation,” taught several meditation techniques involving tekhelet. Kaplan was particularly interested in meditation structured on Rabbi Meir’s statement, as well as Abulafia’s proposed meditation on tekhelet, a text that Kaplan interpreted as suggesting both the *tsitsit* and a candle flame.¹²⁰ Rabbi Natan Ophir (b. 1953), who teaches Jewish meditation in contemporary Israel, also promotes meditation on tekhelet and offers a workshop, “Secrets of Colors and Tekhelet Visualization.”¹²¹ Like Kaplan, Ophir has suggested using Rabbi Meir’s statement as a meditative focal point.

Both Kaplan and Ophir demonstrate the long-term influence of the medieval mystical techniques described above. Moreover, although they affirm that the color blue is widely acknowledged to be beneficial for meditation, they stress that the techniques of meditating on tekhelet on the basis of kabbalistic lore are distinctively Jewish.

Kabbalah-based practices involving colors were not limited to the mystical techniques discussed above but included other practices, such as apotropaic magic. In Chapter 3, focusing on the early modern period, I will explore such practices.

Chapter 3

Blue Garments in Early Modern Judaism Between Kabbalistic Symbolism and Social Practice

In a responsum published in 2014, the Jerusalem rabbi Ben-Tzion Mutzafi (b. 1946) discussed various customs in which colored objects were used to protect oneself from the evil eye, including wearing a red thread around the wrist and carrying a blue stone.¹ Mutzafi preferred the blue stone over the red thread, arguing that the latter is a Christian custom, whereas the color blue—tekhelet—is of Jewish origin. Furthermore, allegedly based on the writings of the sixteenth-century Safed kabbalist Moses Cordovero, Mutzafi wrote that, in general, the color red is associated with Christians, green with Muslims, and blue with Jews. While Mutzafi's textual references to Cordovero are less than precise, his remarks reflect a relation between the Jewish religious and spiritual significance associated with the color blue, on the one hand, and the daily practices in which this color is used, particularly as a defense against the evil eye, on the other.

This chapter addresses the connection between the use of the color blue in the social realm and the meanings, both symbolic and spiritual, attributed to this color. Thus, the discussion links the spiritual characteristics attributed to tekhelet, discussed in Chapter 2, with the material manifestations of that color presented in Chapter 1. It deals primarily with blue objects used by Jews, in particular textiles, in the early modern period, and it concludes with a peek into modern times. I claim that the encounter between these practices and the meanings attributed to them contributed to the perception of blue as a significant color for Jews.²

The developing European discourse on colors in the early modern period forms the backdrop to this discussion. According to color scholar Roy

Osborne, the sixteenth century witnessed extensive writing on color symbolism.³ Osborne links this expanding literature to the rise of theoretical discourse on art, as well as attempts to revive classical culture by exploring classical color language. I would add to these remarks that the growing interest in colors in the early modern period was also an outgrowth of the scientific revolution of the sixteenth and seventeenth centuries.⁴ Additionally, a burgeoning preoccupation with alchemy and magic included the study of materials and their attributes, particularly colors.⁵ Moreover, in this “age of discoveries,” previously unknown dyes and pigments were brought to Europe and the Mediterranean basin from the newly discovered Americas.⁶ And, as in the Middle Ages, Jews in the seventeenth and eighteenth centuries played a prominent role in importing dyes, particularly indigo, from America and Asia to Europe, and then exporting them to the Levant, especially through Aleppo.⁷ Although this chapter does not deal with the dye trade, alchemy, or art, it is worth noting that the Jewish religious discourse on colors was part of a broader discourse on colors and colorants that was not limited to religion.

Compulsory Preference: Dark Clothing of Ottoman Jews

The Ottoman authorities tended to limit Jews’ clothing to dark colors, ranging from blue to black.⁸ For example, an edict from the sixteenth century required non-Muslim women to wear skirts of a particular fabric dyed blue or black.⁹ In another case, according to an English clergyman, a grand vizier in Aleppo around the year 1600 was offended by Jews wearing red hats, and commanded them to wear blue hats.¹⁰ An Ottoman edict from 1758 also mandated that Jews wear dark blue clothing or other dark hues.¹¹

There is a smattering of firsthand evidence concerning Jews’ use of dark colors for their apparel. An early seventeenth-century traveler to the Ottoman Empire reported that Jews wore primarily purple.¹² Another visitor to the Ottoman lands in that period wrote that Jews usually dressed in violet.¹³ And, in the early eighteenth century, the French ambassador to Turkey described Jews as dressing in black.¹⁴ Contemporaneous paintings from the sixteenth to the eighteenth century confirm this impression.¹⁵

Although it is tempting to conclude from these examples that Jews tended to wear dark colors in the Ottoman Empire, one should be cautious

about drawing definite conclusions. It is difficult to argue that a specific color actually held a dominant status in Jewish attire. Jews' clothing was as diverse as their places of residence, and Jews often dressed like their non-Jewish neighbors. Moreover, it is hard to know what Jews wore because sources describing their appearance are scarce. Depictions of Jews in paintings do not necessarily represent their actual dress, whereas textual sources have their own challenges, such as determining what color is referred to by a particular color term in the text.¹⁶ Finally, the existence of legislation tells us nothing about its enforcement. Although it is reasonable to assume that some people obeyed the laws and edicts, sometimes matters work in precisely the opposite direction, and the presence of prohibitions indicates that a behavior remained in practice. What can we say, then, about the color of the clothing of Ottoman Jews?

We see from the examples above that legislation requiring Jews to don dark garments became more prevalent in the sixteenth century. However, in medieval times under Muslim rule, there was less consistency on the matter. It seems that while Caliph Umar II (682–720) was the first to require the Jews to wear distinctive markings, it was the Abbasid caliph al-Mutawakkil who, in 849, ordered Jews to wear yellow clothing.¹⁷ In the Maghreb, in 1198, the Almohad ruler Abū Yusuf al-Manṣūr required Jews to wear garments of dark blue, but Muhammad al-Nasir, his son who succeeded him, agreed to change the color to yellow.¹⁸ In 1301, the Mamluk authorities in Egypt required non-Muslims under their rule to wear turbans in particular colors: Jews in yellow, Christians in blue, and Samaritans in red.¹⁹ In 1419, Jews and Christians were required to wear buttons of specific colors (again: blue for Christians, yellow for Jews).²⁰ In these cases, not only were the Jews not required to wear blue; the color was associated with Christians. But whether imposed on Jews or Christians, the association between blue and foreigners was not only a matter of legislation; it was also influenced by local and regional preferences. For example, in North Africa, blue had been perceived as foreign and negative since pre-Islamic times. It is thus unsurprising that it was associated with foreigners.²¹

Explaining these highly specific demands placed on non-Muslims in the Ottoman Empire, Surayia Faroqhi argues that in the mid-sixteenth century among the Ottoman elite, the entire range from dark blue to black was considered ill-omened. She further claims that this belief is linked to colors associated with mourning in the fifteenth and sixteenth centuries. By contrast, the Ottoman elite preferred bright colors from red to blue.²² I would like to

add another element to Faruqi's explanation: Ottoman Jews had a narrow choice of available sartorial hues, as they were forbidden to wear the color green, and they had an aversion to the color red.

The color green was emphatically associated with Islam;²³ the prohibition on wearing green clothing was an enduring restriction in Muslim countries, particularly those under Ottoman rule, notwithstanding the diversity in sumptuary laws across time and place.²⁴ For example, an eighteenth-century traveler to the Levant reported that "the Jews in Turkey dress like the Turks except that they may not wear green, nor a white turban, nor a red jacket."²⁵ In eighteenth-century Ottoman Jerusalem, only Muslims were allowed to wear green.²⁶ And, in the 1820s, an observer of Egyptian Jews wrote that with the exception of green, which was forbidden, all colors could be worn.²⁷ Such prohibitions, however, were not always enforced, and Jews did wear green clothing without being harmed, as can be learned, for example, from a letter penned by Rabbi Gershon of Kutov to his brother-in-law, Israel Baal Shem Tov, the so-called founder of Hasidism.²⁸

The life of Sabbatai Tsevi, the seventeenth-century messianic claimant, provides us with two instances in which the color green is used by Jews in connection with Islam. Contemporaneous sources depict Sabbatai as being allowed to wear a green mantle or headgear and riding a horse, both acts forbidden to non-Muslims, during a public act of surrounding the city of Jerusalem seven times in 1665. Gershom Scholem, in his seminal study on Sabbatai, noted that green was considered a messianic color in Islam and speculated that Sabbatai thus signified his messianic intentions.²⁹ Alternatively, however, he may have donned a green mantle and rode a horse in the spirit of rebellion. Over time, the color green came to be known as "the color of Sabbatai Tsevi" among Sabbatai's supporters, who sometimes wore green garments or sashes like their master.³⁰ In 1666, when Sabbatai converted to Islam, it was reported that the sultan placed a crown with a green scarf on his head, symbolizing his new Muslim identity.³¹ Both incidents show that wearing green clothing might have been perceived as provocative and non-Jewish.

While the prohibition of using green color in dress was introduced by non-Jewish authorities, restrictions on wearing red came also from within Jewish society.³² Among rabbis—although not necessarily among laypeople—it is possible to discern a negative attitude toward the color red in medieval times. A statement in the Babylonian Talmud about a rabbi who tore the garment of a woman was understood by the eleventh-century *'Arukh* dictionary of the Talmud as referring to a red garment representing licentiousness.³³ The

negative attitude toward red in general and toward red clothing in particular continued into the sixteenth century. As we will see below, it was emphasized by Eastern European rabbinic authorities, but it is discernible among Ottoman Jews as well. In 1720, Rabbi Eliyahu ha-Cohen of Izmir published a book, *Midrash talpiot*, in which he quoted the aforementioned medieval Spanish commentator Bahye ben Asher as saying that whereas red and green are the colors of pride, tekhelet is the color of modesty and humility.³⁴

In addition to the association between red and licentiousness or pride, red was considered the color of divine judgment.³⁵ Red, the color of blood in general and of menstrual blood in particular, may also have connoted female impurity. Thus, the aversion to red might have expressed an attempt to distance oneself from an association with impurity.³⁶

By contrast, it is possible to discern Jews' growing preference for the color black. Since antiquity, black has been considered the color of humility. It has also been associated with mourning, among Jews and non-Jews alike, especially since early modern times.³⁷ And Jews at various times and in different places have worn black to show that they mourned the destruction of Jerusalem.³⁸

I cannot decisively conclude that Jews tended to wear dark colors on the basis of the above. However, it is reasonable to assume an inclination to dress in dark colors when taking into account various factors and types of sources, such as sumptuary laws introduced by the non-Jewish authorities and internal regulations imposed by the communities on their members. Additionally, there were preferences related to fashion and the symbolism of particular colors, as well as the availability of dyes. The phenomenon itself was the product of a complex interaction between these factors. Accordingly, the association between Jews and dark clothing serves to highlight how symbolism, preference, regulations, and praxis can become deeply entwined. Regulations influenced by symbolism can lead to practices that may eventually become preferences. Conversely, preferences and their related practices can result in further regulations.

Blue and the Symbolism of Dyed Garments in Sixteenth-Century Safed

According to a popular legend, the converso kabbalist and martyr Shlomo Molkho (1500–1532) wrote to his Safedian lover, daughter of Rabbi Yaakov

Beirav, that “three things captured my heart: the blue skies of Galilee, the blue walls of Safed, and the blue of your eyes.”³⁹ Molkho never visited Safed, and it is unlikely that he fell in love with the daughter of Rabbi Beirav.⁴⁰ Still, this story reflects the impression of contemporary visitors to Safed, who can observe numerous walls painted light blue, inside and outside houses and synagogues, as well as blue tombstones in the old Safed Jewish cemetery. Through this legend, which conveys the image of the color blue as spiritual, journalists and tour guides connect their audiences with sixteenth-century Safed, a town characterized by a high spiritual charge.

In fact, there is no evidence that the walls of Safed were colored blue in the sixteenth century. There are, however, several historical sources that indicate the significant role of colors in sixteenth-century Safed in shaping ideas and practices about the use of the color blue. In this section, I will discuss the more theoretical Safedian discourse on the color blue, before moving on in later sections to discuss how this discourse influenced particular practices.

In the sixteenth century, the Galilean town of Safed witnessed a period of cultural and economic development. After the expulsion of the Jews from Spain in 1492, many Jews moved to the relatively tolerant Ottoman Empire. Some of them settled in Safed.⁴¹ The city was also a hub for textile manufacture, especially for colored textiles.⁴² The dyes of Safed were considered to be of such high quality that textiles were sent to Safed from other places in order to be dyed. The basic palette of Safed’s wool industry included three colors—blue, red, and yellow—from which other colors were produced.⁴³

Much has been written about sixteenth-century Safedian kabbalah and halakhah. For the present purposes, the most noteworthy aspect of this scholarship concerns the intensified association between kabbalah and ritual. Sixteenth-century kabbalists interpreted and organized medieval kabbalistic knowledge and applied these understandings to ritual practice.⁴⁴ In particular, it is possible to discern an association between kabbalistic color symbolism and clothing practices. We will consider, in this regard, the two most prominent kabbalists of sixteenth-century Safed: Moses Cordovero and Isaac Luria.

Moses Cordovero (1522–1570), a student of Joseph Karo, was a rabbi and a kabbalist in Safed. Gershom Scholem, the preeminent scholar of Jewish mysticism, wrote that “of the theoreticians of Jewish mysticism Cordovero is undoubtedly the greatest.”⁴⁵ In 1548, when Cordovero was twenty-six, he completed his monumental work *Pardes rimonim* (Orchard of pomegranates),

which was published posthumously. Later in his life, he completed his commentary to the Zohar, *Or yakar* (Precious light).

There are numerous references to colors in Cordovero's writings, but the most important is a treatise on colors, *Sha'ar ha-gevanim* (Gate of colors). This text is the tenth of thirty-two sections of *Pardes rimonim*.⁴⁶ *Gate of Colors* is short, comprising only some five folio pages in printed form. Notwithstanding its brevity, it is the most comprehensive and systematic text on colors among kabbalistic texts, and perhaps among Jewish texts in general.

In the first chapter of *Gate of Colors*, Cordovero presents a theory of the use of color for magical purposes. The reader is immediately warned: while in various works of kabbalah, colors are described as attributes of the *sefirot*, the emanations of the Godhead, these are only metaphors—not metaphors for the *sefirot* themselves but rather for their operations. Spiritual entities such as *sefirot* cannot be characterized by physical phenomena such as colors. But the operation of a particular *sefirah* can take place in the physical world and can be signified and even invoked by a particular color. Hence, through the use of a specific color, such as wearing clothing in that color, one can draw down from above the particular force of the *sefirah* associated with that color, thereby activating that *sefirah* in a specific desired direction. For instance, as the color white symbolizes mercy, a person donning a white garment can draw mercy from *sefirot* associated with mercy. And a person wearing clothing colored red, the color of judgment, can draw judgment from *sefirot* associated with judgment. Moshe Idel has noted that this theory is an example of Cordovero's wider formulations of astral magic, which were part of a growing interest in magic in certain segments of the Jewish elite in that period. As mentioned above, such interest can be seen as part of the broader rise of magic in the European Renaissance.⁴⁷

Cordovero devotes the main body of *Gate of Colors* to a discussion of each of the *sefirot*, elaborating on the colors associated in previous kabbalistic literature with that *sefirah*. The color term *tekhelet* is the color that appears most frequently in *Gate of Colors* and is afforded the most elaborate discussion. Cordovero associates *tekhelet* with more than a single *sefirah*, referencing it in his discussions on the *sefirot* of *hokhmah*, *binah*, *hesed*, *gevurah*, and *malkhut*. This is an expression of his aim to summarize and harmonize the various traditions of medieval kabbalah. However, Cordovero explicitly writes that the major manifestation of *tekhelet* (*'ikar ha-tekhelet*) is in *malkhut*; Cordovero devotes the most attention to that manifestation of *tekhelet*. Hence, the entire fourth chapter is dedicated to *tekhelet* as the color of

malkhut. This emphasis on the association between tekhelet and *malkhut* is related to his focus on Zoharic sources that point in that direction. In each of the *sefirot*, Cordovero introduces different characterizations of tekhelet.⁴⁸ When Cordovero refers to tekhelet in the contexts of upper *sefirot*—primarily *hokhmah* but also *binah* and *hesed*—he emphasizes tekhelet's aspect of grace. However, the main characterization of tekhelet in Cordovero's writing is as a color of judgment.⁴⁹ Cordovero elaborates on tekhelet as a manifestation of judgment in his discussion of two *sefirot*: the fifth *sefirah*, *din* or *gevurah*, in which divine judgment features prominently, and the tenth *sefirah*, *malkhut*. In the context of the fifth *sefirah*, tekhelet is a mild judgment, compared with red.⁵⁰ In the context of the tenth *sefirah*, tekhelet is a harsher judgment than *yarok* (green), which is presented as a color of grace.⁵¹ In both cases, black is the most threatening color of all, for it is associated with the forces of evil outside the Godhead.

In his selection of Zoharic texts, Cordovero highlights the dynamic and transformative character of color in general and tekhelet in particular. He quotes two texts discussed above: one text describing the metamorphosis of red into tekhelet; and another in which tekhelet turns into *yarok*.⁵² This awareness of the mixing and transforming of colors may well have been informed by the contemporaneous Safedian dyeing industry. Indeed, when seeking to explain the spiritual dynamics of two colors mixed together, which represents a similar concurrent operation of two *sefirot*, Cordovero remarks that “that sort of composition is known to dyers.”⁵³ In so doing, he explicitly links the spiritual interactions in the Godhead with the material practice of the mixing of dyes.

The second prominent Safedian kabbalist to refer significantly to tekhelet was Isaac Luria (1534–1572). Luria, a disciple of Cordovero, is considered the founder of the influential Lurianic kabbalistic school. Although, unlike his master, Luria did not write a general treatise on colors, he and his disciples referred to tekhelet in practical contexts. For example, Luria's disciple Haim Vital discusses this color in the context of the secrets of the *tsitsit*.⁵⁴ Additionally, Luria elaborates on tekhelet in his discussion of the secrets of covering oneself with blue cloth, as we shall see below.

Luria also provides us with what is perhaps the most prominent Jewish example of mystical symbolism applied to a ritual of clothing: the custom of wearing white garments on the Sabbath. Although this custom was not an innovation of Safed kabbalists, they emphasized it heavily.⁵⁵ The wearing of white, which was considered the color of mercy, was explained by kabbalists

in ways consistent with Cordovero's theory of colors. Thus, one reason to don white clothing was to pull divine influx down to this world. Another reason was to cover oneself with mercy in order to be protected before going to heaven after death.

Such references are an expression of the broader character of the ritualization of earlier kabbalistic knowledge in Safedian kabbalah, wherein Safedian kabbalists introduced kabbalistic interpretations to existing rituals, while also creating new rituals, such as going to the outskirts of Safed on Friday afternoons to welcome the Sabbath.

A Kabbalistic Myth About the Blue Cover of the *Shekhinah*

As we have seen in Chapter 2, an important expression of the ambivalent character of tekhelet is the motif of the curtain, which at once reveals and conceals.⁵⁶ A similar duality can be attributed to clothing. Garments reveal something about their wearers, but at the same time separate them from the external world. They attract but also distance. In this section, I present interpretations of a Zoharic myth featuring a blue cloth that covers *malkhut*, also called the *shekhinah*, the feminine aspect of the Godhead. This myth, which is related to biblical verses that describe the blue cover of the Ark of the Covenant (Num. 4:6), was quoted and developed by early modern kabbalists. As such, it is a prominent manifestation of the history of the kabbalistic symbolism attached to the color tekhelet. Moreover, it provided a basis for practices using blue clothing, thereby connecting religious theory and social practice.

To understand the Zoharic myth, we must first take into account the traditional understanding of the *sefirah* of *malkhut* as the feminine aspect of the Godhead. The kabbalists sometimes personified the divine emanations that they described. For example, *malkhut* (often referred to as the *shekhinah*) is sometimes portrayed as a woman engaged in a marital relationship with the sixth emanation. However, she is vulnerable, and there is a danger that demonic forces of evil will attempt to penetrate her. This penetration is often portrayed in sexual terms, as mating with the forces of evil instead of her husband (one of the *sefirot*), or as being raped by evil. This act is the demonic forces' way of penetrating the Godhead and disseminating evil in the world.⁵⁷

The Zoharic myth about the tekhelet garment of the *shekbinah/malkhut* stems from the biblical verse describing the tekhelet cloth that covered the Ark when it was transferred from place to place: “At the breaking of camp, Aaron and his sons shall go in and take down the screening curtain and cover the Ark of the Covenant with it. They shall lay a covering of fine leather over it and spread a cloth of pure tekhelet on top; and they shall put its poles in place” (Num. 4:5–6).⁵⁸ The Zohar refers to this tekhelet cloth thus:

This holy moon [malkhut] is beautifully white, with all colors sparkling within Her, embroidered. She has exactly the same fine whiteness as the sun [tiferet]. In that sea of Hers, within seventy years, a certain fish emerges, from which is extracted tekhelet. She takes this dye, prepares it, and covers Herself outwardly with this color. Not that this color is Her garment—for after all, “Her garment is linen and purple” (Prov. 31:22)—but the outer covering is this color. Similarly with the Dwelling [the Tabernacle], all of which was beautifully embroidered within, and afterward “they shall . . . spread a cloth of pure tekhelet on top” (Num. 4:6). Why? Because beneath this sea are depths of the sea, totality of male and female, and they have an evil eye, gazing. When they gaze, the color tekhela [*sic*], confronts their eyes, and their eyes cannot prevail. Within, she is arrayed in all colors, fittingly embroidered, ranging to the four corners of the world (Zohar 3:163b).⁵⁹

This text connects three parallel symbols of *malkhut*, the last emanation: the moon, the Ark of the Tabernacle, and the sea. The moon symbolizes the internal (and implicitly higher) aspect of *malkhut*. The sun symbolizes the sixth emanation. The statement that the white color of the moon is the same as the white color of the sun is based on the physical fact that the light of the moon is a reflection of the color of the sun; this fact is understood in kabbalistic texts as a symbol of the notion that *malkhut* receives the divine influx from the sixth emanation. The statement that all colors sparkle in the moon symbolizes the fact that *malkhut* receives the divine influx from all the emanations above it. The Ark of the Tabernacle also symbolizes *malkhut*, so that the “cloth of pure tekhelet” that covered the biblical ark protected *malkhut* from the evil eye of the demonic forces. But this covering is not limited to the biblical narrative; it is a general rule. The demonic forces always attempt to cast an evil eye on the *shekbinah*, but a divine tekhelet cover

prevents them from causing harm. The entire structure of the myth is connected to the sea, which is described as the habitat of the *ḥillazon* from which tekhelet is produced and of the forces of evil. The protective operation of tekhelet seems to be a kind of homeopathic magic: the sea, which is the origin of harmful forces, is also the origin of tekhelet, the remedy against these forces.⁶⁰

The tekhelet garment of *malkhut* can be understood as yet another attempt to control, prohibit, and prevent gazing at the sacred—attempts that were noted in Chapter 2.⁶¹ But whereas in the Bible, the tekhelet cloth was meant to shield human beings from being harmed by the overwhelming power of holy objects, here the moon (standing in for *malkhut*) clothes herself in tekhelet to shield herself from demonic forces. In such a reading, *malkhut* is too sacred to be gazed upon. Some cover is required in order to separate the Godhead from what is outside the Godhead.⁶² The tekhelet garment allows *malkhut* to continue her inner, colorful sacred life inside the Godhead, without being exposed to dangers coming from outside the Godhead. In sexual terms, the tekhelet garment protects the chastity of *malkhut* from the sexual desires of external forces, as expressed by their evil gaze.

The myth about the tekhelet garment of *malkhut* is then applied as a human ritual. In the text that follows the quotation, the Zohar connects the tekhelet cover of *malkhut* with the tekhelet of the tsitsit: when one covers himself with a tekhelet-tasseled garment, he cloaks himself in a tekhelet garment, just as *malkhut* does. They are both protected: she is protected within the upper worlds; he is protected within the lower worlds. But these acts of covering—in the upper worlds and in the lower worlds—are not separate. The Zoharic text actually constitutes the tsitsit as a symbol of *malkhut*. Accordingly, the tsitsit receives powers of *malkhut*, thereby becoming an object that protects its wearer. Thus, the tassel carries a double role: it is a symbol representing divine processes, but it also has magical capabilities that protect not only its wearer but also his divine counterpart.

As I shall demonstrate, the tekhelet thread of the tsitsit offers protection against the evil eye of any person, particularly that of a non-Jew. Hence, in both the upper and lower realms, the evil is related to a gaze, and the protection is color, which also relies on the sense of sight. There is a myth about the potency of *malkhut* to protect herself in the upper realms, and there is a ritual that enables the worshiper in the lower realms to receive and embody that protection. As Scholem observed, kabbalistic ritual strengthens existing myths, while those myths nourish and nurture kabbalistic ritual.⁶³

The myth of the tekhelet garment of the *shekhinah* is not particularly striking in the Zohar, in which it is one among innumerable kabbalistic interpretations of biblical verses and commandments. However, this myth gained prominence in the sixteenth century. It influenced early modern kabbalists, who developed the motif of the garment, particularly in practices of cloaking both human and divine entities against the evil eye. Of the numerous references to this Zoharic text by later kabbalists, I consider primarily the interpretations of the aforementioned pillars of sixteenth-century kabbalah: Moses Cordovero and Isaac Luria. Each interpreted the myth in a particular direction.

Cordovero attributed special importance to the Zoharic myth about the tekhelet garment of *malkhut*; he referred to it on several occasions and quoted it more often than other texts that mention tekhelet.⁶⁴ His interpretation of this myth is consistent with his aforementioned emphasis on the judgment aspects of tekhelet.⁶⁵ In *Gate of Colors*, in accordance with the Zohar's understanding of the tekhelet garment, Cordovero, too, states that tekhelet is the color of the lowest aspect of *malkhut* and emphasizes its being close to (but not inside) the forces of evil. However, he goes beyond the Zoharic statements quoted above.⁶⁶ Whereas tekhelet appeared in the Zohar as a merely a passive cover concealing *malkhut*, Cordovero imbues it with a more ominous and aggressive role—for Cordovero, it is an executor of divine judgment. The threatening image of tekhelet is even more striking in Cordovero's *Or yakar*, his commentary on the Zohar. In his scattered references to tekhelet in *Or yakar*, Cordovero brings tekhelet even closer to the forces of evil, the so-called harsh *kelipot*.⁶⁷ Hence, in both works, *Pardes rimonim* and *Or yakar*, Cordovero presents tekhelet as representing the threatening force of the Godhead, directed toward both human beings and forces of evil.⁶⁸

Luria's interpretation of the myth of the blue garment of the *shekhinah* appears in his interpretation of a section of the Zohar at the end of *parashat Terumah* titled *Sifra detsni'uta* ("The Concealed Book" or "The Book of Concealment"). Considered particularly esoteric, *Sifra detsni'uta* inspired various commentaries by later kabbalists, including Luria.⁶⁹ His understanding of the myth of the tekhelet garment of *malkhut* emerges from his interpretation of the aforementioned Zoharic text about the role of tekhelet in creation.⁷⁰ According to Luria's paraphrase of this text, the hue of tekhelet, which symbolizes mild judgment, is one of three hues visible in the *sefirah* of *malkhut*. The two others are red, the color of harsh judgment, and black, the color of the judgment of the *kelipot*.⁷¹ Tekhelet, which is *malkhut*,⁷² changed

its colors during the process of creation, which was also a process in which the *sefirah* descended through the divine realms. From being colorless in the uppermost divine world, it turned red in a lower world, and then to the color of tekhelet in an even lower world.⁷³ This process, which is the attenuation of the element of judgment, is a process in which the color tekhelet actually reveals the character of *malkhut*, rather than covering and concealing it. In more mythical and visual terms, the gradual disappearance of the reddish hues of tekhelet and the appearance of the hue of tekhelet (which seems to be bluish) is described as dismantling an external red garment (the term *apirion*, denoting a textile cover such as a canopy, is explicitly used) and revealing an internal tekhelet garment. This self-restriction of divine grace and judgment was intended to let the forces of evil emerge so that they could later be controlled and even overcome.

Notably, Luria's interpretation breaks with that of the Zohar. Unlike the Zohar, in which the force of judgment was attenuated in the process of creation, Luria asserts that the Godhead in its entirety, including both judgment and mercy, attenuated itself. The result of this self-contraction was the exposure of *malkhut*, which attracted the forces of evil more than it did in the Zoharic presentations. This conclusion seems to contradict the Zoharic teaching about the tekhelet garment of *malkhut* that banishes forces of evil. Luria is well aware of the difficulty and resolves it thus: "The holy moon [*malkhut*]⁷⁴ spreads in the seven supreme holy years,⁷⁵ and the male and female shells [*kelipot*] look for a foothold in the holy place, and she [the holy moon] covers herself with a tekhelet mantle, which is close to them [the shells]. And they feed their eyes from that tekhelet, held by it, and not entering into the place of supreme holiness."⁷⁶ Luria interprets the function of the tekhelet garment differently from the way Cordovero does. The Zohar describes the tekhelet garment as a cover that technically prevents the *kelipot* (forces of evil) from seeing *malkhut*. Cordovero, who emphasized tekhelet's aggressive posture, depicted it as warding off the harsh *kelipot*. Luria carves out a different path and presents the external tekhelet garment as catching and encouraging the eyes of the *kelipot*, thereby obstructing their ability to see inside the place of holiness. Thus, according to Luria, tekhelet is an attractive color for the forces of evil that eventually distracts and distances them from their goal of harming holiness. The cloaking of *malkhut* in a tekhelet garment is an act of exposure for the sake of disclosure. It works much like the cape wielded by bullfighters, which simultaneously attracts

the bull to the vicinity of the bullfighter, and yet keeps it at a short distance from him.

More broadly, the Zohar, Cordovero, and Luria introduce three different strategies to address the threat of the forces of evil, described in midrashic sources and even more vividly in kabbalistic texts: shying away from evil, fighting evil, and appeasing evil. The Zohar presents an attempt to hide from the forces of evil. Cordovero introduces a more aggressive approach of combating evil. Finally, Luria employs a change of strategy, appeasing evil with tekhelet in a manner that could be described as “giving the devil his due.”⁷⁷

Luria makes use of images associated with tekhelet in a fashion that emphasizes their mythical character.⁷⁸ One aspect is the marine context of tekhelet, which brings together the *ḥillazon*/fish (Luria uses here the terms *ḥillazon* and *nuna*—“fish” in Aramaic—interchangeably), salt, and the sea.⁷⁹ In this instance, Luria draws on the kabbalistic sexual associations of fish: the *ḥillazon*/fish that produces tekhelet is presented as a manifestation of the ninth emanation, *yesod*, which is a masculine emanation. As such, this *ḥillazon*/fish mates with a feminine element, an intercourse that produces tekhelet. Accordingly, I suggest that the liquid of the tekhelet dye may have been perceived as the semen of the snail that was ejaculated into the sea, which is a symbol of *malkhut*.⁸⁰

The association between the *ḥillazon* and salt has magical as well as sexual components. Maimonides stated that the *ḥillazon* lives in “the sea of salt.”⁸¹ Luria wrote (probably after Maimonides) that the tekhelet dye itself is called “the sea of salt,” and then emphasized that the salt must exist because of the danger of the forces of evil. Since salt is associated with magical capabilities in various cultures,⁸² it is possible that by mentioning the salt, Luria means to amplify the magical potential of tekhelet as a block against the evil eye. In addition, the association of the liquid of the tekhelet dye with salt supports its identification with semen.

Luria further develops the sexual potential of the myth of the tekhelet cover of *malkhut* by weaving together various symbols of the *sefirah yesod*: the *ḥillazon*/fish, *tsaddik*, Joseph, and the angel Metatron.⁸³ He analogizes between the covering of *malkhut* with the tekhelet garment produced by the *ḥillazon*/fish, and a Zoharic narrative (based on a midrash) according to which the biblical Joseph covered his mother, Rachel, with his arms so that Esau would not be able to look at her lustfully with his evil eye.⁸⁴ Both actions were intended to defend the covered figure from the sight of evil. And because

Joseph had to cover his mother from the lustful sight of Esau, we can conclude that the covering of *malkhut* with tekhelet was also meant to shield her from the sexual desires of the forces of evil. Thus, we can conclude that the Lurianic interpretation tends to highlight the desire for *malkhut* to mate inside the system of the *sefirot*, with a masculine *sefirah*, rather than with the forces of evil.

In this section, I presented elaborations of the Zoharic myth by the Safedian kabbalists Cordovero and Luria. With the exception of the kabbalistic interpretation of the commandment of the *tsitsit*, these interpretations remained in the theoretical realm of myth and symbolism. However, a practical dimension was added to that myth in the early modern period. Jews received this kabbalistic myth as a theological or mythical basis for practices in which the human body was covered with the color blue to ward off the evil eye. We now turn to that subject.

The Color Blue Against the Evil Eye

The myth about the tekhelet garment of *malkhut* highlights the protective quality of tekhelet. However, this protective quality goes far beyond that particular myth. It appears first and foremost in the protective role of the *tsitsit*, which is presented in the Bible as a means to ward off sinful behavior; later rabbinic sources further stress the talismanic role of the *tsitsit*. The Babylonian Talmud, for instance, lists the *tsitsit* together with other ritual objects—the tefillin (phylacteries) and the mezuzah (a roll of parchment containing Torah verses that is affixed to doorposts in Jewish homes)—as objects that protect anyone using them from sin.⁸⁵ Both the thread of tekhelet and the strips of the phylacteries are mnemonic objects. Namely, they protect from sin because seeing them reminds the viewer of God's commandments and the importance of observing them. The protection depends on the act of seeing the object and, in the case of the *tsitsit*, seeing the tekhelet thread. In addition to its capacity to defend against sin, however, another perceived protective role of tekhelet, since at least the sixteenth century, has been its ability to protect against the evil eye—a role associated with the apotropaic qualities attributed to the color blue. Here, too, as I will show in this section, seeing the color gives rise to both danger and protection.

As in other Mediterranean cultures,⁸⁶ belief in the evil eye has been common among Jews:⁸⁷ the belief that the stare or glance of malevolent people

can do harm is widespread.⁸⁸ Certain individuals are perceived to be especially vulnerable, such as women immediately after giving birth, as well as young children; through the ages, specific antidotes have been believed to be particularly effective. In Mediterranean and Middle Eastern cultures, the color blue is one of the antidotes thought to possess protective powers against the evil eye.⁸⁹ Scholarly explanations for this phenomenon usually share the following characteristics: (1) they are based on evidence from the nineteenth and twentieth centuries; (2) they usually depict beliefs regarding the evil eye as folk or popular culture and do not consider them part of a textual religious tradition; and (3) the explanations for the power of the color blue are usually hypothetical and based on speculations on the part of the scholars (usually folklorists or anthropologists) or their informants. Such explanations include that one who uses the color blue attaches himself to the divine, thereby lifting himself above earthly threats,⁹⁰ or that blue objects have homeopathic magical powers against blue-colored dangers, such as people with blue eyes.⁹¹ In addition, there are numerous examples of using the color blue in wall paintings and in jewelry among non-Ashkenazic Jews (see Figures 8–12 in the color plates). In this section, I will show that in the Jewish context, there are also textual explanations for the custom of using blue against the evil eye.

Before delving into the ability of the color blue to defend against the evil eye in the Jewish tradition, I would like to note that the myth of the blue cover of the *shekhinah* became, in Safedian kabbalah and its offshoots, a basis for explaining practices of covering, even if the covering was not particularly associated with the color tekhelet. We find two examples in the writing of the kabbalist Ḥaim Hacohen (c. 1585–1655), a disciple of Ḥaim Vital (Luria's prominent disciple), who spent most of his life in Syria. His major work, *Mekor ḥaim* (Source of life), is a legal and kabbalistic commentary on Joseph Karo's *Shulḥan 'arukh*. In this work, Hacohen repeatedly analogizes between customs of covering objects and the covering of *malkhut* with a tekhelet cloth. One example is the custom of covering the table or the bread on the table in the middle of the ritual of kiddush (sanctification) of Sabbath.⁹² This ritual is often interpreted by kabbalists as an act of mating between the male worshiper and the female *malkhut*. The novel element is the explicit reference to the relevant Zoharic text, claiming that spreading the tablecloth is like putting a tekhelet cloth over *malkhut* so that the forces of evil will not interfere in the ritual of the kiddush. This example hints at the sexual aspect of this motif. The second example is the special permission given to women to go out into the public sphere with a shawl covering their

faces on the Sabbath, even though carrying objects is usually forbidden, according to the Sabbath laws. This permission is also justified as protection from forces of evil, similar to the covering of *malkbut* with a tekhelet cloth.⁹³ In this example, the apotropaic role of the cover is more emphasized than the sexual aspect. Both examples depict the furnishing of existing rituals with kabbalistic meaning: the covering of *malkbut* with a tekhelet cloth. Note that the act of covering up is the main point here; the color of the actual cloth is not an issue, but the act of covering up involves the protective qualities of tekhelet.

While the magical potential of the color blue was alluded to as early as the Zohar, it was Cordovero, followed by other sixteenth- and seventeenth-century kabbalists, who introduced an explicit magical approach regarding the color blue. I mentioned Cordovero's theory of color magic, according to which wearing a garment with a particular color gives the person who wears it the powers associated with that color. I propose that this theory, together with the myth about the tekhelet garment of *malkbut*, became a theoretical basis for rituals by Cordovero and other kabbalists in which the color blue (especially blue clothing) is used to ward off forces of evil. If one combines the first chapter of *Gate of Colors*, which presents the theory of color magic, and the fourth chapter, which quotes the myth of the blue garments, one can conclude that when *malkbut* wears a tekhelet-colored garment, she gains protection from the forces of evil.

In order to apply the myth of the tekhelet garment of *malkbut* in the material, human world, however, Cordovero had to determine the specific hue denoted by the word *tekhelet*.⁹⁴ In *Gate of Colors*, he does so by identifying the hue of tekhelet with two non-Hebrew color terms: *haniad* (which probably refers to indigo, originally from India) and *azul* (blue in Spanish and Portuguese). By identifying the hue of tekhelet as blue, Cordovero is indeed more specific than the Zohar, in which the hue is not explicitly stated. Cordovero's determination is significant because it strengthens the connection between the Zohar's somewhat theoretical observations on tekhelet and the ritual practices in which the color blue is used. To this association we can add the aforementioned fact that Cordovero was in Safed during the heyday of Safed's textile and dyeing industry. Colors and colored textiles were available in Safed and its surroundings in Cordovero's day. All these associations facilitated the connection between the Zoharic symbolism and myth surrounding tekhelet and the apparently preexisting magical practices in which the color blue was used.

A striking example of Safedian practices in which blue colorants are used against the evil eye on the basis of kabbalistic knowledge is Cordovero's interpretation of a Zoharic teaching that does not mention the term *tekhelet* but rather uses the verb *khl*/כחל, referring to *pukh* (kohl). The Zohar connects two verses mentioning *pukh*: "I will lay *pukh* as your building stones, and make your foundations of sapphires" (Isa. 54:11); and "She painted her eyes with *pukh*" (2 Kings 9:30).⁹⁵ The verse from Isaiah is rooted in an eschatological context, describing the future temple as made of *pukh* stones, whereas the second verse describes an earthly practice of painting with *pukh*. According to this Zoharic text, when the stones of the Israelite temple will return to their place, they will be *pukh* stones or painted in *pukh* and shine with sapphire light, so that "no other eye will be empowered to see them except when a person blues [*yikhbol*] his eyes with that *pukh*, filling his eye with it."⁹⁶ Hence, only a person who adjusts the color of his eyes to the color of *pukh*, which is the color of the Temple—a movement akin to tuning in to a specific radio frequency—will be able to see the Temple stones. Other people, particularly non-Jews, will not be able to see them. A third verse quoted by the Zohar explicitly mentions human vision in an eschatological context: "For every eye shall behold the Lord's return to Zion" (Isa. 52:8).

The focus of the Zoharic text is the visionary experience of seeing the Temple after applying *pukh*, but the content of the vision is uncertain. Although the Zoharic text seems to refer to an appearance of blue—kohl has a bluish hue, and sapphire is often associated with blue—that conclusion is not so determined because kohl can be also associated with black or gray, and sapphire can also denote a glittering appearance without any particular hue. However, in Cordovero's sixteenth-century interpretation of this Zoharic text, the focus is less the object of vision, but rather the magical act of painting one's eyes with *pukh*, which he associates with blue more decisively:

It is known that the hue of *tekhelet* is used against the evil eye, and this is the interpretation of the verse "they shall spread over it a cloth of pure *tekhelet*" (following Num. 4:6). This is the hue that comes before the eyes of this [evil] eye so that it would not be able to control the sacred. . . . And for this reason, *pukh*, which is lapis lazuli [*even kahl*], the hue of *tekhelet*, is used to blue the eye to thwart the evil eye, and prevent it [the evil force] from gaining control there. This is the meaning of [the Zoharic saying] "except when a person paints his eyes with that kohl." The Zohar meant that the stones of

the temple will be elevated to a high place where the external [evil] forces cannot gain control. “A garment of pure tekhelet” separates between the spiritual aspects and the external [evil] forces. Both of them [the holy and the evil entities] look at it. It covers the holy, and the forces of evil cannot grasp the holy. . . . There is also a remedy for subtle unperceivable [spiritual] entities—to prepare a blue liquid with which a material [human] eye could see the concealed subtle spiritual [entities]. Something of this can be also learned from the Babylonian Talmud, first chapter of tractate *Berakhot* (*b. Ber.* 6a), about how to see demons.⁹⁷

In the *Zohar*, *pukh* was introduced as a formula for mystical-messianic visions. Tekhelet was not mentioned, nor was the evil eye. By contrast, Cordovero explicitly identifies the hue of *pukh* with the hue of tekhelet, and both of them with the blue of lapis lazuli. That identification, similar to Cordovero’s aforementioned identification of tekhelet and azul, enables him to use motifs relating to tekhelet, particularly the myth of the tekhelet cloth of *malkhut*. Basing his postulation on the protective properties of tekhelet, Cordovero concludes that applying blue makeup to the eyes is a magical repellent against the evil eye. This practical advice was not introduced by the *Zohar* but rather by Cordovero himself. At the end of the aforementioned quotation, Cordovero presents another magical recipe—this time, not for protection but to enhance one’s vision: Cordovero refers to a Talmudic prescription that enables one to view demons by filling his or her eyes with the powder of the ground afterbirth of a certain female cat. Similarly, writes Cordovero, by preparing a blue liquid and probably applying it to the eyes, one can see hidden spiritual entities. The color blue is revealed as an elusive color: it attracts everyone alike, yet enables spiritual elevation only for those who are worthy, distancing those who are not.

A similar approach in which the color blue is used against the evil eye on the basis of the *Zohar*, which gained more publicity than Cordovero’s approach (whose commentary on the *Zohar* circulated only in manuscripts until the twentieth century), is expressed in a comment by Rabbi Haim Yosef David Azulai (1724–1806; henceforth, the *Hida*), a prominent rabbinic scholar known for his significant contributions to the fields of kabbalah, historiography, and bibliography. In many editions of the *Zohar* from the nineteenth century onward, a comment about the tekhelet garment of *malkhut* attributed to the *Hida* is printed in the side margins of the text: “it

implies [from the Zohar] that tekhelet is good against the evil eye.”⁹⁸ This comment, which became rather influential, thanks to its appearance in an eye-catching place in printings of the Zohar, explicitly states that the Zohar is the source for the effectiveness of tekhelet against the evil eye. Recommendations of the use of the color blue to ward off the evil eye are based not only on the Zoharic text but also on the comment by the Ḥida. Here, the Zoharic text influenced the practice (or, at least, provided a basis for it), and the practice, in turn, influenced the printed text.

I will now consider two nineteenth-century examples in which the Zohar and its commentators (Luria and Ḥida) were used as a basis for particular practices of using blue against the evil eye. The first example is a discussion dedicated to the evil eye by the Syrian rabbi Abraham ben Isaiah Dayan (d. 1876), in which he describes instances of the evil eye and introduces recommendations as to how one ought to cope with it.⁹⁹ The Zohar mentions a custom in which parents place a cloth (not necessarily a blue cloth) over their babies’ heads to ward off the evil eye when the babies are taken to the market.¹⁰⁰ Dayan goes further, proposing that one ought to dress children in blue garments. He uses the Arab term for blue—*’azraq*—and likens it to tekhelet. It is unclear whether he is introducing a new practice here or merely justifying an existing one, but the reason he provides for this practice is the Ḥida’s comment on the Zohar, which noted that tekhelet is apparently protective against the evil eye.

The second example involves the prominent nineteenth-century rabbi Yosef Ḥaim of Baghdad (1834–1909), commonly referred to as the Ben Ish Hai, after the title of his most famous book. His book of responsa includes a question forwarded to him by another rabbi from Baghdad, who had been asked about a popular custom of using the color blue against the evil eye: “Question: Here in our town Baghdad, they have a custom. After a woman gives birth, they bring an iron skewer, putting on it two legs of a rooster, seven onions, and a piece of cloth colored with Isatis water, called in Arabic *nil* [indigo], and they put this skewer above the woman’s bed. And one inquirer came to me and asked whether this custom belongs to the field of divinations and the custom of the Emorites [forbidden magic]. And this is an old custom, performed by all.”¹⁰¹ It seems that the other rabbi from Baghdad who asked this question was not disturbed by this custom, yet he could not ignore the question posed by the inquirer. In his response, Yosef Ḥaim gives his permission for the performance of this custom by proving, *inter alia*, that every element of it is a well-known legitimate Jewish practice against

the evil eye. Yosef Ḥaim writes thus about the colored liquid: “And the piece of cloth colored with Isatis water that they put on the skewer—this is also to frighten the demons because this color is like tekhelet, and the Zohar 3:163b teaching is already known . . . and our master Luria interpreted . . . in *Sha’ar ma’amarei rashbi* for the portion *Teruma* page 11 [commentary to *Sifra detsni’uta*]. . . . And that is why they put the cloth colored in a hue similar to tekhelet, to distance the looking of the forces of evil at the woman and her new baby, and it is like putting a tekhelet garment on the Tabernacle.”¹⁰²

Here, we see the power of this Zoharic teaching in providing rabbinic legitimization for a local magical practice questioned by a rabbinic figure. One might think that in his responsum, Yosef Ḥaim merely wanted to equip the other rabbi with authoritative sources to legitimize the existing practice; on a personal level, he might have not believed in the protective quality of the color blue. But there is another reference to tekhelet in this protective context. In his commentary on the Talmud, Yosef Ḥaim discusses a rabbinic description of the town of Luz as a center of tekhelet production, a place that the enemies of the Israelites could not conquer, and a place where people did not die.¹⁰³ While the Talmud does not relate the immortality of the people of Luz to tekhelet, Yosef Ḥaim makes this association explicitly. Basing his position once again on Luria’s interpretation, Yosef Ḥaim connects the various Talmudic descriptions of Luz and suggests that the town’s immortality could be attributed to an atmosphere saturated with tekhelet that prevented forces of evil from causing any harm.¹⁰⁴

Collections of practical advice compiled during the twentieth century quoted the formulations of the Ḥida, Dayan, and Yosef Ḥaim in their advice to use blue (such as equipping children with blue stones) against the evil eye.¹⁰⁵ Thus, we see that these rabbinic figures under Muslim (particularly Ottoman) rule were intermediary links in a chain of legitimization of the color blue against the evil eye. On the one hand, they took their cue from the Zohar; on the other hand, they were authoritative sources for twentieth-century popular anthologies of practical advice.

In addition to blue, the color red—particularly red threads—was also considered of protective value against the evil eye. According to the Mishnah, a red thread surrounded the altar of the Temple to separate between the “upper bloods” and the “lower bloods,”¹⁰⁶ but this thread had nothing to do with any magical practice. However, in the Tosefta, there are at least two opinions regarding the question of whether tying a red thread on the body



Figure 1. Shells of the three species of *Murex* snails. Left to right: *S. haemastoma*, *H. trunculus*, and *B. brandaris*. Courtesy: National Mollusk Collection, National Natural History Collections at the Hebrew University of Jerusalem (NNHC).
Photograph: Bible Lands Museum Jerusalem.

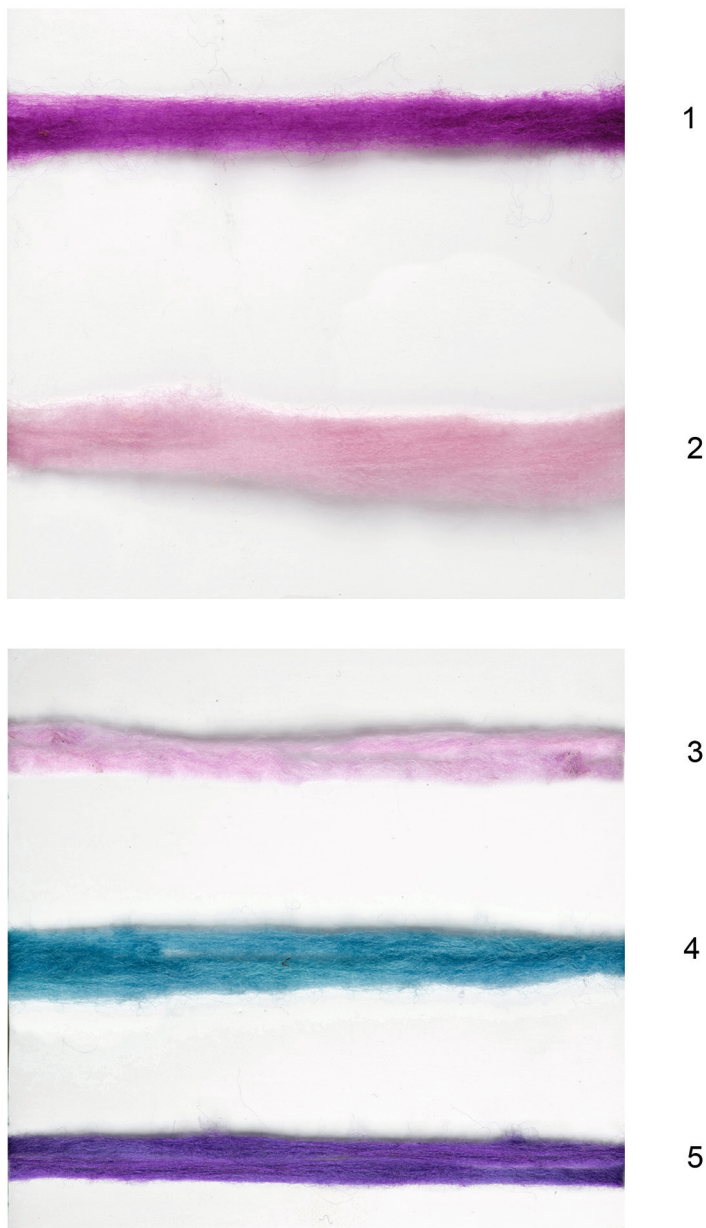


Figure 2. Wool fleeces dyed with various species of sea snails. 1–2: *S. haemastoma*; 3: *B. brandaris*; 4–5: *H. trunculus*. Dyeing: Zohar Amar and Naama Sukenik. Photograph: Shahar Cohen. Published in Naama Sukenik et al., “Early Evidence of Royal Purple Dyed Textile from Timna Valley (Israel),” *PLOS ONE* 16, no. 1 (2021).



Figure 3. Textile no. 490073 from Murabba'at caves, probably dyed by a mollusk-based dye. Photograph: Clara Amit.



Figure 4. Textile no. 490270 from Murabba'at caves, colored blue with plant-based indigotin. Photograph: Clara Amit.



Figure 5. Part of textile IAA no. 2014–9255. The textile was dyed with madder and plant-based indigotin. Photograph: Naama Sukenik, using Dino-Lite X 70 magnification. Published in Naama Sukenik et al., “Early Evidence (Late 2nd Millennium BCE) of Plant-Based Dyeing of Textiles from Timna, Israel,” *PLOS ONE* 12, no. 6 (2017).



Figure 6. Abraham Abulafia, "Light of the Intellect," Vat. ebr. 597, leaf 113 recto.
Photograph: Vatican Library.

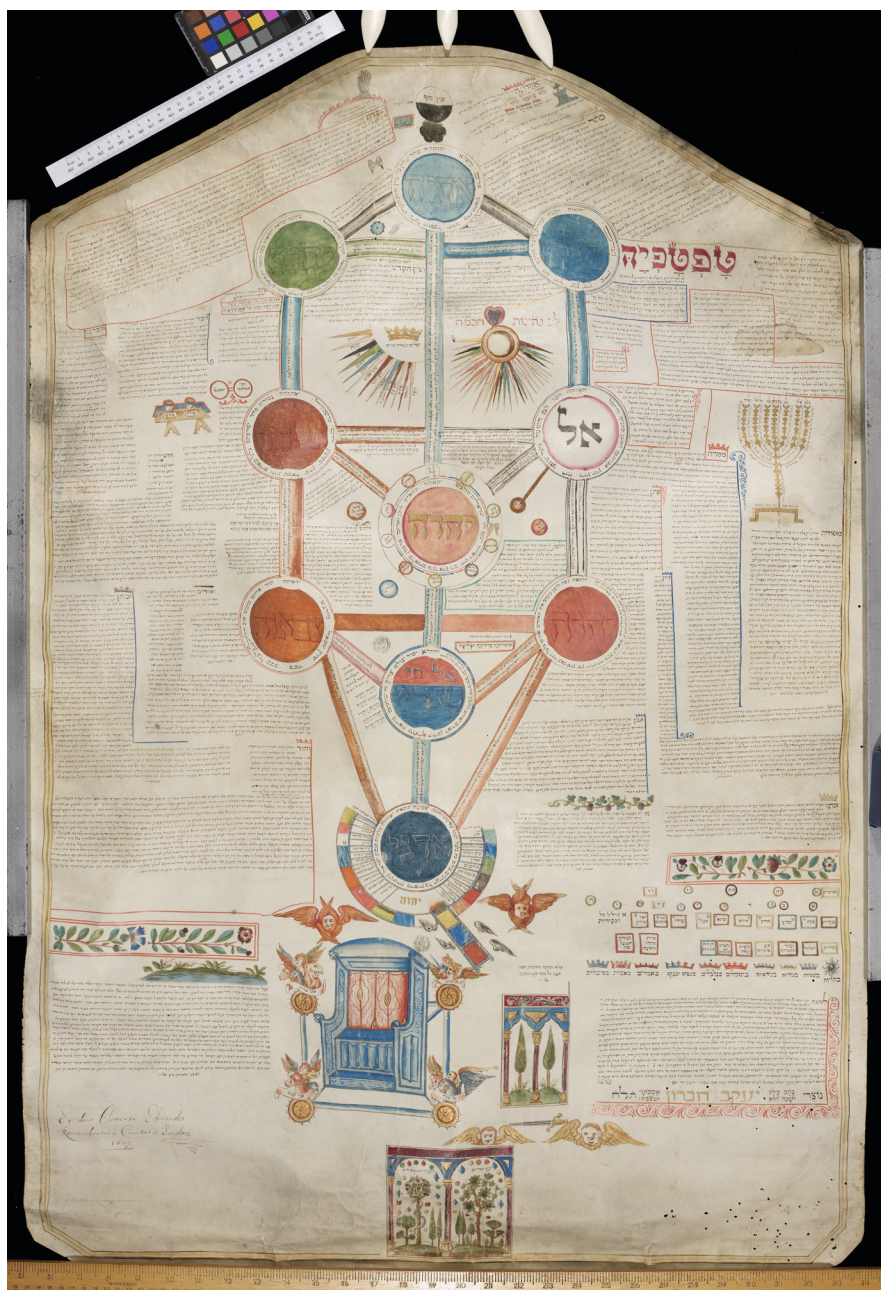


Figure 7. Reuben Šarfati (14th century), *The Great Parchment*, 1606 copy by James Bonaventura Hepburn, parchment, Oxford—Bodleian Library, MS Hunt. Add. E. Neubauer MS 2429. Photograph: Oxford, Bodleian Library.



Figure 8. Iranian Jewish amulet (c. 1900), Gross Family Collection Trust
no. 027.021.059.



Figure 9. Jewish amulet (Iraq, c. 1920), often attached to a child's garment to provide amuletic protection, Gross Family Collection Trust no. 027.021.092.



Figure 10. Jewish amulet (Iran, c. 1935) in the form of a hamsa (but in an unusual form) against the evil eye, Gross Family Collection Trust no. 027.021.092.



Figure 11. Rabbi Avraham Synagogue in Djerba, Tunisia, from the photograph collection of the Center for Jewish Art, Hebrew University of Jerusalem.
Photograph: Boris Lekar, 1997. Courtesy: Center for Jewish Art, Hebrew University of Jerusalem.



Figure 12. Ha-gedolah Synagogue in Djerba, Tunisia, from the photograph collection of the Center for Jewish Art, Hebrew University of Jerusalem. Photograph: Boris Lekar, 1997. Courtesy: Center for Jewish Art, Hebrew University of Jerusalem.



Figure 13. Left: tsitsit with *tekhelet* produced by the Radzin Hasidim, based on the *Sepia officinalis* squid; right: tsitsit with *tekhelet* produced by Pril Tekhelet association, based on the *Murex* snail.



Figure 14. A mannequin of the high priest of the Jewish Temple, dressed in a blue-dyed garment made entirely from the secretion of *Murex trunculus* snails.

This garment was prepared in advance to serve as an actual garment of the high priest in the anticipated rebuilt Jewish Temple. Displayed at the Temple Institute, in the Jewish quarter of the Old City of Jerusalem. Courtesy: Temple Institute, Jerusalem.

is considered *darkhei ha-emori* (a custom of the Emorites, which is forbidden magic).¹⁰⁷ Nineteenth- and twentieth-century rabbis expressed different opinions regarding that custom, as well as the custom to circumvent the tombstone of Rachel (in Bethlehem, Palestine) as a defense against the evil eye.¹⁰⁸ It seems that practices involving red and practices involving blue were received very differently. Because blue was associated with the “Jewish” tekhelet, practices using blue objects were considered legitimate, whereas the use of red objects was often seen as foreign and idolatrous.

Tekhelet Against Non-Jews

The functions of the color blue discussed above were applied in the early modern period not only on a personal or theological level but also on a national level—namely, the colors blue or tekhelet were perceived as capable of protecting the entire Jewish people. This protective power is associated with the character of tekhelet as a manifestation of the judgment of God, a character on which I elaborated in Chapter 2.¹⁰⁹

Kabbalistic symbolism provides a further theological basis for the characterization of tekhelet, as it depicts the *sefirah malkhut* as accompanying and protecting the Jewish people in their exiles. *Malkhut* is a mythical personification of the people of Israel, and its biography symbolizes the history of the Israelites. In this context, we should recall that *malkhut* is also named *shekhinah* (lit., “dwelling”) and *Kenesset Yisrael* (lit., “congregation of Israel”).¹¹⁰ But *malkhut* not only represents the Israelites; it also protects them as a collective organ, as a nation, against the onslaught of the forces of evil. In Lurianic texts, the forces threatening the people of Israel are often the surrounding non-Jews, seen as earthly manifestations of the forces of evil.¹¹¹

This basic characteristic of *malkhut* spawned further kabbalistic presentations of tekhelet as protective of the Israelites. For example, there is a Zoharic text that associates each dye of the Tabernacle with a particular *sefirah* and a corresponding festival. Tekhelet was associated with *malkhut* and Passover, thereby highlighting the argument that tekhelet was active in annihilating the Egyptians.¹¹² This text presents tekhelet as the divine power that killed the elder sons of the Egyptians. The Zohar does not explain what caused tekhelet to be such a destructive force, other than its association with *malkhut*. Following that Zoharic text, the seventeenth-century kabbalist Shlomo Algazi characterized tekhelet as a force that annihilates foreign (and

often enemy) nations, and not just Egyptians.¹¹³ Algazi went beyond a single historical event and referred to the nations in general, thereby applying the principle as a general rule.

The protective character of tekhelet with regard to the entire Jewish people is not limited to the motif of killing the Egyptians or other peoples. The myth of the blue cover of the *shekhinah* highlights the protective role of tekhelet. The covering of Jews, particularly by blue objects, resembles the metaphor of being under the wings of the *shekhinah*, the divine presence; it is particularly relevant when Israel is in exile. In the upper worlds, however, the blue cover protects the *shekhinah* from the harm of the forces of evil.

This nationalistic interpretation has its roots in another Zoharic narrative in which *malkhut* is covered against the evil eye. I am referring to the aforementioned midrashic narrative in which Joseph (who is traditionally described as immune to the evil eye)¹¹⁴ covers his mother, Rachel, so that Esau will not be able to look at her with his evil eye.¹¹⁵ Later on, according to the Zohar, God rewards Joseph for this when Rachel, in the guise of *malkhut*, extends a symbolic blanket of protection over the tribes of her two sons Joseph and Benjamin, in order to ward off the evil eye of Balaam.¹¹⁶ Although these narratives should be understood in relation to particular biblical narratives, the generalization of the biblical figures to *sefirot* allows for a more general conclusion. According to kabbalistic symbolism, in the upper worlds, Joseph and Rachel are symbols of divine emanations (Joseph is a symbol of *yesod*, Rachel is a symbol of *malkhut*), whereas Esau and Balaam are symbols of the forces of evil. At the earthly level, Rachel represents the Israelites, whereas Esau and Balaam represent the Gentiles, specifically Christianity. The covering of the tribes by Rachel, their mother, is the protection from the harm of the nations bestowed by the *sefirah malkhut* upon the Jews.

The connection of this Zoharic narrative to the tekhelet garment of the *shekhinah* was made, as noted above, by Isaac Luria. The nationalistic potential of Luria's interpretation was applied in later works. One example can be found in the writings of the Jerusalemite kabbalist Yehudah ha-Cohen (d. 1850). In his Lurianic commentary of the Zohar, he cites Luria's interpretation of the blue-cloth myth on several occasions.¹¹⁷ But he goes even further, imbuing it with a nationalistic character. Ha-Cohen emphasizes Luria's reference to Joseph's covering of Rachel with a cloth against the sight of Esau (a symbol of Christianity), asserting that tekhelet is a shield for Israel against the evil eye of the nations, as was the case with Pharaoh and Nebuchadnezzar.¹¹⁸ Compared to Algazi, who presented tekhelet as an annihilating force,

ha-Cohen uses the myth of the tekhelet garment to portray tekhelet as a protective element rather than an attacking one. And ha-Cohen provides a more material, historical interpretation than Luria. It takes place not only in the upper realms but also in history.

In the context of tekhelet, the nationalistic understanding of the myth of the blue cloth did not remain a textual interpretation but rather developed into an explanation of a custom or ritual. The Syrian-born Jerusalem kabbalist Itzhak Alfia (1878–1955) expounds on tekhelet in a later work, an elaboration that should be viewed as part of his more general interest in colors.¹¹⁹ He quotes several Zoharic teachings about tekhelet and refers to Luria's interpretation discussed above. Here I would like to draw attention to Alfia's brief discussion of the blue miter of some of the distinguished rabbis of the Ottoman Empire at the time, especially the chief rabbi, the *rishon letzion*.¹²⁰ Alfia suggests that this miter functions in a manner similar to the tekhelet garment that covered the Ark of the Tabernacle. Both are barriers against the evil eye of the forces of evil. He identifies these forces of evil as those that try to harm the Jewish people, both in the upper worlds and among the Gentiles. Of interest here is the explicit application of the color blue against the evil eye on a national level. The chief rabbi was a public figure representing the Jewish people. From Alfia's discussion, it is clear that the miter protects not only the chief rabbi but also the Jewish people as a whole. We can speculate that some people perceived the chief rabbi as though he were the high priest of ancient Israel with his traditional attire.

Although the color blue was already the color of the Zionist flag when Alfia discussed the blue miter, his discussion does not seem to be influenced by Zionist symbols. The blue color of the Zionist flag was indeed inspired by Jewish tradition (as we shall see in the following chapters), but it carries neither religious significance nor apotropaic power, which are prominent in Alfia's discussion. Hence, although Alfia wrote in the age of modern Judaism, his approach is more reflective of premodern notions.

Red and Black Overshadow Blue in Early Modern Ashkenazic Jewry

Up to this point, our discussion has focused on texts penned primarily by rabbis and kabbalists residing in the Ottoman Empire. I have not found evidence for a significant practical role played by the color blue or tekhelet among

Ashkenazic Jews prior to the nineteenth century, when the color blue began to be associated with Zionism, and independently, the production of tekhelet dye was renewed. In part, this was due to the fact that the belief in the use of the color blue to protect against the evil eye was not widespread in northern Europe. To be sure, the belief in the evil eye was no less prevalent among Ashkenazic Jews and magical practices were used no less often than among Jews in other locales.¹²¹ But the practices did not involve the color blue. In this section, I will briefly suggest other factors that might have contributed to this disparity in the prominence of the symbolism of blue. These factors are connected to other colors that might have played more significant roles in the early modern Ashkenazic imagination—particularly red but also black and white.¹²² Significantly, unlike in previous sections that dealt with both elitist doctrines and popular customs, the sources I present in this section are limited to elitist texts penned primarily by rabbis, kabbalists, and Hasidic masters. It is virtually impossible to learn from these sources about the actual behavior of wide circles of people.

Recall the early modern interpretations and applications of a myth about the tekhelet garment of the *shekhinah*. The nationalistic overtones of that myth call to mind another myth, perhaps better known among Ashkenazic Jews, about the reddish or purplish garment of God. According to a midrashic image, God wears a purple garment (*porphyra demalka*). The purple dye is made of the blood of Jewish martyrs or resembles the blood of these martyrs. When God wears this garment, he takes revenge upon the enemies of Israel. Thus, the garment is both a representation of the martyrs and a source of action.¹²³

The verses in the book of Isaiah that describe the destruction of Edom provide a biblical source for this image. In these verses, God is described as wearing garments stained with the red (Heb., *adom*) blood of Edom (Isa. 63:1–3). God is said to tread upon the non-Israelite enemies of Israel like grapes; and, like wine splashed against a garment, the blood of the non-Israelites splatters on God's garment. However, the blood here is not that of the martyrs but that of the enemies of Israel. The analogy and switch of interpretation between the blood of Israel's enemies and the blood of Jewish martyrs appears more than once in Jewish sources.¹²⁴

These verses and images have played a notable role in the Jewish-Christian discourse on vengeance and messianism, based on the ancient identification of Edom (the nation) and *adom* (red), first with the Romans and then with Christianity.¹²⁵ Israel Yuval, in the context of relations be-

tween Jews and Christians in medieval times, has shown the manifestation of that image (in its iteration as the blood of the martyrs) in medieval liturgical poems (*piyyutim*) calling for vengeance, and stressed its messianic reverberations.¹²⁶

One expression of the associations between Jews and Christians through the color red is the myth of the Red Jews, which circulated among both Jews and Christians in the German lands beginning in the thirteenth century, and flourished in early modern times. This legend features a mysterious tribe of Jews (associated with the ten lost tribes) who wish to bring catastrophe to Christian Europe.¹²⁷ Of interest is the fact that in this narrative, Jews were associated pejoratively with the color red, an association that was explained as an indirect influence of the aforementioned link between red and Christianity.

The image of God wearing a reddish garment to wreak national vengeance was not just a textual phenomenon but was realized in human action. Recall Sabbatai Tsevi's usage of the color green. Sabbatai is also reported to have worn a red garment when Polish Jews visited him, and had his Torah scroll wrapped in a red cloth to symbolize a desire for revenge on behalf of the Jews massacred in Ukraine in 1648.¹²⁸ Possibly, the midrash cited above, in which God wears red clothing of revenge, was the basis for Sabbatai's action. Perhaps he attempted to invoke divine judgment through color, using the aforementioned mechanism described in Cordovero's first chapter of *Gate of Colors*. This source supports the argument that wearing a garment of a particular color was used to protect the Jewish nation from harm by non-Jews. Sabbatai perceived himself as the messiah of the Jews, and therefore took upon himself the role of avenger for the massacred Jews of 1648. It is probably not a coincidence that he used red cloths in his encounters with Ashkenazic Jews, to whom this color would have had specific associations.

We have already seen that Jews had an aversion toward the wearing of red outfits because this color was associated with licentiousness and impurity; however, it seems that this aversion was greater among Ashkenazic Jews, who also associated this color with a negative image of Christianity. In Catholic Poland, this color was seen on a daily basis in the attire of the clergy. In addition, the prestigious Polish cochineal, the so-called *Porphyrophora polonica*, was adopted by Polish nobility, which was also a symbol of Christian power.¹²⁹ The renowned Ashkenazic rabbi Moses Isserles (1530–1572) wrote that one ought to not wear red attire, as part of a more general restriction against the adoption of non-Jewish costumes representing licentiousness.¹³⁰ Rabbi Moshe Sofer

(1762–1839; known as the Ḥatam Sofer) wrote that Jews should distance themselves from red clothing because such garments draw upon their wearers negative powers from the planet Mars (*maadim* in Hebrew, hinting to its reddish hue), whereas these powers are positive for Esau (Christians).¹³¹

In contrast to the aversion toward red among Ashkenazic Jews, there was a preference for black. Shabbatai ha-Cohen (the Shakh), a prominent Polish rabbi of the seventeenth century, added to Iserles's aforementioned statement a comment that the color black, not red, is the color of modesty and humility. Hence, modest Jews should wear black clothing.¹³² Black clothing had played an important role among Ashkenazic Jews since medieval times, as it did among Sephardic Jews, but in addition to shared reasons, such as the idea that black represents humility, particular aspects of black were more relevant to the world of Ashkenazic Jews.

Sumptuary laws under Christian rule were gradually removed by the early modern European empires as part of their agendas of enlightenment and acculturation. Hence, from the seventeenth century onward, distinctive Jewish colors were not mandated by the authorities. On the contrary, there were attempts to impose modernization on Jewish dress and conform it to that of their non-Jewish surroundings. Jews in the Ottoman Empire were often forced to limit themselves to dark colors, as we have seen above; but the color black became a preference of Jews not only as an expression of modesty and humility, and not only as attire that is less noticed in the public sphere. Jews also chose black clothing as a way of resisting attempts to acculturate and modernize them, at least in nineteenth-century Eastern Europe. A distinctively Jewish appearance (of which color was but one aspect) was a display of difference, in a similar way that groups of non-Jews in Eastern Europe developed “national” attire.¹³³ When attempts to modernize the Jews emerged during the nineteenth century—most notable in our context is the “clothing decree” of the 1840s in Poland and Russia—the insistence on the so-called traditional dress was not only a statement against compulsory acculturation but also a declaration against the voluntary adoption of modern costumes.¹³⁴ Black was a preference rather than an obligation because it expressed a desire to be distinct from the surrounding society. It was a marker of traditionalism, especially from the nineteenth century onward. Accordingly, there are several testimonies about the black garments of Jews in Eastern Europe in the eighteenth and nineteenth centuries.¹³⁵

While the colors red and black played complex roles among Ashkenazic Jews, the color blue seems to have played less of a role than it did among

Ottoman Jews. However, it is still worth examining the symbolism of blue among Eastern European Hasidim in the eighteenth to twentieth centuries. As Hasidism is a spiritual movement deeply inspired by sixteenth-century Safedian kabbalah, one might expect to find references to colors of dress in Hasidic teachings and practices. Many Hasidic leaders were mystics; many taught mysticism to their followers and provided guidelines for mystical experiences. Yet the color blue did not appear often in these references.

Many eighteenth-century Hasidic masters adopted the aforementioned custom of wearing white garments on the Sabbath, and some of their followers probably did as well. This custom was adopted as part of Hasidism's self-conscious pursuit of Safedian pietism, as well as among early modern kabbalists in Eastern Europe.¹³⁶ Solomon Maimon noted, in this vein, the white appearance of the Maggid of Mezerich.¹³⁷ Maimon wrote that since the color white is associated with divine grace, Hasidic leaders would wear white garments in order to pull down divine grace from above and disseminate it to their followers. However, opponents of early Hasidim argued that white clothing represents arrogance and pretentiousness. This argument was not necessarily introduced only in relation to the rise of Hasidism, but perhaps earlier.¹³⁸

If we shift our attention from Hasidic social reality to Hasidic teachings, we will find—perhaps unexpectedly—that colors play a lesser role in Hasidic than in kabbalistic texts. Within this limited role, the color white, symbolic as it was of divine grace, was perhaps the most important. Tekhelet was less significant than white, but it did play a role. It represented the fear of God, due to the threatening aspects described above, and due to the fact that the last emanation, associated with tekhelet, is also associated with the fear of God.¹³⁹ Moreover, it is also possible to locate Hasidic references to tekhelet that perpetuate some of the motifs discussed above, such as tekhelet as a protector of the Jews or a weapon against their enemies.

References to tekhelet as protection against the forces of evil are usually in the context of the tekhelet thread of the tsitsit, or in interpretations of the following verse: “And Mordecai went forth from the presence of the king in royal apparel of tekhelet and white, and with a great crown of gold, and with a robe of fine linen and purple” (Esther 8:15). This verse refers to the tekhelet garment of Mordecai, worn after the Jews were saved from the genocidal threat of Haman, and before the Jews began to kill their non-Jewish enemies.

Consider, in this context, a homily by the Hasidic master Shlomo Rabinowicz of Radomsk (1801–1866).¹⁴⁰ In this homily, Rabinowicz elaborates on

the vestments of the high priest of ancient Israel, which protected the Jews from potential harm by “external entities,” which are the forces of evil in kabbalistic parlance. Rabinowicz quotes the verse from the book of Esther, stating that “tekhelet horrifies the external forces.” Regarding the next verse, “The Jews enjoyed light and gladness, happiness and honor” (Esther 8:16), Rabinowicz stresses that this good fortune was enjoyed by the Jews alone, leading him to conclude that tekhelet offered protection particularly for Jews. Moreover, Rabinowicz does not only interpret verses here; he identifies the ancient priests who protected the Israelites from evil external forces through their work in the Temple with the later phenomenon of *tsaddikim* who protect the Jews through their prayers.¹⁴¹ He states that the prayer of the Hasidic *tsaddik* protects the Jews against the external forces of evil because the *tsaddik* metaphorically wears a tekhelet garment, like the biblical Mordecai and the priests of the Temple.

An example of the protective power of the *tsitsit* is a statement by Shmuel Bornstein of Sochaczew (1855–1926), who claims that the tekhelet of the *tsitsit* blinds the eyes of the external forces.¹⁴² We know that most of the Jews at this time did not have tekhelet threads on their *tsitsit*.¹⁴³ Therefore, it is possible to conclude that these leaders did not mean *tekhelet* literally. They used the ancient statement about the apotropaic character of the *tsitsit*, as attested to by kabbalistic texts, but did not assign practical importance to the color blue.

The possibility that the term “tekhelet” was used nominally as a metonym for a protective power without referring to a real blue-colored object is supported by usages of the term *begeḏ tekhelet* (a tekhelet-colored garment) to denote the aforementioned purple garment of God’s vengeance. In that myth, *begeḏ tekhelet* represents a protective cover of any kind, not necessarily a blue garment. As in other texts discussed above, these were Lurianic sources that identified the purple garment with *begeḏ tekhelet*.¹⁴⁴ Thus, in two different contexts—in Safed and in Poland—*tekhelet* might have become a synonym for a covering shield without it necessarily representing a particular color.

Conclusion

This chapter examined associations between the use of the color blue in the social realm of early modern Jews and the meanings attributed to that color.

As noted, on several occasions in the Ottoman Empire, Jews were forced to wear dark-colored clothing and were observed doing so. Jews, who were forbidden to wear green clothing (a color reserved for Muslims) and had an aversion toward red costumes (as a color of Christianity in Christian countries and a color of pride and extravagance in general), were actually led to develop a preference for dark-colored clothing, including blue. A positive connotation of humility was ascribed to black and blue, but the positive attitude toward these colors was also related to the fact that they were neither red nor green.

In addition to exploring Ottoman sumptuary laws, I also examined perspectives on color in sixteenth-century Safed, a city of kabbalists and dyers. The growing discourse on colors in Safedian kabbalah, as well as the applications of this discourse in the domain of magic, can be understood against the backdrop of the widening general discourse on colors in early modern Europe. The Safedian discussion centered on the early modern association between a medieval myth of the tekhelet garment of the *shekhinah* and customs of covering in blue that were practiced by Ottoman Jews. Early modern kabbalists living in the Ottoman Empire, such as the Safedian kabbalists Cordovero and Luria, referred to that myth on various occasions, developing it significantly. Moreover, some of these kabbalists constituted that myth as a proof-text for various practices of using blue objects—in particular, covering oneself with blue textiles, presenting those practices as techniques to ward off the evil eye.

The evil eye did not imperil individuals alone; it was also perceived to have harmful effects on the national level. Tekhelet was believed to be helpful in combating the evil eye of non-Jews turned against the Jewish people. The particular association of Jews with tekhelet was not limited to the realm of practical magic performed in the present-day physical world. According to Cordovero, the ability to use the color blue in order to see the upper Temple, which will be built at the End of Days, is possessed by Israelites alone. Jews, then, enjoy a mystical and eschatological capacity to see the end of times, which are colored blue.

We can conclude that if any color was considered benevolent and protective for the Jews in the Ottoman context, it was tekhelet, in its interpretation or rendering as blue. It was perceived to be a Jewish color not only because Muslims were associated with green or with bright colors but also because it was associated with the *shekhinah*, also referred to as *Kenesset Yisrael*, and to which was attributed apotropaic potency.

From both perspectives—that of the colors of clothing of Ottoman Jews and that of the kabbalistic symbolism of tekhelet—the color blue represented the vulnerability and passivity of the Jews. From the perspective of the clothing of Ottoman Jews, adherence to sumptuary laws, combined with the humility attributed to the dark colors, represented a sense of submission. From the perspective of kabbalah, some sources do depict tekhelet as an active force against non-Jews. In the context of the spiritual meanings of dress, however, the protective action was more passive in quality. The blue garments blocked the evil eye of the entity—human or demon—who gazed upon them, but they did not utterly incapacitate the dangerous entity.

In the Ashkenazic world, by contrast, the color blue did not take on particular significance. One might speculate that the color red, which was associated with Christianity, took on the protective role played by tekhelet among Jews who lived under Muslim rule, while humility was represented by black alone. Nonetheless, there are references in Hasidic sources to the protective value of tekhelet for Jews. The primary role of blue in the Hasidic world, however, was in the renewal of the tekhelet dye, starting in the 1880s. In Chapter 4, we will turn to the history of this renewal and to the Hasidic master Rabbi Gershon Henekh Leiner, who broke new ground in the history of tekhelet.

Chapter 4

The Modern Renaissance of the Tekhelet Dye

The discovery in the eighteenth century of Herculaneum and Pompeii, cities buried in ashes in 79 CE, following the eruption of Mount Vesuvius, revealed an unexpected find: a number of vividly colored murals that survived antiquity almost intact. When the excavation of Pompeii intensified at the beginning of the nineteenth century, a particular blue pigment caught the eye of archaeologists and chemists. After Napoleon Bonaparte's expedition to Egypt in the same period, similar blue pigments were found on the walls of tombs in Egypt. A comparison of the pigments, conducted with the limited tools of the emerging science of chemistry, indicated that these impressive pigments were significantly different from other blue pigments known and used in the early 1800s.

The ancient Egyptians considered blue to be the most prestigious of the colors and made special efforts to produce it.¹ The pigment Egyptian blue, as it was called, was artificially synthesized by the ancient Egyptians because bluish colorants are so rare in nature; today, it is believed to be the earliest known synthetic pigment. European scientists, intrigued by this unique product, spent a century analyzing and restoring Egyptian blue. For example, Jean-Antoine Chaptal (1756–1832), a student of the famous guillotined chemist Antoine Lavoisier, inspected artifacts from Pompeii and Egypt. Chaptal, who was also an industrialist, introduced the idea of restoring the ancient pigments toward the goal of mass production, based on a formula revealed by Roman author and architect Vitruvius (81–15 BCE). The nineteenth century saw several attempts to chemically analyze this pigment,

followed by attempts to reproduce it. By the 1890s, these efforts had achieved limited success, with the complete process achieved only a century later.²

The nineteenth-century attempts to restore the production of Egyptian blue were not the only case in which an ancient colorant was lost to material history, preserved in texts and archaeological sites, and restored as the result of a cooperation between science, industry, and curious sponsors. Since the 1880s, the lost or forgotten tekhelet dye has also undergone a renaissance. Orthodox Jews—some of them rabbis, scholars, or both—have begun to research tekhelet and undertake the restoration of the ancient dye.

This chapter introduces the tekhelet renaissance from the perspective of researchers and producers of the dye. It deals with attempts to restore the ancient dye against the backdrop of archaeological and scientific discoveries as well as national and messianic aspirations. Chapter 5 will discuss the reception (and rejection) of the newly introduced tekhelet dyes.³ Unlike many Orthodox researchers of tekhelet, who are driven by a religious goal to find the “real” tekhelet dye in order to enhance their performance of the tekhelet commandment, I do not engage with the question of the authenticity of the dye. Rather, my goal is to explore the cultural significations of the pursuit itself.

I set the stage by presenting the introduction of new colorants in the nineteenth century (of which Egyptian blue was but one example), with bluish colorants playing a notable role. I then turn to the Jewish context and introduce three stages in the renaissance of tekhelet: (1) the nineteenth-century tekhelet project of Rabbi Gershon Henekh Leiner (1839–1890) of the Polish town Radzyń (Radzin), who introduced a new tekhelet dye in 1887/88;⁴ (2) the scientific research on tekhelet conducted by Rabbi Isaac Halevi Herzog (1888–1959) during the first half of the twentieth century; and (3) the scientific research on tekhelet conducted in the State of Israel in the second half of the twentieth century, culminating in the introduction of a second tekhelet dye in the 1980s.

Next, I focus on two challenges faced and debated by all these actors. The first is the preparation of the tekhelet dye—the task of identifying a marine mollusk and producing a dye that meets the descriptions of the *hillazon* and dye in rabbinic literature. The second concerns the hue of tekhelet. Finally, I address the messianic impulse shared by these actors—the sense that the renewal of tekhelet entails a renewal of the Jewish past and a step toward redemption.

Unlike the previous chapters, this chapter is based not only on textual sources but also on correspondence, as well as interviews with prominent tekhelet activists and researchers.⁵ Because the discourse and debate surrounding tekhelet are dynamic and ongoing, this chapter should be read as a tentative reflection of the tekhelet renaissance up until the end of 2020.

The Colorful Nineteenth Century

Color has always played an important role in art, literature, science, and material culture. However, as noted in Chapter 3, the discourse on colors flourished in the early modern period, partially as a result of the scientific revolution of the sixteenth and seventeenth centuries. Isaac Newton's groundbreaking *Opticks*, published in 1704, is a famous example of this trend.⁶

In the nineteenth century, marked by unprecedented scientific and industrial advancements, interest in colors grew significantly in both the theoretical and practical domains. Within the theoretical discourse, the burgeoning scholarship on this subject included works such as Goethe's influential theory of colors, published in 1810; John Dalton's 1794 treatise on color blindness, which was part of an intensive discussion of color vision during the nineteenth century;⁷ the color theory of the chemist Michel Eugène Chevreul, which inspired many Impressionist painters;⁸ and the "color-naming debate," which involved scholars from various disciplines, especially linguists and anthropologists.⁹ The nineteenth century also gave rise to the modern color industry, with factories producing colorants for wide use.¹⁰ New colorants, such as mauveine, a violet colorant discovered in 1856 by William Perkin, represented the revolution brought about by the color industry of the nineteenth century.¹¹

Blue colorants were central to this revolution, as the modern color industry invested particular effort in the production of cheaper synthetic blue colors. Between 1704 and 1706, the pigment Prussian blue was discovered by accident in Berlin, and came to be considered the first modern synthetic pigment.¹² But it was the nineteenth century that saw more notable discoveries of blue colorants, with new pigments gradually replacing azurite.¹³ A synthetic cobalt blue pigment was discovered in 1802, and production began in 1807.¹⁴ Another blue pigment, cerulean blue, was discovered in 1789 by the Swiss chemist Albrecht Höpfner, although its commercial production began

only in 1860, with the Englishman George Rowney.¹⁵ But the most notable example of a blue colorant synthesized during the nineteenth century was the luxurious ultramarine. In 1824, the French Société d'Encouragement pour l'Industrie Nationale offered a prize of 6,000 francs to anyone who could produce an inexpensive synthetic ultramarine to replace the extremely expensive lapis lazuli stone.¹⁶ The French chemist Jean-Baptiste Guimet won the prize in 1828, but other scientists, such as the German chemist Christian Gottlob Gmelin, also independently succeeded in producing a synthetic ultramarine. In any event, by the 1850s, the production of ultramarine had become widespread.¹⁷

Another nineteenth-century development in the domain of colorants was the research of historical mollusk-based dyes, in addition to the research of synthetic historical colorants such as the aforementioned Egyptian blue. This interest in mollusks surfaced in the sixteenth and seventeenth centuries as part of the scientific revolution of that period. In particular, from the sixteenth century onward, several scholars attempted to identify the mollusks that were used to produce Tyrian purple in antiquity.¹⁸ Some of them found species of living mollusks from which colorant could be produced, not only on Mediterranean shores but even in America; they speculated that these mollusks were also used in earlier periods. Among the most famous of these scholars was the seventeenth-century English naturalist William Cole, who found living mollusks in England and experimented with the production of colorants, showing how exposure of the secretion to sunlight causes the transition of hues.¹⁹

Research on Tyrian purple advanced significantly in the nineteenth century, helped along by growing scientific interest in marine biology and the industrialization of colorant production. One advance was in the field of archaeology: numerous broken shells were found at several sites on the Mediterranean shore and elsewhere, indicating their use for the preparation of dyes.²⁰ These shells were of two species of mollusks: *Murex trunculus* and *Murex brandaris*. Both are snails (that is, they belong to the class of gastropods) in the same family (*Muricidae*). Their shells are similar in appearance to those of a fish, with a rough, spiny texture.²¹ Another step forward took place in the research on the chemical composition of colorants produced from marine mollusks. In several studies published between 1832 and 1860, the Italian chemist Bartolomeo Bizio (1791–1862) described the origin and chemical properties of the secretions of these two species. Bizio argued that the dye derived from *Murex trunculus* was a bluish purple, whereas a reddish Tyrian

purple was produced from *Murex brandaris*.²² In 1859, the French zoologist Henri de Lacaze-Duthiers (1821–1901) reported that he had seen a fisherman produce a colorant from *Murex* snails. In his comprehensive work *Mémoire sur la pourpre*, he presented three species from which dyes can be produced: *Murex trunculus*, *Murex brandaris*, and *Purpura haemastoma*, which is today known as *Thais haemastoma* or *Stramonita haemastoma* (see Figure 1 in the color plates). He also argued, against Bizio, that the basic color produced by both *Murex* snails was violet.²³ A debate between the two scientists ensued.²⁴ The Egyptologist Alexander Dedekind (1856–1940) published a four-volume work, *Ein Beitrag zur Purpurkunde* (1898–1911), in which he argued in support of Lacaze-Duthiers's claim that the basic color produced by the *Murex* species is violet and not blue (although blue can occasionally be seen).

By the end of the nineteenth century, scientists realized that colorants could be produced from the *Murex* species that live in the Mediterranean Sea, and that it might be possible to produce a bluish hue from these species. The situation was ripe for the renewal of tekhelet.

Gershon Henekh Leiner and the Discovery of a New Tekhelet

In 1887, the Hasidic leader Rabbi Gershon Henekh Leiner of the Polish town Radzyń announced that he had discovered a marine mollusk that could be accepted as the *hillazon*; in 1888, he announced that he had succeeded in producing a tekhelet dye from the secretion of that mollusk. He began producing sets of tsitsit with a thread of that dye, and distributed them to his followers and other interested parties. Leiner's efforts should be understood against the backdrop of the aforementioned nineteenth-century interest in colorants, particularly mollusk-based colorants. No less importantly, Leiner was one of the most creative rabbis of his time; an innovator in the domain of Jewish traditional culture, he initiated several projects intended to enhance the religious world in which he lived.²⁵

Hasidic historiography presents Leiner as an extraordinary autodidact who knew several languages; he was a healer who gave his patients medical prescriptions in Latin, a painter, and a musician—and he made remarkable achievements in Torah scholarship.²⁶ Leiner's creativity was manifested first and foremost in his extensive literary activity.²⁷ His first major project was conducted in his early twenties, and may have begun even earlier: he collected

the Hasidic teachings of his grandfather and published them in the book *Mei hashiloah* (1860). Another expression of his creativity, more relevant to the discussion of tekhelet, was the compilation and publication of a missing Talmudic text that might have never existed as such, but Leiner decided to reconstruct it anyway, calling it *Sidrei tohorot* (Laws of purity). The first volume of this work appeared in 1873; it elicited controversy among Orthodox rabbis, and Leiner, himself a fierce polemicist, responded in kind. The project of *Sidrei tohorot* shared with tekhelet an aim to upgrade the religious level of Orthodox Jewish life. But while *Sidrei tohorot* was the creation of a text that had never before existed, tekhelet was a ritual with a concrete history of performance. In this way, the tekhelet project was more deeply rooted in Jewish history.

The tekhelet initiative, which occupied Leiner for the last three years of his life, can be described as the culmination of his creative-polemical character. I will elaborate on the social and religious context of this initiative in Chapter 5. In this section, I focus on the project itself: the production of the tekhelet dye—the search for the *hillazon* and the extraction of its dye.

Our knowledge of Leiner's project derives first and foremost from three books he wrote on the subject. In 1887, Leiner published a small book, *Sefunei temunei hol* (Treasures hidden in the sand; based on Deut. 33:19).²⁸ In this book, Leiner argued that the squid *Sepia officinalis*, known in English as the common cuttlefish, is the tekhelet *hillazon*,²⁹ asserting that it conformed to all the halakhic requirements stipulated for the *hillazon*.³⁰ Leiner also announced that the squid was brought to him with some of its ink. He wrote that the *Sepia officinalis* used the ink to distract predators and that he intended to produce a dye from it.

In 1888, Leiner published another book, *Petil tekhelet* (Cord of tekhelet; following Num. 15:38).³¹ Leiner wrote that in the first book, he had only introduced the possibility of restoring tekhelet; but in the second book, after further investigation, he had become more confident. In *Petil tekhelet*, he further investigated the *Sepia officinalis* and expressed his growing certainty that this mollusk adhered to the requirements of the ancient rabbis. In this second book, Leiner also announced that his project had advanced to the practical stage of tekhelet production.³² As he became more confident, however, more criticism was directed at his project, and he felt obliged to respond to the emerging critiques of his endeavor.³³

In *Petil tekhelet*, Leiner wrote that he had seen the *Sepia officinalis* in an aquarium in Naples, Italy.³⁴ This must have been in the Stazione Zoologica,

a research institute founded in 1872 and opened in 1874 on the coast of Naples, which contained several aquarium tanks with various marine animals.³⁵ Leiner had probably traveled to Italy as part of his family citron business.³⁶ He also wrote that he had acquired some of the ink of the *Sepia officinalis* and conducted experiments in producing a dye from it.

Leiner began producing his tekhelet in his court in Radzyń from the secretion of the *Sepia officinalis*, though the legitimacy of the resulting dye was called into question, as we shall see below. Notwithstanding the critique, it is clear that Leiner sent his tekhelet to everyone who requested it, as we can conclude from various testimonies: contemporaneous opponents wrote that the price of Leiner's tekhelet was high, while reports in the Jewish press of the time attested that he supplied it at no cost to those who could not afford to buy it.³⁷ The same reports recounted several violent controversies between those who had placed Leiner's tekhelet on their tsitsit and those who opposed the use of the *Sepia officinalis* dye. From the press reports, it is reasonable to assume that Leiner's followers, the Radzin Hasidim, adopted their master's tekhelet as soon as it was introduced. Additionally, another group of Hasidim of the Bratslav group adopted Leiner's tekhelet, although we do not know when and to what extent.³⁸

Leiner was not the first to have identified the *hillazon* with the *Sepia officinalis*. The German Hebraist Johannes Buxtorf (1564–1629) and the German Bible scholar Johann David Michaelis (1717–1791) proposed that *Sepia officinalis* was the tekhelet *hillazon*. The Polish *maskil* (proponent of Jewish enlightenment) Joseph Schönhak (1812–1870) wrote that in general, the term *hillazon* refers to a snail (*schnecke*, in German and Yiddish). However, since according to the Talmud the *hillazon* of tekhelet should resemble a fish, Schönhak supported the *Sepia officinalis*, even though this mollusk was not rare and expensive, as the Talmud described it to be.³⁹ These three precedents in support of the *Sepia officinalis* were known already in the times of Leiner, as one of his critics mentioned them in a review published immediately following the publication of Leiner's second book.⁴⁰

Leiner was also not the first in his day to raise the idea of restoring the tekhelet dye. This possibility had been raised in the book *Besamim rosh*, attributed to the medieval rabbi Asher ben Yehiel, known as the "Rosh," but actually written by the eighteenth-century German rabbi and covert *maskil* Shaul Berlin (1740–1794).⁴¹ The author of *Besamim rosh* presented a (possibly imaginary) legal question describing a mollusk and asking whether the lost *hillazon* had been found. A brief discussion developed over the characteristics

of the mollusk, as well as the hue of the resulting dye.⁴² In his second book, Leiner admitted that he was aware of the discussion in *Besamim rosh* and that he was not the first to raise the possibility of restoring the tekhelet commandment.⁴³ Nor was Leiner the first to combine an empirical discussion on colors with a kabbalistic elaboration (as we will see below). Another *maskil*, Isaac Satanow (1733–1805), penned a book, *Imrei bina* (Statements of wisdom), intended to show that kabbalah and science do not contradict each other.⁴⁴ This book contains a few paragraphs on colors as representations of the *sefirot*, in which the emphasis is on the color tekhelet, together with its kabbalistic characteristics, and on *sefirah malkhut* as a representation of tekhelet. Satanow wrote that the seven colors manifested in a prism and in the rainbow are the seven colors associated by kabbalistic sources to the seven lower *sefirot*. Tekhelet gathers all colors as *malkhut* receives all the divine influx.⁴⁵

To what extent did Leiner's innovation reflect the science of his time? Although Leiner belonged to the Orthodox Jewish world and opposed the *maskilim*,⁴⁶ he did not avoid referring to contemporaneous scientific knowledge. When he described the *Sepia officinalis*, he noted that it had been mentioned in the latest research, including Darwin's writings.⁴⁷ He also used Latin terms to characterize the *Sepia officinalis*; for example, he deployed the term "chromotropy" to describe its changing colors, thereby expressing some familiarity with color terminology (quite unexpectedly for a nineteenth-century Hasidic leader). His account of the history of tekhelet demonstrated some acquaintance with ancient dyes and seems to refer to Egyptian blue and Tyrian purple. He referred to the preciousness and the high price of such dyes, as well as their disappearance from material culture. He also emphasized the difficulty of producing those dyes.

Leiner did not, however, indicate the sources of his scientific knowledge. He explicitly mentioned "new books of research,"⁴⁸ but it is doubtful that he read original books of history and science such as Pliny's *Naturalis historia* or Newton's *Opticks*. More likely, he was exposed to scientific knowledge through other Jewish authors who had themselves read that literature. We know that Leiner consulted more than one edition of the *'Arukh*, the influential medieval Talmudic dictionary: he explicitly mentioned Binyamin Musafia's seventeenth-century additions to the *'Arukh*, in which the author referred to some scientific knowledge of his day,⁴⁹ as well as a nineteenth-century edition in which terms were translated to German.⁵⁰ He may have read nineteenth-century texts in Hebrew, written by Jewish *maskilim*, that

mediated scientific knowledge for Hebrew readers—particularly the writings of Eastern European *maskilim*, which would have been more accessible to the Eastern European Hasidic leader.⁵¹

In his first book, Leiner introduced ten Talmudic criteria for identifying the *hillazon*: (1) the appearance of the *hillazon* is tekhelet and similar to the sea;⁵² (2) it resembles a fish; (3) it has tendons and bones; (4) it has an external cover or shell; (5) it has elongated organs around its head; (6) it has organs that resemble a snake; (7) its secretion (rather than the dye produced) is black; (8) it tends to bury itself in the sand; (9) it has a secretion that is not its blood; and (10) it can come out of the sea.⁵³

Each of these criteria was derived from a reference to the *hillazon* in rabbinic literature—the Talmudim, midrashim, and even Maimonides—and presented by Leiner as a requirement that must be met by any candidate for the authentic *hillazon*. In his second book, written after he saw the *Sepia officinalis* squid in Italy, Leiner reorganized his arguments and added another criterion: that the *hillazon* should have its origins in Italy.⁵⁴ In his third book, Leiner defended these eleven criteria against critique.⁵⁵

It is worth mentioning that rabbinic sources do not explicitly define these scattered references as “criteria” (or *simanei ha-hillazon*, as Leiner termed them). Rather, such references can be interpreted as descriptions of the *hillazon*. It was probably Leiner who was the first to introduce a subset of the references to the *hillazon* as criteria for identification. Future discussions on the topic of tekhelet accepted Leiner’s general approach but disagreed about what references should be included in the set of criteria and how they should be interpreted. Significantly, no one has ever found any specific mollusk that fits all the rabbinic references. Some references characterize certain species, while other references characterize others. Hence, various opinions adopt specific sets of references as their criteria.

What was Leiner’s purpose in his tekhelet renewal project? Leiner presented his project as an attempt to restore a forgotten commandment. Shaul Magid, pursuing a deeper motivation that applies to more than a single project, has suggested that Leiner’s efforts on behalf of tekhelet are “part of a broader project of revealing the concealed unity in all Jewish literature.”⁵⁶ Throughout his work, Leiner attempted to extract a single coherent understanding of tekhelet from diverse types of Jewish sources, and thereby to establish a common thread between them. Magid also suggested that “this act of literary reconstruction, which involved synthesizing apparently disparate literary traditions, was based on the common kabbalistic notion that gathering

the fallen sparks of holiness was a prelude to the messianic era.”⁵⁷ Moreover, by arguing for such unity between Maimonidean rationalism and kabbalistic mysticism, writes Magid, Leiner aimed to provide a rejoinder to *maskilim* who claimed that there was a bifurcation between rational and mystical Judaism. In this context, Leiner sought to offer an Orthodox approach to Jewish tradition that would serve as an alternative to the modernizing tendencies of the Jewish enlightenment.⁵⁸ While I agree with Magid, I would go a step further and suggest that the tekhelet renewal project contributed to the unity of Jewish culture not only in its synthesis of disparate traditions; it constituted a broad corrective to the halakhic system, an attempt to supply a vital missing component: a forgotten commandment. Below, I will suggest additional messianic aspects of Leiner’s tekhelet project.

Leiner died in 1890. His third book on tekhelet, *Eyn batekhelet* (The fountain/spring of tekhelet), was published later that year. In this book, which is mostly a response to what seems to have been a widespread critique of his project, Leiner announced that the production of tekhelet had increased in scale. Although Leiner’s tekhelet was adopted by his followers, as well as some members of the Bratslav Hasidic group, they were relatively limited in number.

Herzog and the Beginning of Scientific Research of Tekhelet

The second stage of the modern renaissance of tekhelet is marked by the activities of Isaac Halevi Herzog, one of the leaders of religious Zionism in the first half of the twentieth century, who served as the chief rabbi of Ireland and later of the State of Israel. Herzog also took an interest in the ancient tekhelet dye and researched the topic for his doctoral dissertation, which was submitted in 1913 to the University of London.⁵⁹ This was the first academic research to be performed on tekhelet.

While both men were Orthodox rabbis, Herzog, in his approach, diverged significantly from Leiner, and his work took place in a different context. Leiner’s project was part of a larger Orthodox Jewish endeavor to prove the unity of all Jewish literature in the face of modern attempts to show its fragmented nature. Science played a marginal role in the service of this goal; scientific achievements were required for Leiner’s tekhelet project only to the extent that they supported his primary ideological aim. Herzog’s project,

however, was driven by an overt attempt to connect science and religion. It seems that for Herzog, science was not inferior to religion. Scientific conclusions could influence his religious decisions, just as religious texts could inform scientific research.⁶⁰ This difference in the role attributed to science is reflected by the references to scientists in the works of both tekhelet pioneers. Leiner mentioned scientific statements only in vague terms; his sources of information are not at all clear and might have been long outdated. By contrast, Herzog referred explicitly to the leading experts and scientific discoveries of his time, corresponding and sometimes even debating with several of these experts. Still, like Leiner, Herzog accorded great importance to the rabbinic references to tekhelet. Although Herzog did not refrain from changing his opinion upon the discovery of new evidence, he preferred to cite scientists whose opinions were congruent with Talmudic sources, as we will see below.

Herzog's starting point was the production and use of purple dye in antiquity, which served as a background for his main discussion of tekhelet. He introduced the characteristics of purple dye, and surveyed practices of purple dyeing among various ancient cultures: Phoenician (from which emerged the term Tyrian purple), Egyptian, Mesopotamian, and Israelite.⁶¹ After providing this background, Herzog delved into the Israelite tekhelet. His primary concern was the identification of the marine mollusks from which tekhelet may have been made in the past and whose use could be restored in the future. He began by surveying references to the *hillazon* in rabbinic sources,⁶² and then discussed actual candidates for the *hillazon* in accordance with contemporaneous research about mollusk-based dyeing.⁶³

Herzog surveyed several scholarly works that proposed candidates for the source of purple dye, noting that most of them did not mention the Jewish purple, or tekhelet. Among those few who did refer to tekhelet, Herzog disagreed with those that proposed squid, such as Leiner's *Sepia officinalis*, as a source.⁶⁴ He mentioned that the color of *Sepia officinalis* is not the color of the sea, as is stipulated in the Talmud; more generally, he believed that the *hillazon* should be a snail rather than a squid. He particularly singled out for disagreement the work of Alexander Dedekind, one of the few leading scientists to refer explicitly to tekhelet; Dedekind insisted that the *Murex trunculus* snail was the source of tekhelet.⁶⁵ Herzog wrote that the characteristics of the *Murex trunculus* do not perfectly correspond to the rabbinic characteristics of the *hillazon*.⁶⁶ Herzog also wrote that scientists of his time disagreed about the possibility of producing a blue dye from the secretion of

the *Murex trunculus* snail. Hence, while Herzog expressed polite admiration for Dedekind, he was reluctant to accept his conclusion that *Murex* snails were the source of the ancient dye.⁶⁷

Instead, Herzog decided to introduce a third mollusk: the snail called *Helix janthina*, identified in Linnaeus as *Helix ianthina* or *Janthina janthina*. The *Janthina* mollusk is a snail like *Murex trunculus* (both belong to the gastropod class among the mollusks), but it belongs to a different family. Its shell is rounder than that of the *Muricidae* and has a purplish hue. Like Leiner's proposal of the *Sepia officinalis* squid, Herzog's suggestion also had precedents. The German Bible scholar Wilhelm Gesenius (1786–1842) suggested in his thesaurus that *Janthina* was the tekhelet *hillazon*.⁶⁸ In addition to Gesenius, Herzog found support in Louis Germain (1878–1942) of the Musée National d'Histoire Naturelle, who, in response to Herzog's query, stated: "The only mollusks of the Mediterranean that can produce blue dye are the *Janthinas*."⁶⁹

But Herzog did not abandon the *Murex* snail entirely. The *Murex* option had several advantages that the *Janthina* option lacked. For example, as noted above, pits of empty *Murex* shells had been found among the archaeological remains at the eastern coast of the Mediterranean basin, hinting at the possibility that these pits were part of local dye houses. Hence, Herzog suggested that both snails were used for dyeing, each under different circumstances.⁷⁰ While both *Murex trunculus* and *Janthina janthina* met most of the requirements for the *hillazon*, each lacked a critical element. The *Murex* had a problem with the hue. At that time, only a violet (and not blue) dye could be extracted from it, while Herzog believed that the hue of tekhelet must be blue.⁷¹ Regarding the *Janthina*, the hue of its secretion seemed to fit the Talmudic characterizations, but there was no evidence that its secretions had been used for dye, as opposed to the archaeological findings that attested to the use of the *Murex*.⁷² Ultimately, Herzog voted for the *Janthina*.

After reaching a tentative conclusion regarding the identification of the *hillazon*, Herzog moved on to discuss the tekhelet dye. He analyzed various Jewish opinions about the hue of tekhelet, arguing that the hue of tekhelet was probably blue, and not other hues that were sometimes associated with tekhelet, such as green or violet.⁷³ He also discussed the process of dyeing and other aspects of the dye itself.⁷⁴

As no bluish dye had actually been produced by then, either by the *Murex* or the *Janthina*, the only claimant for the title of tekhelet on the basis of this criterion was still the Radzin dye, which Herzog decided to inspect. Ex-

pressing significant respect for Leiner, Herzog reported that he sent the Radzin tekhelet off for chemical inspection in two famed laboratories: the Manufacture Nationale des Gobelins in Paris; and the Department of Tinctorial Chemistry and Dyeing of the University of Leeds, in the United Kingdom. The chemical analysis revealed that the Radzin tekhelet was actually Prussian blue, which was known to be a synthetic colorant not originating solely from a marine mollusk.⁷⁵ That is, the dye produced for Leiner was manipulated in such a way that it lacked organic elements and was actually identical to the Prussian blue colorant, which is made from other, non-mollusk sources. In other words, the experts concluded that it was impossible to produce a blue dye from the black secretion of the *Sepia officinalis*, so that an additional material must have been added to the secretion. Herzog speculated that “it would seem that the late Hasidic chief was victimized by some fraudulent Italian chemist.”⁷⁶

Leiner began his tekhelet project at the age of forty-eight and died about three years later; Herzog submitted his dissertation at the age of twenty-five, and his longer life allowed him to deal with the subject for more than forty-five years afterward. In the following decades, he continued to engage in scientific and religious discourse about tekhelet. In his later years, he endeavored to move the project into a practical phase: to hunt the *hillazon*, attempt to produce a colorant from the secretion, and dye wool with the resulting colorant.⁷⁷

Herzog's research remained in English and was virtually unknown to the public, particularly to readers of Hebrew, until the 1930s, when he published a series of articles in Hebrew in the Orthodox journal *ha-Hed*, with the aim of summarizing his 1913 dissertation for Hebrew readers.⁷⁸ This publication both exposed his research to a wider public and generated some criticism.⁷⁹ Decades after Herzog wrote his dissertation, he continued to seek financial support for its publication, a request that makes clear that he saw his tekhelet research as a lifelong project.⁸⁰

In 1936, Herzog was appointed Ashkenazic chief rabbi of the Land of Israel under the British Mandate. Documents at the Israel State Archives show that Herzog leveraged his authoritative position to promote the research of tekhelet, including practical experiments. He also asked for the assistance of members of his family, especially his sister Esther Goldberg, who was then living temporarily in Europe; he requested that Esther deliver letters and materials to some of his contacts. In addition, Herzog looked for ancient vessels that had been colored using pigments derived from snails, and asked

Rabbi Shlomo Sasson to go to the British Museum with one of Herzog's relatives to inspect the colorants.⁸¹

Upon the establishment of the State of Israel in 1948, Herzog was appointed the Ashkenazic chief rabbi of the State of Israel. After his appointment, his research of the dyes—especially the possibility of producing a colorant from *Janthina* secretions—intensified because he could now ask for the assistance of Israeli state institutions in the name of his office. For example, Herzog consulted regularly with Shimon Fritz Bodenheimer (1897–1959), a prominent Israeli zoologist at the Hebrew University of Jerusalem.⁸² He asked the Fisheries Research Station (Ha-Taḥana le-Ḥeker ha-Da'ig ha-Yami), at the port of Haifa, to extract snail secretions (I have no information about the results of that request), and renewed his communication with the Gobelins Manufactory in France with the aid of the Israeli consulate and diplomats.⁸³ Between 1949 and 1951, Herzog corresponded with the Swiss-French chemist Rodolphe Pfister (1867–1955), who was the first to find ancient (Roman) mollusk-colored textiles in the Middle East.⁸⁴ Herzog shared his research with Pfister, but the latter was skeptical about the *Janthina* option proposed by Herzog because the produced dye was not steadfast enough. Still, Pfister sent Herzog recipes for the production of dyes from both *Murex* and *Janthina*, which Herzog forwarded to the staff of the Fisheries Research Station in Haifa.⁸⁵

While Herzog attempted to promote the study of his preferred candidate for the *ḥillazon*, the *Janthina* snail, he never totally rejected other options, such as Leiner's tekhelet. I noted above that in his dissertation, Herzog disqualified Leiner's tekhelet. However, careful inspection of Herzog's writings, both his published writings and his unpublished writing in his personal archive, reveals that he later felt more ambivalent about this matter. In a letter from 1936 published in *ba-Hed* (about two years after his articles on tekhelet), Herzog wrote that although he had previously held the opinion, supported by contemporaneous scientists, that the Radzin tekhelet had been made from the ink of the *Sepia officinalis* by fraudulent means, he now admitted, following conversations with Leiner's nephew, that there was no hidden component or procedure in the Radzin tekhelet. Herzog further stated that those scientists who asserted that a blue color could not be made from the black ink had made their claim based on hypotheses rather than experiments.⁸⁶ Herzog still considered the other snails that he mentioned in his dissertation (*Murex* and *Janthina*) serious candidates for the role of the *ḥillazon*, but it seems that by the 1930s, Herzog had accepted the Radzin tekhelet as potentially

legitimate and did not reject it, as he had in his dissertation. He so aspired to restore the ancient tekhelet dye that he was willing to accept any dye that conformed to the rabbinic references.

Herzog once again reversed his opinion on the Radzin tekhelet in the 1950s. In 1951, the Israeli branch of the Radzin Hasidim announced in the Israeli press that they had rediscovered their tekhelet after its loss during the Holocaust.⁸⁷ In the wake of that announcement and a demonstration of the dyeing process,⁸⁸ the leader of the New York branch of the Radzin Hasidim, Rabbi Yeruham Leiner, asked Herzog to inspect the newly announced tekhelet.⁸⁹ Herzog then initiated an analysis of a fabric dyed using the renewed dye. In February 1952, he sent a sample of dyed fabric to the Gobelins Manufactory in Paris, asking whether it was possible that it had been dyed using the secretion of *Sepia officinalis*. According to Herzog, Gobelins responded with a report stating that "it is quite likely that the thing is genuine," referring to the claim that blue was obtained from *Sepia officinalis*.⁹⁰

Disturbed by this indecisive response from Gobelins, Herzog began a correspondence with William Bradley of the Department of Colour Science of the University of Leeds, asking for his opinion.⁹¹ On Bradley's request, Herzog contacted the chief rabbi of Rome, asking him to send mollusks available only in Italy to the British scientist.⁹² Bradley initially reported that blue could not be produced from the secretion of the *Sepia officinalis*; shortly after, however, he expressed a more hesitant opinion, proposing to make an additional examination.⁹³ Eventually he wrote, after he became acquainted with the recipe of the Radzin tekhelet, that the secretion of the *Sepia officinalis* was not required for producing the blue dye.⁹⁴ This seemed to support Herzog's initial opinion. Herzog then turned once again to Gobelins and asked for another assessment. The subsequent report from March 24, 1953, expressed a more decisive opinion, stating that blue could not be obtained from the secretion of *Sepia officinalis*.⁹⁵ Eventually, Herzog accepted the opinion that blue cannot be produced from the secretions of *Sepia officinalis* without the addition of other components. Hence, he concluded that the Radzin tekhelet could not have been made solely by a secretion of the *hillazon*, and therefore could not be considered true tekhelet.

Herzog enthusiastically looked for any evidence to mollusk-dyed textiles and other artifacts. He was disappointed that an American expedition that searched for the tomb of the queen of Sheba did not find such artifacts;⁹⁶ he established a connection with the director of the Museum of the Vatican about possible mollusk-dyed textiles,⁹⁷ but he was disappointed by a negative

response from that museum about remaining artifacts of the plundered Jewish temple.⁹⁸

What motivated Herzog in his research on tekhelet and later attempts to restore the dye? In his study of Herzog's legal project, Alexander Kaye argues that Herzog was ambivalent toward European civilization, as demonstrated by "his assertion of the superiority of Judaism coupled with his tendency to measure that superiority against modern European standards."⁹⁹ Although Kaye is referring here to Herzog's approach to Jewish and European legal systems, perhaps this ambivalence can also explain Herzog's activities in the later stages of his tekhelet project. Herzog used several state institutions to advance the restoration of ancient tekhelet: the Hebrew University, the Fisheries Research Station, and the Israeli Embassy in Paris. He seems to have believed in the supremacy of halakhah (Jewish law) in the modern State of Israel. According to such an opinion, it is the purpose of the modern Israeli state to promote the performance of halakhah.

Notwithstanding Herzog's devotion to the research of tekhelet for almost five decades, his research did not lead to the practical production of any dye. It was only after his death that his efforts reached fruition, thanks to new archaeological findings, as well as advances in the research and technology of chemistry.

The (Re)Invention of a New Dye in the Twentieth Century

The second tekhelet dye, which was introduced in the 1980s, was based on a successful attempt to produce a bluish dye from the secretion of the *Murex trunculus* snail. This achievement resulted from an interest in tekhelet that had been growing since the 1960s, manifested in three separate, yet occasionally intersecting, research paths that would eventually bring about the introduction of the *Murex* tekhelet: (1) the secular Zionist archeological excavations in the Judean desert, which drew the interest of Sidney Edelstein; (2) the Modern Orthodox project of the *Talmudic Encyclopedia*, which attracted Israel Ziderman to the pursuit of tekhelet; and (3) the Hasidic context of the Radzin tekhelet, which intrigued Otto Elsner.

The first research path was marked by the entrepreneurship of Sidney Milton Edelstein (1912–1994), a Jewish American chemist, textile industri-

alist, and donor to Israeli universities.¹⁰⁰ Edelstein wrote that in 1960, the Hebrew University of Jerusalem asked for his assistance in identifying dyed textiles that had been discovered in excavations in the Judean desert conducted by Israeli archaeologist Yigael Yadin.¹⁰¹ Edelstein analyzed the findings in his private laboratory in the United States. One find was a purplish piece of wool that was suspected to have been dyed using a mollusk secretion but turned out to have been dyed using other materials. Edelstein's results and conclusions were published in the excavation reports, raising the interest of the Radzin Hasidim, who asked him to analyze their tekhelet. Edelstein's conclusion was identical to Herzog's: that the Radzin tekhelet was not produced solely from the secretion of the squid. Rather, other components had been added to the dye, thereby creating the synthetic Prussian blue. In 1969, Edelstein was first exposed to Herzog's dissertation, which played an important role in his project: "My interest was aroused because I was looking for [a] Halakhic authority which could help me to find out how to prepare the true tekhelet. At that time I had visions of once again restoring the industry in Israel so that the *šīṣīt* could be dyed in the original way with real tekhelet."¹⁰² Believing that Jewish texts should be the sources, even the prescriptions, for the restoration of the ancient tekhelet, and equipped with Herzog's religious authority, Edelstein took the next step, which was to initiate a scientific endeavor in order to produce the desired tekhelet:

In 1972, I became active at Haifa University in helping to set up a Centre for Maritime Studies. In my meetings with the head of the Centre, Dr. [Elisha] Linder, I was requested to make suggestions for research work. I suggested that the Centre should undertake a real study for the various sea snails which might be the source of tekhelet. It was agreed that this should best be done by a marine biologist. We felt that the right way to study the problem was to examine the various sea animals under live conditions, make dye from their secretions, and use the thesis of Rabbi Herzog as a Halakhic guide. . . . For the first time, a true scientific biological study was begun by Dr. [Ehud] Spanier and his associates, and continued over several years.¹⁰³

Edelstein himself did not take an active part in the search for the mollusks or the preparation of the dye; he was an initiator, and his actions pushed

others to take up the gauntlet. The resulting research by the marine biologist Ehud Spanier and his associates provided the mollusks for the two other independent research efforts on the subject: the projects of Israel Ziderman and Otto Elsner.

Israel Ziderman (b. 1936), who served as a senior scientist at the Israel Fiber Institute, was first drawn to the issue of tekhelet in 1969, when the editors of the *Talmudic Encyclopedia* asked him to evaluate Herzog's dissertation for the preparation of the article "Hillazon."¹⁰⁴ Like Edelstein, Ziderman also began researching the subject, basing his efforts on Herzog's dissertation. A biochemist and an Orthodox Jew, he combined scientific investigation with religious-legalistic considerations. In the 1970s, he became acquainted with the Center for Maritime Studies of the University of Haifa and contacted Ehud Spanier, who sent Ziderman some live *Murex* snails. From those snails, Ziderman succeeded in producing a violet dye that he identified as tekhelet. In 1984, he founded Keren Hatekhelet (Tekhelet Foundation) "in order to promote the perpetuation of Rabbi Herzog's study."¹⁰⁵ The association did not achieve the goals set by its founder and eventually closed its doors in 1994.

The third research path was spearheaded by Otto Elsner, a textile expert and professor at the Shenkar College of Engineering and Design in Ramat Gan, Israel. Elsner was attracted to tekhelet when a group of Radzin Hasidim asked for his help in improving the tekhelet that they had prepared according to a procedure attributed to their rebbe, Gershon Henekh Leiner. Elsner wrote that he immediately understood that the Radzin tekhelet was not the "real" tekhelet and refused to cooperate with them. It seems that he suspected that this was a fraud. Nevertheless, the request of the Radzin Hasidim sparked his interest in the subject. He conducted extensive research on tekhelet and concluded that as long as there was no archaeological evidence of dyed tsitsit, one could not draw definite conclusions. He also adopted the premise, which was actually a personal impression, that the hue of tekhelet must be blue.¹⁰⁶ It was only after he began cooperating with Ehud Spanier from Haifa University that he obtained mollusks for his experiments. Eventually, in the mid-1980s, Elsner and Spanier succeeded in producing a blue hue from a *Murex* secretion by exposing the solution of the dissolved pigment to the sun.¹⁰⁷ Elsner explicitly stated that this result was based on a study conducted by two German scientists.¹⁰⁸ Nevertheless, later narratives of tekhelet would describe it as a serendipitous and original theoretical innovation.

Although some of the aforementioned figures were Orthodox Jews who wanted to renew the laws of tekhelet, all of them remained within the domain of academic research. It was Rabbi Eliyahu Tavger (b. 1960) who actually took the scientific achievements out of the laboratory and applied them to religious life. Tavger's attention was drawn to the ongoing tekhelet research in 1986 by Menachem Burstein (b. 1956), an Orthodox rabbi who was interested in tekhelet and later published a comprehensive monograph on the topic.¹⁰⁹ Based on his reading of the Talmud, Tavger believed that the color tekhelet must be blue, but when he tried to produce dyes from snails, the result was always purple-red. Only when Elsner succeeded in producing the color blue was Tavger convinced that the true tekhelet had finally been found. Consequently, he began dyeing his tsitsit with that blue dye.

In 1991, three American Orthodox Jews contacted Ziderman regarding tekhelet: Yoel Guberman, who had vowed to promote the tsitsit law among Jews in the wake of a personal tragedy; and two of his friends, Ari Greenspan and Baruch Sterman. Ziderman introduced them to Tavger, and the four of them joined Ziderman's Keren Hatekhelet with a practical objective: to promote the research, production, and adoption of tekhelet. Eventually, Tavger, Guberman, Greenspan, and Sterman left the foundation and founded Ptil Tekhelet, which aimed "to produce tekhelet strings and promote research and educational projects." Although Ziderman's Keren Hatekhelet was the first tekhelet association, the younger Ptil Tekhelet became the more prominent organization to promote the research, production, and dissemination of tekhelet.

A continuing frustration for advocates of tekhelet was the absence of mollusk-dyed textiles in archaeological findings of the southern Levant (let alone the "smoking gun" of a mollusk-dyed tsitsit). This impasse came to an end in 2011, with two findings from the Judean desert. In 2011, Zvi C. Koren, an analytical chemist and director of the Edelstein Center for the Analysis of Ancient Artifacts at Shenkar College of Engineering and Design, introduced for the first time a blue-violet piece of textile dyed using the *Murex*, found in the excavations of Masada.¹¹⁰ In 2013, Naama Sukenik of the Israel Antiquities Authority and her collaborators presented three pieces of *Murex*-dyed textiles, one with a blue-green hue, and suggested that this dye might be the ancient tekhelet (for one of these pieces, see Figure 3 in the color plates).¹¹¹

The success in producing an indigo-blue color from *Murex* secretions during the 1980s resulted in a wave of publications on the topic of tekhelet. While some publications opposed the *Murex* tekhelet (as we will see in Chapter 5),

many were favorable. The pioneering work was the collection of studies *The Royal Purple and Biblical Blue*, which was published in 1987. This work, with a preface by Edelstein, contained Herzog's dissertation, followed by new scientific contributions by tekhelet activists Spanier, Elsner, and Ziderman. Another important publication that reflected the reception of tekhelet in American Modern Orthodoxy was the collection *Tekhelet: The Renaissance of a Mitzvah*, published in 1996 by Yeshiva University. Since 1991, however, perhaps the most prolific writers on the subject have been the members of Ptil Tekhelet. The organization's extensive public electronic library includes not only writings by these activists but also most of the articles about tekhelet in the Orthodox Jewish press.¹¹² Ptil Tekhelet publishes a periodical dedicated to articles on tekhelet. The most updated monograph on tekhelet is *The Rarest Blue: The Remarkable Story of an Ancient Color Lost to History and Rediscovered*, by Baruch Serman (with Judy Taubes Serman), published in 2012, and translated into Hebrew in 2014.¹¹³ Baruch Serman, mentioned above as a founder of Ptil Tekhelet, is an Orthodox Jew with a Ph.D. in physics.

While the activists mentioned in this section seem to have collaborated on the production of a new tekhelet dye, they differed in their understanding of the dye's exact characteristics. In addition to these internal debates among the supporters of the *Murex* tekhelet, they also found themselves in fierce disagreement with the supporters of Leiner's tekhelet. We will now look at two of the debates concerning the tekhelet dye.

The Fight Between the Squid and the Snail

The advances in the research and development of tekhelet described in previous sections should not give the impression of a teleological march toward the "real" or "authentic" tekhelet dye. The renewal of tekhelet was controversial from the very beginning. The arguments of those who rejected the entire enterprise of renewal will be discussed in Chapter 5. In the present chapter, I focus on the debates "inside the family"—namely, debates between the supporters of the different dyes. This section focuses on debates on the identification of the *hillazon*, as well as on the making of the dye and on its chemical composition; the following section will focus on debates about the hue of the resulting dye.

As noted above, Herzog showed ambivalence toward Leiner's tekhelet. Likewise, *Murex* advocates of the second half of the twentieth century were

also lukewarm toward Leiner's tekhelet project. On the one hand, they considered Leiner the pioneer of tekhelet and admired him for initiating the discussion around tekhelet production, as well as for his practical pursuit of the dye. On the other hand, they criticized his project as erroneous because he pointed to the *Sepia officinalis* squid as the *hillazon*. They claimed that while pigments for painting had been produced from this mollusk, it was not historically known as a source of dye for textiles. Moreover, since the techniques for producing pigments from the *Sepia officinalis* had always been known, one could not claim that it had been "concealed," as tekhelet must have been. *Murex* advocates also repeated Herzog's argument that Leiner's dye had been manipulated in such a way that it eventually became Prussian blue and was not really made of the secretion of the squid alone. It is no surprise, then, that this sharp criticism, which could be interpreted as positing that Leiner had produced a fake tekhelet, elicited a no less pointed response from the Radzin Hasidic camp, which disqualified the *Murex* tekhelet dye.

To understand these debates about the composition of the *Murex* tekhelet, we should briefly describe its dye production process. The secretion of the *Murex* is a liquid that contains substances that, when exposed to air and light, are converted into purple pigments—for example, dibromo-indigotin; other pigments are also produced together with it.¹¹⁴ This means that each of these molecules comprises two bromine atoms attached to an indigotin fragment, the latter chemically identical to the blue pigment produced from the indigo plant. Only by exposing the solution containing these dissolved pigments to sunlight was Otto Elsner able to succeed in separating the bromine atoms from the dibromo-indigotin, thereby generating mostly indigotin, or indigo blue.

The sharpest critique of the *Murex* tekhelet by the Radzin Hasidim has come from Mendel Singer, an American Radziner Hasid and a professor of medicine. In 2001, he conducted a debate with Baruch Sterman of Ptil Tekhelet about the legitimacy of the *Murex* tekhelet. The debate, published in an Orthodox journal, focused both on the identification of the *hillazon* and the composition of the resulting dye.¹¹⁵ Regarding the *hillazon*, Singer claimed that the following description of the *hillazon* in the Babylonian Talmud is the "strongest" or "primary" criterion for identifying the *hillazon*:¹¹⁶ "This is the description of the *hillazon*: its body is like unto the sea; its shape is like unto a fish, and it comes up once in seventy years; and with its blood tekhelet is dyed, wherefore it is very dear."¹¹⁷ In relation to this statement,

Singer argued, the *Murex* fails to pass the criterion of “its shape is like unto a fish.”

In contrast to Singer’s approach, which relied heavily on Talmudic references, Baruch Sterman tried to minimize the number of rabbinic criteria. In Sterman’s response to Singer, on behalf of Ptil Tekhelet, he claimed that many of the Talmudic references should be classified as aggadic material (nonlegalistic text), such as the attribution of proficiency in dyeing tekhelet to the tribe of Zebulun. This sort of aggadic material should not be considered halakhic criteria for identifying the *hillazon*.¹¹⁸

The second major argument presented by Singer was that Ptil Tekhelet’s claim that tekhelet is chemically identical to indigotin contradicts the Talmudic tests that were introduced in order to distinguish between the two.¹¹⁹ In other words, indigotin tekhelet cannot pass the tests for tekhelet described in the Talmud. He argued that since the Talmud states that the tests were performed, “it would seem presumptuous to doubt the veracity of the Gemara’s tests. It is the scientist’s conclusion that the *Murex* indigo is techeilet that needs to be re-examined.”¹²⁰ For their part, Baruch Sterman and other members of Ptil Tekhelet offered explanations as to why the Talmudic tests still worked. Against the backdrop of this debate, both sides consulted with Roald Hoffmann (b. 1937), a Nobel laureate in chemistry (1991), who showed considerable interest in the chemistry of tekhelet and admired Herzog’s work.¹²¹ Sterman, a *Murex* supporter, claimed that the *Murex* tekhelet contains remains of *Murex* meat that cannot be found in the indigo plant. Sterman suggested that this difference would allow the *Murex* tekhelet to pass the Talmudic tests. To support this position, he wrote: “Nobel chemist Prof. Roald Hoffmann has told me that he finds this proposition plausible.”¹²² Singer responded: “Dr. Sterman suggests that Nobel chemist Dr. Roald Hoffmann has deemed his explanation plausible. I contacted Dr. Hoffmann, and he merely maintains that the presence of bits of snail meat makes it theoretically possible to develop chemical tests to distinguish snail indigo from plant indigo, not that it was at all likely for the snail meat to have any impact in the chemical test of the Gemara.”¹²³ Hoffmann was interested in the connections between science and Jewish tradition.¹²⁴ He expressed general sympathy for the work of Ptil Tekhelet and at least once even declared their tekhelet authentic; but when it came to a specific scientific issue, he was cautious in formulating his opinion and did not take sides.

In addition to the debates about the identification of the *hillazon* and the composition of the resulting dye, there were debates about the prepara-

tion of the dye. Given that the method of preparation of the historical dye was unclear, various activists of tekhelet attempted different methods; each was criticized as being anachronistic, in that it could not have been used in antiquity in the manner portrayed by rabbinic sources. Supporters of the Radzin tekhelet claimed that exposure to the sun, a crucial step in the preparation of the *Murex* tekhelet, is not mentioned in Talmudic descriptions of the process of dyeing. Zvi C. Koren, not a Radzin Hasid but the scientist to discover the first *Murex*-dyed cloth from ancient Palestine, claimed that in contrast to the Ptil Tekhelet position, exposure to the sun could not have been part of the ancient dye preparation process. Another point of debate between the supporters of the squid and the supporters of the snail was that the dye produced from the *Sepia officinalis* tended to fade, compared with the steadfast color of the dye that originated from the *Murex trunculus*.

These debates about the details of preparation and composition required some knowledge of chemistry; as such, they were conducted primarily by modern scientists. However, one debate did not require such knowledge; indeed, it was the continuation of an ancient disagreement. This was the debate about the hue of tekhelet, to which we now turn.

What Is the Hue of Tekhelet? Modern Debates

We have already seen that in premodern times, there were different views as to the hue of tekhelet.¹²⁵ For example, the Babylonian Talmud tends to associate tekhelet with blue, whereas, according to the Palestinian Talmud, it seems that tekhelet more closely resembles green. And in the Middle Ages, several rabbis, commentators, and poets, such as Maimonides and Moshe Ibn Ezra, imagined tekhelet as dark blue, a hue similar to black. However, as long as a renewal of tekhelet did not take place in practice, the question of the hue remained theoretical as well. The question became pressing as soon as new tekhelet dyes were introduced. The hues of these dyes did not always conform to the rabbinic sources that described tekhelet. Moreover, as contemporary experience shows, the exact shade of organic dyes varies from one production run to the next. So even if a particular hue was agreed upon, that hue could not have been accurately repeated in each and every dyeing session. Hence, the actual hue of the tekhelet dyes was a matter of intense debate. These debates began as soon as Leiner presented his tekhelet, and further developed decades afterward, when the *Murex* tekhelet was introduced.

Because the secretion of *Sepia officinalis* is black, Leiner's tekhelet was black as well—or very dark (at least, in his first attempts at tekhelet production). That characterization of tekhelet was not exceptional in the medieval period, nor was the opinion that the hue of tekhelet should be green; but in modern times, Leiner's black tekhelet proved a challenge and a source of criticism¹²⁶ because he and his critics shared the common opinion that tekhelet should have a bluish hue. Hence, Leiner had to bridge the gap between theory and praxis, and reinterpret the sources to refer to the dark shade produced.

In his first book, Leiner dedicated about two pages to a discussion of the hue of tekhelet, claiming that tekhelet was dark blue. In that book, he based his opinion primarily on Maimonides. According to Leiner, Maimonides was a reliable source because he saw tekhelet, which was available in his time (although Leiner was probably wrong).¹²⁷

In his second book, Leiner dedicated an entire chapter to the detailed exploration of this question.¹²⁸ Leiner wrote that some of his contemporaries had gotten lost in the various rabbinic opinions about the hue, so he thought that it would be helpful to elaborate on the matter. He addressed the seeming contradiction between the blue and green alternatives in the Babylonian and Palestinian Talmuds; after a lengthy discussion, he concluded that tekhelet was primarily blue, mixed with a small dab of green. Then he rejected the argument that tekhelet was black and, in fact, distanced himself from his earlier opinion that tekhelet was dark blue.¹²⁹ He argued that the term *shāḥor* denotes the darkness of a color rather than the color black itself, and therefore concluded that tekhelet was actually “blackish green”—not a true green but something closer to a dark blue-green hue.¹³⁰ That is, the same sources that he had used in his first book to support the argument that tekhelet was black were deployed to support a different argument: that tekhelet was the lighter dark blue-green, in his second book. Hence, in his second book, Leiner seems to shift toward lighter hues. As I will show, the majority of modern discoverers and supporters of tekhelet share this preference for lighter shades.

It seems that Leiner was still not satisfied even with his dark blue-green solution, perhaps because he was aware of inconsistencies in his approach. Therefore, he introduced an additional argument that broadened his previous one: he proposed that tekhelet was actually a mixture or unification of all colors from which all other colors can be seen and even shine. This opinion also has its sources in premodern texts, especially those by medieval com-

mentators and kabbalists, some of which were discussed above.¹³¹ This opinion bolstered Leiner's debating position because it allowed him to present any opinion about any specific hue without being accused of supporting a "wrong" hue.

To substantiate his suggestion that tekhelet was a mixture of all colors, Leiner added a scientific argument to the kabbalistic claim. He discussed the physical phenomenon of the chromatic dispersion of light in a prism. While Leiner probably did not read Newton's *Opticks*, he did say explicitly that he visited a school in which the science of optics was studied and saw the prism. He provided the following observations: (1) there are exactly seven colors in a prism (red, orange, yellow, green, light blue, dark blue, violet); (2) the green-blue-violet colors are always adjacent to one another and always in the lower part of the prism; and (3) the sun's rays are more abundant in the color blue than in other colors.¹³²

Of course, Leiner's first observation was not accurate, for the spectrum of colors is continuous rather than discrete. Newton is best known for dividing the visible spectrum into seven, based on the seven tones of a musical octave.¹³³ In the enumeration of seven colors in nature, Leiner may also have been influenced by previous Jewish sources such as those of Rabbi Sa'adia Gaon.¹³⁴ Alternatively, and because the colors in Leiner's scheme are those of Newton rather than Sa'adia, it is possible that he became acquainted with Newton's observations through one of the eighteenth- or nineteenth-century Hebrew writings on science by Jewish *maskilim*, such as the aforementioned Isaac Satanow, who compared the seven colors of a prism with seven *sefirot* of kabbalah, in which tekhelet receives all colors.¹³⁵ In any event, we cannot be certain of the sources of Leiner's enumeration of the colors on the spectrum; possibly, even he was not entirely aware of the combination of sources that informed his taxonomy.

The second observation on the prism is correct: whether the prism is upside down or right side up, the bluish part is indeed at the bottom. As for the third observation: oddly enough, this is in accordance with Einstein's later formulation of the photoelectric effect (based on Max Planck's notion of energy quanta), according to which a photon of blue light carries more energy than a photon of red light.¹³⁶

Independent of their scientific value, Leiner's physical observations reaffirmed his kabbalistic observations. The seven colors of the prism correspond to the seven lower *sefirot* that are active in this world, and the location of the green-blue-violet colors correspond to the location of the tekhelet as

the lowest *sefirah*. Moreover, his observation about the energy of the blue light reaffirmed the notions that tekhelet receives its energy from all the colors above it and that all colors are reflected in tekhelet. Although he did not self-identify as Modern Orthodox, Leiner actually harmonized between science and religion.¹³⁷

Leiner's discussion of the hue of tekhelet in his second book is characterized by an inclusive attitude that allowed a wider range of colors to be categorized as tekhelet. It is possible that only after his prism experience did Leiner become aware of the continuous character of the spectrum; this is what allowed him to adopt an approach that considered a diversity of options. Be the source of this shift as it may, by arguing for a wider spectrum of possibilities, Leiner rendered irrelevant some possible disagreements on the issue of the hue.

The assertion that tekhelet is a color that integrates many (if not all) colors was also supported by Leiner's experience with his *hillazon*. Leiner wrote that the *hillazon* changes its colors (he used the term "chromotropy"); he attributed this to the changes in the color of the *hillazon's* secretion.¹³⁸ We can see that Leiner's "pluralistic" stance regarding the hue of tekhelet is inspired by several disparate sources of inspiration: kabbalah, optics, and biology (regardless of their scientific accuracy). It seems that the concurrence of all these phenomena gave Leiner the strong feeling that he had discovered something significant, a kind of deep structure of the universe.¹³⁹

Leiner debated the hue of tekhelet against anonymously cited critics; but in the case of the twentieth-century *Murex* tekhelet, the debate was more transparent, and we know who supported which opinion. Most of the *Murex* advocates supported the opinion that tekhelet was blue. This claim gained strength following Elsner's success in producing a blue shade from the secretion of the *Murex*. It was accepted by members of the Ptil Tekhelet association and was the basis for the production of the blue tekhelet thread by this association. Supporters of the blue option also followed a theoretical argument for blue presented by Herzog. Herzog based his claim on the Talmudic phrase that only God can distinguish between true mollusk-based tekhelet and fake plant-based dye, which was termed *kala ilan* and known to have been produced from the indigo plant.¹⁴⁰ Although indigo blue is dark blue, Herzog did not insist on a particular shade of blue; his primary concern was to define the hue as blue—any blue—rather than other hues sometimes associated with tekhelet, such as green or violet.

Notwithstanding this widespread acceptance of the blue tekhelet, a few prominent *Murex* advocates supported the violet option. The aforementioned Sidney Edelstein believed that the hue of tekhelet was produced by a combination of blue indigotin and some purple dye, and it seems that he did not change his mind when he learned of Elsner's achievement.¹⁴¹ Another supporter of violet was Israel Ziderman, the aforementioned researcher of tekhelet.¹⁴² Indeed, Ziderman debated this issue with supporters of the blue option.¹⁴³ This disagreement about the hue was one reason that supporters of the blue option left his association, Keren Hatekhelet, and established the better-known Ptil Tekhelet.¹⁴⁴ Although he eventually became convinced that the bluish hue produced by Ptil Tekhelet was legally acceptable,¹⁴⁵ Ziderman debated the members of Ptil Tekhelet for many years, providing various arguments in support of the violet option.

Another debate focused on the lightness or brightness of the blue hue of tekhelet. Like Leiner, Sterman and Ptil Tekhelet also support a light bluish hue. Although Ptil Tekhelet proposes light blue, there are voices that support a darker blue that might even resemble purple. We have already seen that Maimonides and other medieval authors probably thought that tekhelet should be dark.¹⁴⁶ The staunchest supporter of dark blue is the aforementioned Zvi C. Koren, who introduced a dark violet *Murex*-dyed piece of textile from Masada to the debate. Koren argued that the color of the ancient tekhelet was a purple-blue hue, more similar to dark blue than to the light blue advanced by Ptil Tekhelet. Thus, the argument for dark blue harks back to the violet option, this time with archaeological artifacts. In an interview with the *New York Times*, Koren stressed that his discovery did not contradict the rabbinic claim that tekhelet resembles the sky—rather, the resemblance is to a night sky. In the article, Baruch Sterman responded that the new discovery of the textile from Masada would not change Ptil Tekhelet's guidelines and that all shades of blue were acceptable to the ancient Israelites.¹⁴⁷

But what seemed to be a genteel exchange of ideas evolved into a bitter debate on the pages of the *Biblical Archaeology Review* in "The Great Tekhelet Debate—Blue or Purple?"¹⁴⁸ Without going into detail, I will say that Baruch Sterman and Judy Taubes Sterman defended their light-blue position, claiming: "The provenance of the Masada fragment, however, is a matter of pure speculation."¹⁴⁹ Koren responded twice to their arguments, while also pointedly attacking the Stermans.¹⁵⁰

Without evidence of any tekhelet-dyed tsitsit from antiquity, the exact hue of ancient tekhelet remains unknown (assuming that there was a single exact hue at all). However, it is possible to conclude that while some pre-modern opinions held that the hue of tekhelet was dark blue, modern supporters of the renewal of tekhelet have tended to emphasize lighter, brighter hues. One can speculate that their optimism found its expression in this preference; brighter hues are often associated with positive emotions, as is shown in studies of colors and emotions conducted by psychologists.¹⁵¹

Messianic and National Sentiments

Rabbi Zephaniah Drori (b. 1937) is well known in religious Zionist circles in Israel. As a supporter of the renewal of tekhelet, he wrote that the physical transformation of the tekhelet dye produced from the *Murex*, with its changes from reddish to bluish, is congruent with the aforementioned kabbalistic text describing the spiritual divine process in which the attribute of judgment is transformed to mercy.¹⁵² That divine transformation signifies the imminent redemption, and the preparation of the tekhelet dye is a repeating signal of that divine process. For Drori, the renewal of tekhelet is a sign of redemption. But Drori is not alone.

The renewal of tekhelet was understood in redemptive and even messianic terms by the tekhelet activists of the various groups, notwithstanding the different historical contexts of the projects of renewal and notwithstanding the debates between the supporters of the two renewed tekhelet dyes.¹⁵³ A major expression of that sense of redemption was the aspiration, reflected by the revival of tekhelet, to renew the ancient Jewish past. That sort of objective, which found expression in more than one way, can be characterized, following Gershom Scholem, as the restorative messianism of “Renew our days as of old” (Lam 5:21).¹⁵⁴ In this section, I will highlight some of those expressions.

In his studies on Radzin Hasidism, as mentioned above, Shaul Magid has characterized Leiner’s projects as messianic in that they expose and actualize the unity of Jewish literature—namely, the unity of Maimonidean rationality with the mystical kabbalah of the Zohar and Luria.¹⁵⁵ In addition, I argue that Leiner’s tekhelet renewal project was characterized by additional messianic aspects. Since tekhelet was a biblical commandment, the renewal of tekhelet brought back a missing element of halakhah, thereby ad-

vancing halakhah to a state of perfection. Hence, the renewal of tekhelet was an attempt to restore an alleged historical reality in which the commandments were performed to perfection. This aspiration to a flawless restoration of the Jewish past conforms with messianic visions such as those of Maimonides. Still, Leiner's attempt did not include any nationalistic agenda to reestablish a Jewish state in the Land of Israel. It was a renewal of halakhah rather than the Jewish nation.

The twentieth-century tekhelet was driven to revive the Jewish past by additional motives compared to Leiner's project. In this case, there was also a Zionist motivation, the restoration and revival of the ancient Jewish daily life—in particular, the ancient practice of mollusk-based dyeing—in the Land of Israel. Some supporters of tekhelet also aspired to restore the ancient Israelite Temple, for which the availability of tekhelet was a requirement. Ptil Tekhelet activists belong not only to the Modern Orthodox world but to the religious Zionist camp. Yet, in a letter from 1950 to the Swiss-French chemist Rodolphe Pfister, Herzog wrote that his motivations are legalistic and not messianic: "About connection with the Temple there can be no talk since the restoration thereof is a matter of a purely Messianic nature which we leave entirely to a supernatural divine manifestation,"¹⁵⁶ and some tekhelet advocates today deny that they promote messianic objectives.¹⁵⁷

Additionally, some *Murex* advocates claim that renewing the tekhelet commandment in the Land of Israel symbolizes the Zionist idea of a renewal of Jewish sovereignty.¹⁵⁸ The *Murex* snail, whose shells were found in archaeological sites around the Mediterranean coast, was found once again in the twentieth century in the same area, this time alive, thereby serving as a link connecting past and present. Accordingly, one can also speculate that for *Murex* supporters, the lost *hillazon* is itself a living symbol of the people of Israel, who were exiled and returned to their homeland. Moreover, the alleged rediscovery of the *Murex* tekhelet also affirms the central place of the Israelites in antiquity.

Notably, this fascination regarding the possible restoration of an ancient local industry was not confined to religious supporters of tekhelet but was shared by secular Zionist scientists such as Ehud Spanier, Otto Elsner, and perhaps even Yigael Yadin. Zionist scientists' interest in tekhelet may have intensified as a consequence of the attribution of the Zionist flag's blue color to tekhelet. The alleged rediscovery of tekhelet functioned not only as the revival of a religious ritual but also as the restoration of a national culture, yet another step in the revival of the Jewish people in the Land of Israel.

The national (and not necessarily religious) fascination with tekhelet is perhaps related to the fact that the color blue is the only chromatic color of the flag of the State of Israel, thereby making it a national color of the Jews. Although there is a popular perception that the blue color of the Zionist flag was chosen during the first Zionist Congress to recall the blue color of the tsitsit, historians have noted that the color blue as the color of a Jewish flag appeared decades earlier, under the influence of various motifs, including not only the tsitsit but also the color of the vestments of priests, as well as the color of the sky of the Land of Israel.¹⁵⁹ In addition, the color blue was determined by the State of Israel to be a mandatory color in the national symbol of the menorah, thereby deepening the role of blue as an Israeli national color.¹⁶⁰ This wider array of sources of inspiration might also contribute to explaining the fascination of secular scholars with the alleged rediscovery of the *hillazon* in the Land of Israel, as well as the hopes of religious scholars to renew the tekhelet artifacts of the Temple as part of the religious and national renewal of the Temple liturgy.

Archaeological discoveries that encouraged the tekhelet rediscovery—ancient pits of *Murex* shells on the eastern Mediterranean shore, as well as pieces of mollusk-dyed cloths from the Judaeen desert—translated the tekhelet initiative into an attempt to use archaeology for national purposes. Moreover, the fact that some of the archaeological findings were from the Judaeen desert, and that Yigael Yadin himself thought or hoped that they were made of tekhelet, directly connected the lesser-known tekhelet initiative to the larger archaeological projects of the Judaeen desert, particularly Masada.

The presentation of the twentieth-century tekhelet as a revival of the Jewish past should be understood as yet another instance in which archaeology has been used to shape the image of the past, an image that will then bolster contemporary nation-building projects.¹⁶¹ An example is the use of archaeological evidence to construct the biblical past.¹⁶² In the Jewish context, the most striking example of the use of archaeology toward national aims is what Nachman Ben-Yehuda termed the “mythmaking” of Masada.¹⁶³ Similarly, the rediscovery of tekhelet can be understood as yet another attempt to use archaeology and ancient Jewish history in the service of a Jewish religious-nationalistic agenda.

In his famous essay on Jewish messianism, Gershom Scholem noted that the restorative orientation toward the past is intertwined with a utopian trajectory toward the future.¹⁶⁴ In particular, the attempts to renew the Jewish

past by reintroducing the use of tekhelet also have redemptive and even messianic overtones directed toward the future and not just the past. In the case of Leiner, the messianism was that of enhanced sacredness, by virtue of the addition of a hitherto-missing link to a set of commandments required by Jewish law.¹⁶⁵ That sort of messianism is both personal and collective—personal because it is related to the personal performance of the commandment of the tsitsit; and collective because it hints at the possibility of the renewal of the Temple for all Jews. Messianism of that sort can be discerned in Leiner's writings.¹⁶⁶

The *Murex* tekhelet involved a more public or collective messianism, according to which the renewal of tekhelet was part of a deep process of the restoration of the Jewish past and therefore brought the utopian redemption closer to realization. Notably, here, too, the renewal of the Temple lurked in the background but was not the main aim. However, contemporary Temple activists, who reacted positively to the renewal of tekhelet, have emphasized the aim of renewing the Temple liturgy using tekhelet.¹⁶⁷

In addition to the messianic anticipation of a future that resembles a restored past, the revival of tekhelet expresses another sort of messianic sentiment directed toward the future. This is the excitement surrounding the growing synthesis of religion and science. Twentieth-century *Murex* advocates consider the *Murex* tekhelet a perfect example of a correspondence between religion and science, a pair often described in Hebrew as the synthesis of *Torah u-madda*. Rabbi Kenneth Brander of the Yeshiva University Center for the Jewish Future argues: "Tekhelet represents a living example of *Torah u-madda* in its fullest sense. Science, halacha, history, archeology, and the arts converge in this topic and work synergistically to highlight the promise of genuinely combining Torah, mesorah [received traditions] and modernity."¹⁶⁸ That sort of messianism can be understood as a unique manifestation of a well-known messianic paradigm inspired by the Hegelian paradigm of "progress," according to which the world is gradually advancing and improving.¹⁶⁹

Conclusion

An international conference, "100 Years of Tekhelet Research," took place in Jerusalem on December 30, 2013. From the materials announcing the conference:

This year marks the 100th anniversary of Rabbi Yitzchak Halevi Herzog's foundational doctorate, *The Dyeing of Purple in Ancient Israel*. This work inaugurated the era of modern research into the lost biblical blue dye and laid the foundations for all subsequent work in the field. To celebrate this event, Ptil Tekhelet, together with Yad Harav Herzog and Yeshiva University, will be hosting an international conference with leading personalities presenting their thoughts on the re-establishment of the beautiful mitzvah of Tekhelet. Hundreds of thousands of Jews around the world are wearing Tekhelet strings on their tzitzit for the first time in 1300 years, and that is certainly something to celebrate!¹⁷⁰

Among the participants in the 2013 conference were not only tekhelet activists but a variety of figures representing mainstream Israeli and Jewish institutions, including rabbis, archaeologists, academics from Israeli universities and the New York-based Yeshiva University, an Israeli Supreme Court justice, and one Israeli politician: Isaac Herzog, then chairman of the Israeli Labor Party and Rabbi Herzog's grandson.¹⁷¹ The conference was extensively publicized in the Israeli and Jewish American media.¹⁷² Tekhelet, which had previously been of interest only to Orthodox Jews, particularly Modern Orthodox Jews and religious Zionists, also began to elicit interest among non-Orthodox or secular Israeli Jews and even non-Jews.

All the aforementioned excitement arising from the renewal of tekhelet found expression in the centennial conference; "100 Years of Tekhelet Research" was much more than a centennial celebration of Herzog's dissertation. It was a celebration of the *Murex* tekhelet with all its ideological components, a synthesis between religion and modern science in the State of Israel—that is, a celebration of the national-religious ethos. Last but not least, this conference was a coronation ceremony for Ptil Tekhelet as the authentic successor of Herzog, a recognition endorsed by the various institutions that participated in the conference.

Tekhelet activists of the twentieth century—most of them Orthodox Jews—promote the opinion that the "authentic," "real," "genuine," or "true" tekhelet has finally been discovered. Moreover, they argue that this is a "scientific" tekhelet that exemplifies a perfect congruence between religion and science. This is a teleological narrative according to which Leiner's pioneering tekhelet led to Herzog's research, which, in turn, led to their

tekhelet; according to this narrative, each was a better version of tekhelet than the last.

The restoration of the tekhelet dye was presented in this chapter as part of a broader modern European trend of the restoration of ancient dyes, especially rare bluish dyes. In addition to the aforementioned Egyptian blue, which was restored in the nineteenth century, there were twentieth-century attempts to restore the Mesoamerican *Yax*, known as Maya blue, which was used by several other ancient cultures in addition to the Maya, as well as the eastern Asian Han blue, found in China.¹⁷³

Like tekhelet, these pigments initially played a ritual role, disappeared in the wake of external conquests, and were rediscovered in modern times as the result of scientific and anthropological curiosity. However, tekhelet differed from those attempts of restoration in its basic religious and national motivation. As shown in this chapter, the renewal of tekhelet raised emotions that went far beyond the scientific and cultural curiosities; these emotions touched on the image of the Jewish past, and the excitement surrounding this alleged rediscovery instilled all tekhelet projects with messianic sentiments directed toward the future. This optimistic spirit might also be associated with the preference by tekhelet activists for lighter bluish hues than those favored by common opinion in premodern Judaism.

This pursuit of a well-defined tekhelet dye is actually a religious pursuit—the search for a clear set of guidelines for the fulfillment of the religious law. As such, it depends both on religious beliefs and on subjective, interpretive decisions about the relevant rabbinic sources. Although scientific findings might seem objective, their adherence to Talmudic criteria are subject to interpretation. Accordingly, despite the claims of tekhelet advocates, there may not be a single definitive tekhelet in terms of the source of the dye and its characteristics.

Notwithstanding the enthusiasm among contemporary tekhelet activists regarding what they understand as “rediscovery,” there have also been debates among them. Above, I have introduced the debates over the hue and chemical composition of tekhelet, as well as debates over the identification of the *hillazon*. In particular, the Singer–Serman debate introduced a broader issue raised by the renewal of tekhelet: the relationship between science and religion, on which I will elaborate in Chapter 5. As bitter as they were, however, the advocates of the *Murex* snail and the *Sepia* squid still remained within the same camp: that of the supporters of tekhelet.

The whole idea of renewing tekhelet, however, was controversial. The preliminary issue of the legitimacy to renew tekhelet, regardless of the mollusk from which it was produced, was the subject of disagreement. In particular, the renewal of tekhelet on scientific grounds has raised objections with significant social and religious contexts. The renewal of the tekhelet dye became much more than a historical-scientific project; it posed a social and cultural challenge, as we will see in Chapter 5.

Chapter 5

Reactions to Modern Tekhelet Blue as a Sociocultural Challenge

In a short text titled “Our Torquemada,” the Yiddish and Hebrew writer Yitzhak Leibush Peretz (1852–1915) mocked the fierce controversies that erupted around the year 1890, after Leiner introduced his project to renew the tekhelet commandment.¹ The narrator (perhaps Peretz himself), who has just returned to Poland from a business trip to Berlin, is invited to the home of the local rabbi, who shows interest in the growing antisemitism at that time in Germany. The narrator is impressed by the seeming broad-mindedness of this rabbi, who is not interested, as are other Polish rabbis, in local Jewish matters only. Suddenly, some local Jews run into the room, telling the rabbi that a certain tailor named Aharon has just died, and his relatives intend to bury him with his *tsitsit* of tekhelet. The rabbi, furious, shouts that Aharon’s tekhelet cord must be torn out, or else he will be buried outside the cemetery’s fence, as are great transgressors. When the narrator sees that the rabbi laments the persecution of Jews in Germany while himself persecuting Jews in Poland who have tekhelet on their *tsitsit*, he runs from the rabbi’s home, shouting “Torquemada,” thereby comparing the rabbi to the fifteenth-century Spanish inquisitor of Jewish origin.

The tekhelet commandment, this text appears to say, is a tiny detail of Jewish religious life, insignificant when compared to other issues facing the Jewish people, such as the growing antisemitism of the time. The text reveals a surprising tension between what appeared to some as a marginal halakhic issue concerning change in attire and the fury directed at those who adopted that change. Peretz was reacting to what he perceived as the

Jewish narrow-mindedness and religious intolerance of his time. In any case, this tension alerts us to the possibility that the use of tekhelet in Jewish religious and social life raises issues far more controversial than one might expect from a simple thread.

Chapter 4 presented the various attempts at tekhelet renewal and discussed the debates among the innovators of tekhelet about the resulting tekhelet dyes. There were arguments about the identification of the *hillazon*, as well as about the characteristics of the dye produced: its chemical composition, steadfastness, and hue. However, there were arguments that went beyond internal debates about the dyes and countered the very idea of the renewal of tekhelet. Those arguments were leveled against both camps of tekhelet innovators.

This chapter aims to shed light on the broader cultural significance of the renewal of tekhelet by analyzing the major focal points of the controversy surrounding the process. I argue that although the controversies centered on the minutiae of a particular commandment, they actually exposed deeper fault lines in both nineteenth- and twentieth-century Orthodox Judaism. The tekhelet renewal projects introduced significant innovations in Jewish religious culture, thereby generating debates that extended beyond the disagreements on the specific dye presented in Chapter 4. As tekhelet broke with many traditional assumptions, it was almost inevitably rejected by a religious establishment that had long been wary of innovation.

The tekhelet controversies merit our attention not only because they touch on major issues in modern Judaism but because they feature voices that might otherwise go unheard. The narrative, presented in Chapter 4, that the “true,” “real,” or “authentic” tekhelet dye was finally discovered in the 1980s was so well received among Modern Orthodox and religious Zionist Jews that it marginalized disagreements on tekhelet and sidelined competing narratives.² These competing narratives include not only opposition to tekhelet in general but the objections of the Radzin Hasidim, who disagree with Ptil Tekhelet on various points. By presenting the debates underlying the renewal of tekhelet, this chapter makes room for the voices that undermine the dominant contemporary account.

The chapter is organized around the main arguments that were introduced against the renewal of tekhelet, and each of them highlights a fundamental issue: the significance of tradition; the relationship between science and religion; issues of authority and subversion; and additional aspects of

messianism. As a background for these discussions, I begin with a historical description of the emergence of the controversies within their social contexts.

Reception and Rejection of Tekhelet by Orthodox Jews

Opposition to the renewal of tekhelet began soon after Leiner, the rebbe of Radzin, published his first book on tekhelet, in 1887, in which he announced his intention to discover the dye and revive the commandment. This initiative provoked a number of responses that argued against the renewal of tekhelet. Additionally, Leiner reported critiques on various points. In fact, large portions of his second and third books are dedicated to responses to his critics. However, in contrast to other rabbinic debates from that period, no intensive legalistic discourse developed around tekhelet. To the best of my knowledge, only three polemical texts were published against Leiner's tekhelet. Two of them were rather short. A third, longer one, written by a Polish Hasid who emigrated to Jerusalem, was part of a broader campaign against one of the supporters of tekhelet.³ Like many other controversies, those tekhelet controversies did not end in victory for a particular side; they merely simmered down after Leiner's death in 1890 and faded away within a decade thereafter, with the Radzin Hasidim still wearing their tekhelet.

Leiner also attempted to garner support for his initiative from leading rabbinic figures of his time. Some of them adopted Leiner's tekhelet.⁴ Some of them explicitly rejected the antinomian overtones of Leiner's project, as we shall see in the following sections. Most, however, simply did not respond directly or decisively to Leiner's overtures.

Take, for example, the prominent Polish rabbi Yisrael Eliyahu Yehoshua Trunk of Kutno (1821–1893). Trunk ignored Leiner's requests for support until the latter prevailed upon a community rabbi in Radzyń to intervene for him. At that point, Rabbi Trunk sent a halakhic response, which was published by Leiner in his third book. This responsum was later included in a collection of Trunk's responsa, together with two additional responsa that he wrote about the renewal of tekhelet.⁵ The argumentation takes a similar course in all three responsa: Trunk begins with a brief history of the commandment of tekhelet, and then writes that there is a doubt as to whether the correct *hillazon* was found, as well as uncertainty about whether the commandment is eligible

at all for renewal. He also expresses his fear that the debates will generate social controversy. He concludes by leaving the matter undecided, but it seems that the fear of controversy inclined him to reject the project.

The relatively mild rabbinic opposition to tekhelet might be explained by its historical context; the period in question was characterized by furious debates on other issues considered more pressing among Eastern European Orthodox Jews. The notion that the renewal of tekhelet was rather insignificant was also reflected in the Hebrew press of the day.⁶ From a halakhic point of view, the use of colored fringes was not forbidden, as long as they were not formally declared “tekhelet.” Leiner himself made this case when trying to legitimize his innovation. Moreover, wearing a colored tassel was a personal decision that did not have any communal impact. In contrast, decisions about the legitimacy of citrons from Corfu, or about the permissibility of continuing to cultivate the soil of the Land of Israel (both major debates at the time), had a crucial impact on the future of the then-new agricultural communities in Palestine.

While the theoretical halakhic details of tekhelet did not raise much interest among prominent Eastern European rabbis, the social consequences did disturb them, which might have been why Trunk and other rabbis avoided the question altogether. This fear of social schism was not baseless because clashes did occur on the community level. Reports in the contemporaneous Jewish press in Eastern Europe indicated that quarrels broke out in several communities between supporters of tekhelet, who were Radzin Hasidim, and opponents of tekhelet, who were Hasidim of other factions, and possibly some non-Hasidim as well.⁷ Moreover, the tekhelet controversies were not limited to the Jewish communities in Poland. Leiner’s books and tassels reached Jerusalem, where a campaign against tekhelet was launched by Hillel Moshe Meshl Gelbstein, a Hasid from a rival faction.⁸

At first glance, these local quarrels about tekhelet may seem indistinguishable from innumerable community-level disputes among various groups of Hasidim. The tekhelet debates were quarrels about social dominance on the community level, not unlike disputes about nominations of rabbis, or the usage of particular versions of liturgy in synagogues where Hasidim from different groups gathered together. In Leiner’s case, the Hasidic context was particularly striking. Leiner was the descendant of a prominent yet controversial Hasidic leader. He was the grandson of Rabbi Mordecai Joseph Leiner of Izbica (1800–1854), a prominent disciple of the famous Hasidic leader Rabbi Menachem Mendel of Kotzk (1787–1859). The Izbica-Radzin dynasty was es-

tablished in 1839, when Rabbi Mordecai Joseph dramatically split from his master, left the court of Kotzk, and established a new court in Izbica. Mordecai Joseph became famous for his original, radical, and even controversial theology.⁹ His son and successor, Rabbi Jacob, moved to the Polish town of Radzyń, and after he died in 1878, his son Rabbi Gershon Henekh replaced him as leader of the Radzin Hasidim.¹⁰ Leiner's group had been considered an intra-Hasidic "other" ever since the split of Leiner's grandfather from the rebbe of Kotzk.

The intra-Hasidic dynamics that characterized the disagreements over tekhelet are only part of the picture. Additional aspects set these conflicts apart from other communal debates of the time. Compared with other local quarrels, tekhelet conflicts had a notable visual aspect. People could easily display their support of tekhelet by showing their tassels; even if they did not flaunt it in public, their support of tekhelet could easily be discovered by discerning tassels worn beneath clothing. As color is visible, tekhelet helped delineate the borders between the Radzin and other groups. It became part of the group identity of the Radzin Hasidim.

The display of tekhelet spurred strife because it emphasized divisions in the local community, not only between the various Hasidic groups but also between different classes. According to one report, some lower-class individuals adopted tekhelet in public (they received the tassels at no cost from Leiner's followers), which was interpreted by others as an expression of exaggerated piety, and thus generated discord with those of the higher classes.¹¹ The visibility of tekhelet played a notable role in the tekhelet debate, setting it apart from most other intra-Hasidic—as well as general Orthodox Jewish—debates of the nineteenth century. It did, however, resemble conflicts over the issue of *'eruv* (the demarcation of the region in which it is allowed to carry objects on Sabbath): it is easy to see someone's decision about the *'eruv* by observing whether he or she carries objects in the public sphere on Sabbath.¹²

Another line of argument against Leiner's tekhelet concerned the kabbalistic characteristics of this color. In his third book, *Eyn hatekhelet*, Leiner wrote that it had been brought to his attention that many opponents of tekhelet were frightening the laymen who were interested in wearing tekhelet by claiming that wearing tekhelet reduces the supernal influx and curtails financial success. Leiner then announced his intention to prove that not only does tekhelet neither harm nor hinder; it even brings success in worldly matters, especially in the realm of finances.¹³ This was followed by a lengthy

discussion of the practical benefits of wearing tsitsit with tekhelet. Another kabbalistic argument was that Leiner's tekhelet was the fake tekhelet termed *kala ilan*.¹⁴ Some seventeenth-century kabbalistic texts indicate that *kala ilan* is a symbol and manifestation of the evil forces.¹⁵ That association is based on the fact that the word *kala*/כלא has a numerical value (*gematria*) of 131, which is also the numerical value of *samael*/סמאל, one of the major manifestations of the evil forces. Following such sources, Leiner's tekhelet, too, was presented as a manifestation of the forces of evil.¹⁶

Kabbalistic arguments played a major role in the approach of at least one faction against tekhelet. The leaders of the Ḥabad group, perhaps the most widely known Hasidic group today, introduced kabbalistic symbolisms of blue and white to argue that tekhelet is connected to the past rather to the present. For example, they said that tekhelet represents fear of God, whereas white represents the love of God, and our times are times of love.¹⁷ It should be noted, however, that from a broad perspective, taking into account the variety of groups of Orthodox Jews, kabbalistic arguments played a marginal role, compared with the halakhic or social arguments.

After Leiner died in 1890, the debates gradually faded. The most notable controversy that persisted took place in Jerusalem between the aforementioned tekhelet opponent Hillel Moshe Meshl Gelbstein (1834–1908) and Rabbi Akiva Yosef Schlesinger (1838–1922), considered a pioneer of ultra-Orthodoxy.¹⁸ Gelbstein wrote polemical texts against the renewal of tekhelet while Leiner was still alive. After Leiner died, Gelbstein continued his campaign in Jerusalem against tekhelet but directed it toward Schlesinger in person. It seems that the background of this campaign was not tekhelet in particular, but rather a wider controversy around Schlesinger's activities in Jerusalem. In 1900, Schlesinger initiated a rabbinic debate about tekhelet in the Orthodox journal *Tel Talpiot*. In the opening text of the debate, he wrote that he had waited for the social furor surrounding him to die down before proposing a scholarly conversation. A more genteel, less heated, debate indeed ensued.¹⁹ About a decade after Leiner's death, the tekhelet controversies had faded.

From its debut in the nineteenth century, the Radzin tekhelet was produced and distributed by a private business run by the Leiner family of Hasidic leaders. The knowledge of its manufacture was lost during the Holocaust, but was restored in the 1950s when the Radzin Hasidim in Israel attempted to produce their tekhelet from a prewar recipe. The recipe and

the production process were not kept secret. On the contrary, seeking legitimization, the Radzin Hasidim demonstrated the dyeing process publicly, hoping that their dye would be proved as an acceptable tekhelet; for this reason, Herzog sent their dye for inspection.²⁰ Since then, the Radzin tekhelet has been produced by the Radzin Hasidim in Israel.

Leiner wrote around 1890 that 12,000 Jews had adopted it.²¹ He sought to convey an image of mass reception; but clearly, the majority of Orthodox Jews at that time did not adopt Leiner's tekhelet. As there was no other alternative for tekhelet available at the end of the nineteenth century, most Orthodox Jews continued to wear only white threads in their tsitsit. Leiner's tekhelet was worn mainly by his followers and some of the Bratslav Hasidim, although the exact number is unclear.²²

The reception of Leiner's tekhelet by several Bratslav Hasidim is noteworthy but not a coincidence. Both the Radzin and Bratslav groups were seen as outsiders in nineteenth-century Hasidism; Bratslav, in particular, was considered a "troublemaker" group in Russia. The Bratslav Hasidim did not nominate a successor to their founding father, Rabbi Naḥman of Bratslav (1772–1810), and refused to subject themselves to other living leaders.²³ Although the Radzin group had a leader, Gershon Henekh, who was the third in the dynasty, the Radzin Hasidim were also a small group that challenged the Hasidic world of the second half of the nineteenth century: the leader of the dynasty expressed antinomian ideas (although there is no evidence of the ideas being translated into practice) and was often involved in disputes with other Hasidic groups.²⁴ The fact that the new tekhelet dye was primarily adopted by these two groups, which were outside the mainstream establishment of nineteenth-century Hasidism, contributed to the image of tekhelet as a marginal innovation.

The reception of the twentieth-century *Murex* snail tekhelet was significantly different from that of the nineteenth-century squid tekhelet (for a tsitsit made of each of these dyes, see Figure 13 in the color plates). In contrast to the limited adoption of Leiner's tekhelet, the twentieth-century tekhelet produced by the Ptil Tekhelet association was more popular. Ptil Tekhelet established a small factory in Kfar Adumim (about ten kilometers east of Jerusalem), in which the *Murex* tekhelet is produced and sets of tsitsit are dyed and shipped to retailers and private customers. The factory includes a visitor center intended to introduce the wider public to tekhelet and its production.

There are no statistics about the actual adoption or avoidance of tekhelet. We do have, however, statements of support or opposition by influential Orthodox rabbis. To some extent, it is possible to draw conclusions from the influential leaders about their flocks. The *Murex* tekhelet was adopted by numerous religious Zionist Jews in Israel, especially those with a somewhat “spiritual” orientation. It was also accepted by some American Modern Orthodox Jews.²⁵ However, the majority of ultra-Orthodox Jews, the so-called Haredim, opposed the adoption of tekhelet. It was also rejected by religious Zionist Jews closer in their practice to ultra-Orthodox Judaism, popularly known as *Hardalim*.²⁶ The majority of Orthodox Jews did not adopt any tekhelet.

An example of the popularity of the narrative of Ptil Tekhelet about the *Murex* tekhelet can be found in the exhibition *Out of the Blue*, which was displayed at the Bible Lands Museum in Jerusalem between June 2018 and May 2019. The exhibition was dedicated to the color blue in the so-called Bible Lands.²⁷ However, the Hebrew title of the exhibition was *El ‘Omek ha-Tekhelet* (Into the depth of tekhelet), hinting that the focus of the exhibit was mollusk-based dyeing, especially tekhelet, rather than the color blue in general.²⁸ The exhibition, timed to mark the seventieth anniversary of the State of Israel (1948–2018), aimed to connect the ancient manifestations of the biblical tekhelet with the modern manifestation of the color blue on the flag of the State of Israel. The exhibition achieved this purpose by adopting the religious Zionist narrative of the *Murex* supporters, drawing a teleological narrative from the *Murex*-based dyes to Leiner, Herzog, and the Ptil Tekhelet association, finally reaching the flag of the State of Israel. Thus, the *Murex* tekhelet became the connecting thread between ancient Israel, Zionism, and the State of Israel. This narrative is hardly surprising because the Ptil Tekhelet foundation was a major supporter of this exhibition. Indeed, the outreach of Ptil Tekhelet goes beyond the relatively limited circles of Orthodox Jews.

Conflicts in the nineteenth century were primarily in the social domain and tended to take the form of physical clashes in communities rather than rabbinic debates; but in the twentieth century, it was the opposite: it seems that there were no physical disputes, but there has been abundant rabbinic debate on the issue. Notably, much of the reluctance to wear tekhelet today is rooted in simple adherence to one’s own group and does not necessarily stem from ideological disagreement. As Rabbi Yisroel Reisman, an ultra-

Orthodox American rabbi who opposes tekhelet, stated in a lecture, “in certain circles the blue tekhelet is very much like the black hat is in the yeshiva world—it has a meaning of its own. It identifies you with a certain *Toyredikeh velt* [world of Torah].”²⁹ This statement reflects the common perception that the *Murex* tekhelet is a “Zionist tekhelet,” the squid tekhelet belongs to certain Hasidic groups, and most ultra-Orthodox Jews avoid both tekhelet dyes. Tekhelet not only signifies social splits among Orthodox Jews but hints at deeper differences of opinion on a variety of matters. We will now examine some of these issues.

Between Contradicting Traditions

The tekhelet renewal projects were based primarily on the biblical texts that required Jews to use the tekhelet dye, as well as rabbinic texts that stipulated additional requirements, primarily the usage of the *hillazon*. There was far less evidence for the actual use of tekhelet in practice. It is clear that tekhelet could not have been used in the Temple after its destruction in 70 CE. We do not know, however, to what extent Jews ever used tekhelet in their tsitsit because the rabbis permitted going without it, as we saw in Chapter 1. This lack of clarity may underlie one of the arguments presented against the renewal of tekhelet in the nineteenth century. According to this argument, the reception or rejection of tekhelet should not be based on texts alone but rather on the existence of a tradition—*masoret*—of the continuous use or continuous avoidance of a thread of tekhelet. In this context, tradition is the manner in which a practice is actually performed, transferred from generation to generation; when traditional practice does not conform to the original directive, it is often given greater weight than the formal law.

One of the few rabbis to respond to Leiner’s request for rabbinical opinions on tekhelet was Rabbi Yosef Dov Halevi Soloveitchik of Brisk (1820–1892). Soloveitchik argued that if there was a continuous tradition that Jews knew how to prepare a particular dye from a particular mollusk but had for whatever reason refrained from doing so, it is possible to conclude that the relevant dye was not tekhelet. But if a candidate for the *hillazon* or the method for preparing a dye from its secretion had been forgotten, this could provide a justification for the approval of the new dye as tekhelet.³⁰ In other words,

Soloveitchik presented a criterion for the validity of any candidate of tekhelet. Although such a criterion allows for both the acceptance or the rejection of tekhelet, it seems that he tended to reject Leiner's new dye. In addition, according to one source, Soloveitchik expressed discomfort about the high price of Leiner's tsitsit.³¹

In his rejoinder, Leiner responded that the knowledge of preparing tekhelet from a mollusk living on the shores of the Land of Israel had indeed been forgotten for several reasons, such as restrictions on preparation or distance from the Land of Israel. Hence, there was not a tradition in which the use of a known dye was consciously avoided. Although the *Sepia officinalis* was a well-known species, the knowledge of how to prepare a blue dye from it was novel; according to Leiner, this is the proof that it is a legitimate tekhelet.³²

Three generations later, the great-grandson of the Rabbi of Brisk, the famous Rabbi Yosef Dov Soloveitchik of Boston (1903–1993), known for his general rejection of scientific argument in shaping halakhic decisions, was understood to have argued, like his great-grandfather, that without a tradition of using a specific dye as tekhelet since ancient times, this dye should not be accepted as tekhelet.³³ In fact, Soloveitchik and some of his disciples refrained from wearing tekhelet—any tekhelet. However, one of Soloveitchik's main disciples, Rabbi Hershel Schachter, was not satisfied with that interpretation of Soloveitchik's argument, which seemed to him to contradict the latter's general approach.³⁴

The argument of tradition was not only used against tekhelet in general but was also employed in the debates between the supporters of the squid and the snail.³⁵ Israel Ziderman, one of the pioneers of tekhelet mentioned in Chapter 4, used another variation of the tradition argument to show that it is the *Murex trunculus* and not the *Sepia officinalis* that adheres to the argument of Soloveitchik the Elder.³⁶ Ziderman argued that the *Sepia officinalis* does not comply with Soloveitchik's conditions because it was always known as a source of colorants, whereas the *Murex trunculus* does comply. Both archaeological and historical evidence, he claimed, support the production of dye from the *Murex* in antiquity (not necessarily by Jews); its use was forgotten by both Jews and non-Jews, and rediscovered only by nineteenth-century scientists. Hence, the advantage of the *Murex trunculus* was that it had been rediscovered. Accordingly, there could not have been an active tradition of avoidance but rather a tradition of use that had been forgotten, thereby paving the way for the renewal of tekhelet.

We thus have two competing interpretations of the opinion of Soloveitchik the Elder. One interpretation was used to disqualify tekhelet, whereas the second interpretation was used to justify its renewal.

Between Science and Religion

The relationship between science and religion has been another central topic in the Orthodox discourse about the renewal of tekhelet. This is not surprising because, as we have seen in Chapter 4, the modern tekhelet dyes were based on contemporary scientific discoveries in the fields of biology, chemistry, and archaeology.

In the case of the nineteenth-century tekhelet, the appreciation of science was only implicit. Leiner based his claim partly on scientific innovations but did not place them at the center of his argument, which was primarily halakhic in nature. He did not afford particular importance to the congruence of science and religion.

Supporters of the twentieth-century tekhelet, however, proudly claimed that the renewal of their tekhelet was backed by science, and this contributed to their conviction that it was the “authentic” dye. The introduction of the *Murex* tekhelet was based on the work of natural scientists such as Spanier and Elsner and backed by archaeological and textual evidence introduced by Herzog, as well as by later scholars, on the use of the *Murex* for dyeing in ancient times. Herzog himself was considered by later tekhelet advocates to be the perfect manifestation of the ideal Jewish scholar, whose research combined rabbinic erudition with extensive knowledge in the fields of biology, chemistry, textiles, history, philology, and linguistics. This explains the habitual use of the term “science of Tekhelet” among tekhelet advocates.³⁷

Opinions about the relationship between religion and science have traditionally been classified as belonging to a range of approaches, usually including conflict, independence, dialogue, or integration.³⁸ Scholars have provided various definitions for each of the models, while others tend to avoid presenting these categories as well-defined, separate models, but rather prefer to see them as part of a wider range of options.³⁹ These approaches can also be found in Judaism.⁴⁰ The integration category is a major characteristic of Modern Orthodoxy, and the relationship between religion and science is part of a broader encounter between religion and nonreligious culture, often termed in Modern Orthodoxy as *Torah u-Madda*.⁴¹

It should be remembered that tekhelet is first and foremost a religious ritual that is mandatory, whether or not science is taken into consideration. The central question is not the theoretical issue about whether science is compatible with religion; rather, it is the extent to which scientific considerations can and ought to be employed in the domain of religious ritual. Hence, the various opinions that will be discussed below can be placed on an axis, with one pole representing those who place greater weight on science in religious-halakhic matters, and the other representing those who place greater weight on religious texts and traditions. Additionally, it is important to note that approaches to the relationship between science and religion are generally not universal, but rather depend on the specific context of the debate. For example, certain scientific disciplines (such as archaeology and the humanities) may be perceived by Orthodox viewpoints to conflict with religion, whereas other domains of science (such as the natural and applied sciences) are generally seen as more compatible.

For *Murex* advocates, tekhelet is the quintessential example of the integration of religion and science. In this view, modern science rediscovered the ancient tekhelet and, in so doing, merely reaffirmed ancient techniques. Moreover, for tekhelet advocates, the comprehensive research of tekhelet seems to serve as a model for the Modern Orthodox harmonistic ethos regarding the ways that science can serve religion. In this context, it is noteworthy that the most prominent *Murex* advocates are Modern Orthodox Jews who are natural scientists or have graduate degrees in the natural sciences. For example, Baruch Sterman, one of the leaders of Ptil Tekhelet, holds a Ph.D. in physics, as mentioned above, and has authored several articles on various aspects of the relationship between science and religion.

Among the supporters of tekhelet, some voices are oriented even further toward the scientific pole. Backed by a halakhic responsum, the aforementioned tekhelet pioneer Israel Ziderman expressly claimed that archaeological and scientific evidence ought to be accorded preeminence or supremacy in the search for authentic tekhelet.⁴² When looking for the *hillazon*, Ziderman maintained, the first step must be to locate a marine mollusk from which it is possible to produce a dye that meets the requirements of hue and steadfastness. Only then should this mollusk be evaluated according to rabbinic texts. That is, scientific criteria have precedence over rabbinic texts. Moreover, Ziderman presented a narrow set of halakhic criteria comprising only two components: first, the basic statement of the Tosefta that a kosher tekhelet is what is produced from a marine mollusk, whatever

that may be; and second, the midrashic historical observation that tekhelet was concealed. Ziderman rejects halakhic criteria even further when he argues that all the rabbis who wrote about tekhelet after it was concealed (including authoritative figures such as Maimonides) never personally saw tekhelet or a *hillazon*. Therefore, their arguments ought to be understood as interpretations of the Talmudic statements rather than as authoritative. It seems that Ziderman represents the extreme “scientific” approach among *Murex* advocates. By rejecting most of the Talmudic criteria for the identification of the *hillazon*, this approach is even more radical than that of Ptil Tekhelet, which narrows the criteria but still gives the Talmud equal footing.

This scientific approach has been the target of various critiques, which argue that the Jewish religion should be given priority over scientific findings. Within this opposition, it is possible to distinguish between two approaches. One focuses on scientific thought as a doubtful domain of knowledge, and therefore rejects the use of scientific arguments in determining halakhah. The second approach does not focus on scientific thought per se, but rather on the Talmud and its authority, requiring absolute conformity to the Talmudic statements. According to the first approach, science is inherently problematic. By contrast, according to the second approach, science is not problematic as long as it is subjected to halakhic reasoning, or as long as it does not contradict the Talmud.

An example of the approach that denies science in principle is the opposition to the renewal of tekhelet by Rabbi Yosef Shalom Eliashiv (1910–2012), widely considered a prominent halakhic authority for non-Hasidic ultra-Orthodox Jews (the so-called Litvaks). In 1998, Eliashiv wrote that scientific theories were halakhically problematic because they were fundamentally refutable.⁴³ According to this argument, if scholars opposed Leiner’s theory regarding the *Sepia officinalis* and pointed to a different *hillazon* (such as Herzog’s *Janthina*), which, in turn, was dismissed by later scientists who introduced a third *hillazon* (the *Murex*), then future scientists could undermine the current theory as well. Moreover, opponents of the renewal of tekhelet on purely scientific grounds argued against the use of archaeology in determining halakhah. According to this argument, archaeology is the most problematic of all the fields of science because of its highly speculative nature, basing far-fetched hypotheses on scarce evidence.⁴⁴ Hence, science cannot meet the religious demand for the absolute truth that should characterize halakhah.

Another approach that rejects science in principle is that of the religious Zionist rabbi Shlomo Aviner (b. 1943), who similarly argued that science should not be brought to bear on religious matters, since every scientific theory is prone to refutation. He asserted that the renewal of tekhelet must be based on tradition: the past usage of a specific *hillazon* followed by its concealment. According to Aviner, halakhic innovation should be based on stable foundations. Because tradition is not scientific, it is not refutable and thus not subject to doubt.⁴⁵

The argument against science is directed toward the supporters of the *Murex*, but it can actually be deployed against Leiner's *hillazon* as well, because Leiner, too, based his proposal on scientific observation—specifically, empirical observation of the *Sepia officinalis* squid at the Naples aquarium. Indeed, this argument opposes any attempt to renew the commandment of tekhelet based on the observation of animals that generate colorants.

An example of the second approach, the approach that demands complete conformity to Talmudic references, can be found in the remarks of the aforementioned Rabbi Yisroel Reisman, a dean (*rosh yeshiva*) of Yeshiva Torah Vodaas in Brooklyn, New York. In a public talk (*shi'ur*) that he gave on June 18, 2011, he explained his objections to the *Murex* tekhelet.⁴⁶ At the core of his argument was the basic postulate that for legal issues such as the tekhelet of tsitsit, the Babylonian Talmud should be the primary criterion, rather than other rabbinic works or scientific evidence. The *Murex* snail cannot be identified with the *hillazon* because it does not meet most of the Talmudic references to the *hillazon*. For example, although the *Murex* is compatible with a statement that the *hillazon* is hunted between Tyre and Haifa,⁴⁷ it does not meet other Talmudic criteria that characterize the *hillazon* as a fast creature that lives in deep water, alluding to an animal that is not a snail but more likely a fish. But Reisman goes further, claiming that a candidate for the *hillazon* must meet *all* Talmudic criteria—and if it does not, it must be rejected. Even within the camp of those who give precedence to rabbinic sources, he gives exclusive status to the Babylonian Talmud and demands that all the Talmudic references to the *hillazon* be met. He claims that no Talmudic reference can be neglected or replaced by a midrashic one, in contrast to supporters of tekhelet, who sometimes prefer midrashic sources over Talmudic. Accordingly, Reisman's argument not only disqualifies the *Murex* but also the *Sepia officinalis* of the Radzin Hasidim—and probably Herzog's proposal, as well. Reisman's approach represents an extreme adherence to the Talmudic texts describing the *hillazon*. However, that sort of

approach does not explicitly object to science. Theoretically, it is still possible that one day, a perfect candidate will be found that fits all the Talmudic references.

Hence, we can see that on the science–religion axis, supporters of tekhelet tended to lean toward scientific proofs, while their opponents were largely oriented more toward religious texts. However, the opinions were not dichotomous. There were intermediate positions that combined science and religion in a more complex way. Although *Murex* advocates sometimes abandoned Talmudic requirements when they conflicted with scientific evidence, they did insist on religious considerations and even used them polemically to reject other opinions. For example, members of Ptil Tekhelet objected to the *Sepia officinalis* because it did not meet certain Talmudic criteria, such as that the *hillazon* should live on the eastern coast of the Mediterranean.

Such a combination of scientific and religious considerations can also be seen in the arguments of the Radzin Hasidim. From their perspective, positioning either tradition or Talmud as the primary criterion for identifying the *hillazon* does not reject science per se; rather, it downgrades science to a secondary level. Specifically, those who give priority to the Talmud would not reject science, as long as the Talmudic criteria are met. A scientific argument of that type was expressed by the aforementioned Radzin Hasid and professor of medicine, Mendel Singer, who claimed that the specific archaeological evidence promoted by *Murex* advocates was not reliable. He argued that the scholarly literature about dyeing in antiquity cited by *Murex* advocates was outdated. According to updated scholarship, he wrote, there was no archaeological evidence that the *Murex* had been used for blue dye. Although this specific criticism collapsed as soon as archaeologists found evidence of its use in the Judean desert a few years later,⁴⁸ it demonstrated that scientific argument was used not only by *Murex* advocates but also by supporters of the Radzin tekhelet. Additionally, the Radzin Hasidim, like the members of Ptil Tekhelet, are flexible in their approach, open to abandoning some of the Talmudic sources if they generate obstacles to the *Sepia officinalis*, their candidate for the *hillazon*.

The debates between *Murex* advocates and the Radzin group allude to a different historical objective in each tekhelet project: although the Radzin Hasidim wear their tekhelet on their tsitsit, they do not claim that their tekhelet is the original one, but rather a tekhelet that strictly adheres to a wide array of rabbinic criteria. In contrast, *Murex* advocates aim for more than just a halakhically acceptable dye; their vision is to restore the ancient

billazon. To put it succinctly: Radziners aim to wear a “kosher” tekhelet, whereas *Murex* supporters want to identify and wear the historical tekhelet. The disagreement between the two camps runs even deeper. On a more philosophical level, these two approaches reflect two different criteria for truth. Radziners hold a consistency theory of truth, according to which tekhelet should merely be consistent with a set of formal Talmudic criteria. *Murex* supporters, however, implicitly and perhaps unconsciously advocate a correspondence theory of truth, which maintains that tekhelet should correspond to “objective” (archaeological) reality.

To be sure, science as such is not rejected by Orthodox Jews. In addition to the basically positive attitude toward science expressed in the Modern Orthodox worldview, applied sciences such as medicine and engineering are accepted in the daily lives of all Jews and are often used by rabbis in their halakhic decisions. However, science in the fields of archaeology and history, areas on which the research concerning the *Murex* tekhelet was heavily based, are perceived as the most threatening. These areas of knowledge seem speculative, unreliable, and open to personal interpretation. They are also likely to contradict sacred history and raise heretical doubt in the minds of religious people, even potentially leading to secularism.

The debate between religion and science surrounding the renewal of tekhelet projects was far from a simplistic, dichotomous conflict. Not all opponents of tekhelet objected to science, and not all advocates of tekhelet supported science without hesitation. Additionally, there were two different arguments in support of religion: adherence to tradition; and adherence to text—namely, the rabbinic texts describing the *billazon* and the dye. There were also two different arguments objecting to science: that science is inherently refutable; and that the existing scientific findings do not sufficiently conform to rabbinic texts.

Authority and Subversion, Piousness and Pretentiousness

Some of tekhelet’s opponents considered it a color that conveyed pretentiousness and subversion. The notion of subversion appears as early as the ancient rabbinic narrative of the biblical Korah and his prayer shawl made entirely of tekhelet. This narrative, appearing first in the Palestinian Talmud and later included in medieval midrashim such as *Numbers Rabba*,⁴⁹ seems to draw on

the fact that the biblical story of Korah (Numbers 16) comes right after the commandment to wear *tsitsit* (Numbers 15). According to that narrative, Korah and his followers, 250 Israelites who challenged the leadership of Moses and his family, asked Moses whether a prayer shawl made entirely of tekhelet should be exempt from having a fringe of tekhelet. According to the Talmudic reworking of the biblical narrative, Korah not only asked a theoretical question but actually prepared a prayer shawl colored entirely with tekhelet. But Moses responded in the negative, insisting that the garment must nonetheless have a tekhelet fringe.⁵⁰

Korah's question was subversive because his argument could justify the abolition of religious laws.⁵¹ Some modern rabbis concluded from Moses's rejection of Korah's argument that the point of the law of *tsitsit* is to establish boundaries and distinctions.⁵² Accordingly, Korah's fault was that his excessive pietism led him to blur existing norms. Korah's prayer shawl made entirely of tekhelet (*tallit she-kula tekhelet*) may have intended to parody the law by pushing it to the extreme, but it could also have symbolized an anti-nomian sense of pride. According to the latter interpretation, tekhelet became an emblem of arrogance and subversiveness. Wearing a prayer shawl made entirely of the relatively marginal tekhelet would undermine the central whiteness of the garment, thereby disturbing the normative order.

We also find tekhelet as a motif of pretension in eighteenth-century Eastern European Jewish polemic texts describing insolent Jewish groups with various unusual customs. The wearing of a thread of tekhelet is one of the customs mentioned in these texts: "There is one of them who is empty from any knowledge . . . and his actions are strange. He puts white clothing on himself, and his hem is with a thread of tekhelet, like On ben Pelet."⁵³ There is no evidence for the use of tekhelet among Eastern European Jews in the eighteenth century; I tend to see the relevant phrases as metaphors, indirect references to the Korah affair. In this instance, as in others, tekhelet clearly played a literary role as a symbol of subversiveness.

I noted above that in the nineteenth century, lower-class Jews adopted Leiner's tekhelet in public; they were perceived as pretending to be pious, thereby generating quarrels with members of higher classes.⁵⁴ In this case, tekhelet signified a class-based subversion. The subversive undertone of tekhelet was more explicit in the context of the relationship between Jews and non-Jewish authorities. Notably, non-Jews, particularly non-Jewish authorities, were aware of these tekhelet disputes. Indeed, of all the Jewish internal disputes of the day, tekhelet was most visible; in order to determine the side to which a Jew

belonged, it was sufficient to ask him to expose his tassels. A newspaper report on a dispute that took place in 1888 in the Polish town of Rejowiec says that the local rabbi, who was a Radzin Hasid, was required to appear before the regional administration in Chełm. The Polish official revealed the rabbi's tassels, asked him why he was wearing tassels different from those of the other Jews of Chełm, and warned him not to generate further strife.⁵⁵ However, the disputes continued and did not stop even after that official visited Rejowiec. According to the correspondent, the rabbi was finally removed from office after one of the rabbi's opponents told the official that the *tsaddik* of Radzin aspired to rebuild the Jewish Temple and become a king. Although it is very unlikely that Leiner had such an aspiration, it is possible that his opponent made use of the associations between tekhelet and the Temple in the campaign against him.⁵⁶ The suspicion of political subversion implied by messianic aspiration was something that the Polish authorities would not tolerate.

The tekhelet renewal projects have an inherently subversive aspect that goes deeper than the aforementioned social tensions or the development of messianic hope under the vulnerable social reality of life in a diaspora.⁵⁷ The aspiration to renew a forgotten ritual in a ritual system that rejects innovations is somewhat antinomian and likely to raise opposition. This is not surprising, with regard to the Hasidim of Radzin, because this group is known for its ethos of slight or soft antinomianism.⁵⁸

One expression of the inherent antinomianism of the tekhelet renewal projects was that in the nineteenth and twentieth centuries, the proponents of tekhelet struggled to get formal approbations for the new tekhelet dyes from the leading rabbinic authorities of their day. To be sure, many of these rabbis did not reject tekhelet outright. In addition, as noted above, several rabbis avoided expressing definite opinions because they were hesitant to come to a decision or afraid to enter into controversies. However, the fact that very few leading rabbis affirmatively accepted tekhelet is striking.

In the nineteenth century, the argument about the lack of rabbinic support was introduced against the Radzin tekhelet; but in the twentieth century, this argument was offered by the Radzin Hasidim against *Murex* advocates to claim that no leading rabbinic authority supported the *Murex*. At this point, the *Sepia officinalis* had already been supported by rabbis of the nineteenth century: Leiner himself, who was considered an authority in the eyes of the Radzin group, as well as other rabbis who became prominent over time.⁵⁹

An example of this argument in the twentieth century can be found in one of the notable opponents to tekhelet within religious Zionist circles: the aforementioned Rabbi Shlomo Aviner, who corresponded with Rabbi Shmuel Ariel (b. 1967), a supporter of tekhelet. The two rabbis debated the role of science in halakhic decisions. While Aviner objected to affording science a role, Ariel argued that doubt lurks under almost every halakhic issue, yet decisors (*poskim*) do not avoid decisions.⁶⁰ Their debate regarding the sources of authority for tekhelet renewal are of particular interest here.

Aviner argued that the approval of contemporary leading rabbis should be a prerequisite for any renewal of tekhelet, and these acknowledged leaders (*gedolei ha-dor*) have refrained from expressing their opinions. Aviner also argued that the personal adoption of tekhelet by laity or by young people constituted an act of pietistic pretense and even rudeness vis-à-vis these leading rabbis. In Ariel's response to Aviner, he complained that the leading rabbis were overly hesitant. Moreover, in the specific case of tekhelet, which requires knowledge from various fields of science, Orthodox tekhelet scholars should be considered more authoritative than rabbis who are unacquainted with the subject, prominent as they may be. That sort of argument, highlighting the authority of science and its priority over the authority of the rabbis, undermines an allegedly fundamental Orthodox premise. Ariel also hinted that by saying that no leading rabbis supported tekhelet, Aviner did not pay proper respect to leading religious Zionist rabbis who did support tekhelet, such as Rabbi Dov Lior. The debate did not remain calm. Indeed, it became emotionally charged when Aviner responded furiously to Ariel's claim about sources of authority on the question of tekhelet, a claim that seemed subversive in Aviner's eyes:

Who are we to preach to the leading rabbis to hasten their decision? What will happen if we wait a few more years or even generations?! Is the Israelite community burning in fire because there is no tekhelet?! Is it such an urgent problem?! Open your eyes and you will see so many young people cry for the honor of the tekhelet cord. They put a tekhelet cord in their *tsitsit* in order not to omit a single law of the Torah. However, other laws are not so precious for them, and they repulsively transgress in slander, trivia, getting close to women, adopting rotten behavior and other sicknesses, God forbid. And this is a sign that the tekhelet cord is for them nothing but arrogance and haughtiness. They also do not avoid criticizing the

great rabbis of our generation. But scholars and righteous men like you know for sure that one needs patience and humility for these great rabbis of our generation, and to humbly accept their restraint. And this is incomparably more important than the tekhelet cord.⁶¹

Aviner's argument that there are much more urgent issues than the renewal of the tekhelet commandment echoes similar arguments made in the nineteenth century.⁶² The tension between Aviner and the supporters of tekhelet seems to have had an intergenerational dimension: Ariel, who is almost twenty-five years younger than Aviner, saw the hesitancy or inaction of the sages as excessive conservatism. In turn, Aviner saw that sort of criticism as dangerous subversion by an arrogant younger generation that lacked respect for its sages.

The haughty independence denounced by Aviner can also be understood as an expression of what the Israeli sociologist Shlomo Fischer termed "the Romantic expressivist nationalistic religious culture" of contemporary religious Zionism in Israel.⁶³ Although Fischer did not refer to tekhelet, his observations can be applied here. From that perspective, wearing a tekhelet cord in public is an individualistic act that expresses a pietistic return to ancient roots and emphasizes the radical aspect of tekhelet rather than its modern facets.

The tension exposed by the Aviner–Ariel exchange represents a deeper split in contemporary Israeli religious Zionism—between the "Ḥardalim," who are closer on several issues to ultra-Orthodox Jews, and other religious Zionists. The Ḥardalim are often characterized as relatively conservative in halakhic matters. Aviner represents the Ḥardalim, and Ariel the non-Ḥardalim. It is interesting to note that Aviner was not entirely consistent in his position about tekhelet. While he did not count specific rabbis such as Dov Lior as *gedolei ha-dor* in the context of tekhelet, he did consider him as such in the context of another debate that centered on the method of teaching the Bible in religious Zionist yeshivot.⁶⁴

Another example of the tension between the conservatism represented by Aviner and more activist religious Zionist initiatives was Aviner's opposition to attempts by Orthodox Jews to enter the Temple Mount. On this matter, he also stated that the majority of the leading rabbis did not support the activist approach.⁶⁵ The debate about attitudes toward the Temple and the Temple Mount is a major one within contemporary Israeli religious cul-

ture, and extends well beyond the question of whether to ascend the Mount. Tekhelet played a role in this debate, to which we will now turn.

Messianism and the Temple: Hastening or Hindering Redemption

The renewal of tekhelet in the nineteenth and twentieth centuries was accompanied by messianic hopes of various sorts. In Chapter 4, I mentioned messianic sentiments associated with the renewal of the ancient Jewish past; the personal messianism of fulfillment of the commandments following the ability to perform a hitherto-missing commandment; and the utopian messianism of the integration of science and religion. In this section, I will elaborate on another aspect of tekhelet and messianism, an aspect connected to the renewal of the past. This is the messianism associated with the renewal of the Temple liturgy in Jerusalem. According to supporters of tekhelet, the renewal of tekhelet removed one more obstacle on the path toward renewing the Temple, thereby advancing the establishment of a religious Jewish state and the ultimate redemption of the Jewish people.

The connection between tekhelet and the Temple is biblical, of course. The Bible presented the tekhelet dye as a requirement for the cloths that covered the artifacts in the Tabernacle and the Temple, as well as for the vestments of the priests.⁶⁶ But the seminal source that connects tekhelet to the Temple in the context of messianic redemption, a source that has been quoted extensively since the nineteenth century, is a short kabbalistic text on the *tsitsit* included in *Pri etz ḥaim* by the kabbalist Ḥaim Vital (1543–1620), a book containing kabbalistic material from the school of Vital's master Isaac Luria.⁶⁷ According to Vital, in the wake of the destruction of the Temple, the Israelites lack the spiritual strength to put tekhelet on their *tsitsit* because they do not have the spiritual strength to grasp *sefirah ḥokhmah*, which is associated with tekhelet. The absence of tekhelet has a spiritual significance, and it is congruent with a historical reality in which the Temple has been destroyed. Vital did not express any opinion supporting or opposing tekhelet; the question was not relevant in his time. However, nineteenth- and twentieth-century rabbis referred to this text during the tekhelet renewal projects, interpreting it as an argument against tekhelet, according to which it is undesirable, and even forbidden, to restore tekhelet as long as the Temple

has not been rebuilt, perhaps because the Jewish people do not have the necessary spiritual power.

Another source that associates tekhelet with the Temple, cited several times as an argument against the renewal of tekhelet, is part of a homily by the Hasidic leader Rabbi Israel Hofstein of Kozienice (1737–1814):

Tekhelet, too, indicates the control of God, blessed be he, over those who act against his will. And [God] wanders everywhere, and as soon as a man notices that, then fear will hold him and his heart will be elevated in awakening. Hence, one should put a thread of tekhelet on his tsitsit. This is why, in the days of the Temple, when the Israelites were in grandeur and peace, they needed tekhelet to be reminded of God's awe. But now they do not need tekhelet because even without tekhelet, the hearts of the Israelites break due to the hard times they experience. Moreover, a white thread is required to remind [us] that nevertheless God's grace is upon us and he will never leave us.⁶⁸

As we have seen in previous chapters, tekhelet represents divine judgment, as well as the fear of God. According to Hofstein, in the era of the Temple, a time of peace and divine grace, tekhelet played the role of judgment, the divine quality that is the opposite of grace. But in the reality of exile, when the Temple remains destroyed and Jews suffer, they already possess the awe of God; therefore, they do not need tekhelet to remind them of the divine presence. Both Vital and Hofstein characterized tekhelet as a spiritual entity that is inaccessible in times of exile. But whereas Vital emphasized the association of tekhelet with *sefirah hokhmah*, the second topmost *sefirah*, Hofstein highlighted the association between tekhelet and the *sefirah* of judgment, which is lower. Yet the arguments were sometimes presented side by side in order to reinforce the objection to tekhelet.⁶⁹

The renewal of the Temple liturgy and the renewal of tekhelet are two modern projects of renewal that emerged in nineteenth-century Orthodox Judaism, continue to the present, and intersect from time to time. Arguments regarding tekhelet have appeared in the debates about the renewal of the Temple liturgy, and arguments regarding the Temple have been brought to bear in debates about the renewal of tekhelet.

Renewal of the Temple was the subject of debate well before the renewal of tekhelet. The discourse on the liturgy of the Temple has been one of many

issues discussed routinely in halakhic literature throughout the years. Tekhelet played a role in this discourse, along with other dyes that were required: *argaman* (purple) and *tola'at shani* (scarlet). The requirement of the dyes was only one among many requirements for the Temple liturgy, such as the red heifer, whose ashes are required for purification.

The halakhic discourse about the Temple liturgy remained theoretical until the mid-nineteenth century, when various rabbis began to discuss the possibility of renewing the liturgy of the Temple. It is possible that in the background of that messianic discourse was the messianic awakening among Jews toward the year 1840, together with the emergence of Jewish nationalism. In particular, during 1831–1841, Palestine, the Land of Israel, was under the relatively tolerant rule of Muhammad Ali; this, too, may have ignited messianic hopes.⁷⁰

Tekhelet was one of the subjects to arise in this nineteenth-century discussion of the Temple. No one disputed the idea that tekhelet was indeed required for renewing the liturgy of the Temple, but there was a debate about the necessity of a *hillazon*. While the *hillazon* was considered mandatory for the tekhelet of tsitsit, there was no general agreement as to whether it was also mandatory for the liturgy of the Temple. For example, the German rabbi Israel Lipschitz (1782–1860),⁷¹ in his commentary to the Mishnah, *Tiferet israel* (1843), discussed the requirements for the priestly garments in the Temple, and concluded that on the matter of tekhelet, the only requirement was a steadfast *himmelblau* (sky blue) dye; it did not have to be produced from a *hillazon*.⁷²

In an attempt to remove or bypass any factor that would inhibit the practical renewal of the Temple, individuals or groups that wanted to reinstate Temple worship adopted the argument that *hillazon* was unnecessary for this worship. Tzvi Hirsch Kalisher (1795–1864), a proto-Zionist rabbi who also had practical aspirations to renew Temple liturgy, expressed a similar stance in letters that he wrote in the 1830s that were eventually included in his book *Derishat tsion*, first published in 1862.⁷³ Kalisher corresponded on this matter with his own rabbi, Akiva Eiger, but Eiger disagreed with Kalisher. He thought that *hillazon* was required not only for tsitsit but also for objects used in the Temple.

Support for the renewal of certain components of Temple liturgy does not mean automatic support for tekhelet. Consider two aforementioned rivals with regard to the renewal of tekhelet: Akiva Yosef Schlesinger was an enthusiastic supporter of tekhelet, whereas Hillel Moshe Meshl Gelbstein

was a fierce opponent who ran a campaign against Schlesinger in Jerusalem in the 1890s.⁷⁴ However, both rabbis supported the renewal of various parts of the Temple liturgy: Schlesinger attempted to renew the Passover sacrifice, as well as the blowing of the ram's horn (shofar) on the New Year holiday when it occurs on the Sabbath; Gelbstein wanted to renew the ancient practice of guarding the temple (*shemirat ha-mikdash*). While it is unclear how Schlesinger perceived the role of tekhelet in the process of renewing the Temple liturgy, we do know that Gelbstein explicitly rejected it, claiming that the Temple should be rebuilt only after the messiah has come, but not before. That is, tekhelet alone cannot be a driving force for the rebuilding of the Temple.

Just as tekhelet played a role in the Temple discourse, the destroyed Temple played a role in the nineteenth-century discourse on tekhelet. When Leiner began his tekhelet project, his focus was the tsitsit rather than the Temple; unlike Kalisher, he did not have national aspirations. However, once he declared that he had found the *hillazon*, he insisted that it must be put to use both in the tsitsit and in the Temple.⁷⁵ Moreover, because he thought that he had found the *hillazon*, he believed that he had removed one of the obstacles to the renewal of the Temple liturgy and supported the renewal of that liturgy prior to the arrival of the messiah.⁷⁶ In other words, while he was not an activist like Kalisher, he indirectly supported the nationalist approach.

Opponents to Leiner's tekhelet project introduced the aforementioned text by Vital as a counterargument that tekhelet should not be restored as long as the Temple liturgy has not been renewed. Even those who hesitated to issue a clear decision, such as the aforementioned Rabbi Yisrael Yehoshua Trunk of Kutno, included this argument in their halakhic responsa on the subject of tekhelet.⁷⁷ Leiner acknowledged this argument but objected to Trunk's interpretation of Vital as rejecting the renewal of tekhelet.⁷⁸

The Bratslav Hasidim who supported Leiner's tekhelet presented an original messianic tradition. According to that tradition, in a mysterious book called *Maḥane dan*, allegedly penned by the seventeenth-century Polish kabbalist Shimshon of Ostropol, a prophecy forecasts the discovery of tekhelet as part of a chain of eschatological events. Specifically, according to that tradition, after the messianic year of 1840, a man inspired by the light of the kabbalistic emanation *ḥokhmah* will discover tekhelet and use it to adorn the emanation *malkhut*. The problem with this messianic tradition is that the book *Maḥane dan* is unavailable. It was either lost or did not exist at all.⁷⁹ Still, the recep-

tion of this tradition by Bratslav Hasidim proves that they understood the renewal of tekhelet as a messianic event taking place within the period of redemption. According to this understanding, the historical reality of exile referred to by Vital's source ended in 1840, so that this source cannot be used as an argument against the renewal of tekhelet since the 1880s.

The role of tekhelet in relation to the Temple surfaced again in the twentieth century. Herzog and Rabbi Yechiel Michel Tukachinsky (1872–1955) corresponded between 1949 and 1953 about specific requirements of tekhelet for the Temple.⁸⁰ Tukachinsky, a scholar of halakhah, wrote a book on the Jewish Temple, and discussed the legal requirements for renewing the Temple liturgy.⁸¹ He presented numerous obstacles to the renewal of the Temple liturgy. Some of these revolved around the unavailability of tekhelet. The most difficult issue, according to Tukachinsky, was not the Lurianic tradition about the absence of tekhelet after the destruction of the Temple, but rather the lack of knowledge about the exact hue of tekhelet. Herzog, enthusiastic about tekhelet, presented his aforementioned opinion that the color of tekhelet could be determined by its similarity to indigo.⁸² Ultimately, however, Tukachinsky was not convinced. He argued that we still do not know the exact hue of tekhelet, and therefore cannot rely on it to restore the Temple liturgy.

In the 1990s, the debate regarding the status of tekhelet in the Temple liturgy became a focal point in the efforts of the Temple Institute (Mekhon ha-Mikdash) in Jerusalem. The Temple Institute was founded in 1984 in order to prepare and promote the renewal of the Temple liturgy. One of its major objectives is the preparation of various artifacts required for that liturgy (for an example of a tekhelet garment, see Figure 14 in the color plates). Some artifacts present obstacles that must be addressed. The issue of a red heifer, mentioned above, has yet to be resolved.⁸³ However, the issue of tekhelet, required for the garments of the high priest, among other objects, seems to have been resolved by the introduction of the new tekhelet.

In 1996, the Temple Institute published the fifth volume of its periodical *Tsfia* (Heb., “observation”; but the Hebrew spelling also denotes *tsipia*, which means “anticipation”).⁸⁴ This volume was dedicated to the dyes required for Temple worship: tekhelet, *argaman*, and *tola'at shani*. Much of the volume discusses tekhelet in an anonymous polemic that might have been formulated by the Temple Institute's head, Rabbi Israel Ariel (b. 1939).

The polemical argument of the text was directed first and foremost against the general opponents of tekhelet, specifically Rabbi Menachem Mendel

Kasher (1895–1983), who opposed Herzog’s support for the renewal of tekhelet.⁸⁵ Surprisingly, the Temple Institute argued against *Murex* advocates as well—namely, against those who had introduced a tekhelet dye and apparently removed an obstacle to the renewal of the Temple liturgy. Why?

The argument against *Murex* advocates was that they were overly engaged in scholastic discussion about the details of the *hillazon* and the characteristics of the dye and too absorbed in debates justifying their innovation. According to the Temple Institute, renewing the Temple liturgy is an urgent issue that cannot wait for that kind of theoretical deliberation.

The polemic against *Murex* advocates includes an extensive halakhic discussion with various arguments that all lead to a similar conclusion: that the criteria for a *hillazon* are not as strict and definite as the supporters of *hillazon* claim. First, there is no need to produce the dye from a specific mollusk because the rabbinic statements are not that clear-cut. Second, the exact hue of tekhelet is not important as long as it is bluish. Third, and most important, the production of tekhelet from *hillazon* is relevant only for the tekhelet of tsitsit; even then, it is only a *mitzvah min hamuvhar*, meaning that it is not mandatory for fulfilling the commandment but rather an option for enhanced fulfillment of the law. This flexible approach regarding tekhelet stems from a general stance that laws related to the Temple should be performed despite any doubts that may be associated with them. Otherwise, Temple worship runs the risk of indefinite delay due to excessive caution. This lenient approach toward the debates surrounding tekhelet is exemplified by the author’s recommendation: “If one would like to be strict and conform to all opinions, one could put on the priestly sash various hues of tekhelet, such as dark blue, light blue, and even *hillazon* tekhelet, if available. That way, he will conform to all demands and hues. Also, if one would like to conform to all opinions, one could take tekhelet from various mollusk species; color the cords according to various approaches; and prepare the priestly sash as such. This way, one adheres to all halakhic opinions.”⁸⁶ As with the aforementioned debate between Aviner and Ariel, here the debate surrounding tekhelet reflects a broader tension. In the debate about the tekhelet of tsitsit, tekhelet advocates complained that the prominent rabbis of the generation were too hesitant; but in the context of the Temple, these same advocates are those accused of hindering the progress of the Temple. Thus, *Murex* advocates are indicted both from the conservative standpoint of Aviner and the radical position of the Temple Institute.⁸⁷

The debates about the role of tekhelet in the renewal of the Temple liturgy were actually between those who aimed to actively pave the way toward rebuilding the Temple and restoring its liturgy, and those who objected to that aim. Proponents believed that rebuilding the Temple should be the first step and the motive force toward redemption, after which, among other signs of redemption, the messiah will arrive. Opponents, however, understood the arrival of the messiah as the necessary first step; only then could the Temple be rebuilt. This debate regarding the Temple is a particular articulation of a broader question about the role of human activity in the messianic endeavor, a debate between two ever-present messianic trends in Judaism. One is activist, and assumes that human actions will generate a sequence of events that will eventually lead to the End of Days. The other is passivist, assuming that it is God who should initiate the sequence of events, while human beings should wait for these events, including the arrival of the messiah, to occur. According to the passivists, taking active measures toward the renewal of the Temple and its liturgy is not only unhelpful but is even sinful and harmful. It is sinful because it is against God's will; it is harmful because it could enrage God and cause him to delay his planned End of Days. Such debates on the question of rebuilding the Temple have arisen since the nineteenth century, and they have persisted into the present day.

Although messianism is a notable aspect of tekhelet, members of the Ptil Tekhelet association, who publicize and disseminate tekhelet, do not highlight this aspect in their publications. Messianism in Israel is a controversial issue; the organization seems to deny or marginalize messianism for the sake of wider acceptance of the other aspect of tekhelet—the tekhelet of tsitsit—which they see as more personally relevant to every Jew. Such a denial may have been an extension of Herzog's avoidance of speaking on the tekhelet of the Temple, as noted above.⁸⁸

Conclusion

Although the renewal of tekhelet pertained to one detail of a single commandment, and the opposition to it was often presented as an attempt to prevent schisms within Jewish society or Orthodox Judaism, the debates surrounding tekhelet were much more complex. The renewal of tekhelet was a significant innovation in contemporary Orthodox Judaism, and not only in the relationship between Jewish law and modernity; the renewal of tekhelet

also advanced the agenda of those interested in the reestablishment of the Temple liturgy, a position with inevitable political resonance. For this reason, the renewal of tekhelet raised deep opposition. The arguments that were presented against Leiner's tekhelet initiative were later repeated in various forms against the attempts to renew tekhelet using the *Murex* snail.

First, the renewal of tekhelet instituted a minor change in the manner of observance; but in a conservative legal system, even a small change was considered very threatening. Orthodox Judaism pursued the ethos of "the new is forbidden by the Torah" (*ḥadash asur min ha-Torah*), introduced by Rabbi Moshe Sofer (1762–1839), a founding father of Orthodox Judaism, known as the Ḥatam Sofer; it saw any renewal in the domain of Jewish law as a possible threat that must be stopped. This basic approach can be seen as the driving force for all the religious opposition to the renewal of tekhelet.

The renewal of tekhelet also introduced a paradigm shift with regard to sources of authority for Orthodox Jews, according to which, in some cases, science should take preference over tradition and rabbis. In the case of tekhelet, scientific knowledge was not just secondary or auxiliary in the halakhic discussion; it was a major source, without which the *Murex* tekhelet could not have been renewed. This shift afforded Orthodox Jews autonomy in making their halakhic decisions about tekhelet. Thus, the *Murex* supporters were accused of undermining the authority of the Talmud (for example, by claiming that Talmudic characterizations of the *hillazon* are aggadic, containing literary hyperbolics, and should not be taken literally as halakhic requirements), as well as the sovereign authority of Orthodox rabbis (for example, by the claim that they do not possess the scientific knowledge required, in the case of tekhelet).

The resistance to the renewal of tekhelet, then, is hardly surprising. In a Jewish culture of stringency in the performance of halakhah and opposition to any halakhic innovation, attempts to renew the tekhelet commandment were perceived as antinomian. The restoration of this ancient law amounted to the violation of the prevailing halakhic praxis of using only white threads. The antinomian aspect of tekhelet was not only the novelty of the dye; it was also the enthusiastic pursuit of authenticity and even perfection in religious life. That sort of perfectionism (exemplified in the legend of Korah) was thought to blur or even breach the borders of halakhah, which operates in an imperfect world.

The most fundamental criticism presented by the opponents of tekhelet challenged the use of science altogether, claiming that scientific evidence

should not determine halakhah because scientific arguments are always subject to refutation. According to this argument, it is the very advancement of science that proves its limitations.

Modern tekhelet, both the nineteenth- and twentieth-century versions, encapsulates modernity's challenge to Orthodoxy. Although the tekhelet initiative is presented as a restoration of ancient tradition, it actually breaks with another tradition, the later Orthodox practice of intentionally avoiding tekhelet. The conservative Orthodox rejection of the renewal of tekhelet in the name of tradition is, in fact, a modern understanding of halakhah that aims to protect the existing state, even if that renewal is accepted as authentic. As such, paradoxically, the rejection of innovation and submission to rabbinical authority in the name of tradition was undermined by a modern project that claimed to pursue an even more authentic tradition.

Conclusion

In an essay titled “A Journey in Blue,” the Israeli poet Nathan Zach (1930–2020) surveyed the role of the color blue in nineteenth-century European literature, and then continued his journey into the Hebrew literature of the twentieth century.¹ As we approach the end of this book’s journey, I would like, in the footsteps of Zach, to digress briefly into some literary examples.

One work that Zach reviewed was “Between Water and Water” (Heb., “Bein mayim le-mayim,” 1909), by Yosef Haim Brenner (1881–1921). In this story, a young woman who lives in Palestine reads a poem written by a fictional poet named David Yoffe. The poem, part of a collection called *The Blue Melodies* (Heb., *Ha-manginot ha-keḥulot*), features the following:

Water . . . Water . . . Water . . .
Bluish water . . . Bluish . . . Bluish . . .
From the hiding place of my bed, from under my cover, with blue
lips I shall emerge alone, to the bluish world.
I loved my bluish blanket, I loved it as I love the sky, the blue sky
that is above my head, as I love the bluish dove-like eyes that
my lover of my dreams has . . .
I am part of the bluish world, and I will cherish the blue life,
In a blue summer night, my world will hover upon the blue sky,
among the numerous stars, my star will shine, will glitter.²

In this imagined reverie on blue, Brenner mocks the prodigious appearance of the color in the Hebrew literature of the early twentieth century.³

Zach read Brenner’s parody as part of a more serious critique of early twentieth-century Hebrew authors, concluding that it represented “art for art’s sake, uninvolved art, apolitical part, amoral art.”⁴ He further noted that the European romantic tendency to emphasize the role of blue had raised criticism. This criticism was not limited to the usage of colors, of course. It

was a broader debate in nineteenth-century European culture on the idea of *l'art pour l'art*. An argument was advanced that it is immoral—indeed, impossible—to separate art from its social and political context. In the context of Hebrew literature of that time, the criticism was that such aesthetics seemed almost nihilistic, out of joint with the urgent business of the day: nation-building.

Additionally, Zach claimed that the romantic tendency of *l'art pour l'art* was given precedence over religious or traditional motifs for blue (motifs that were discussed in the chapters above), even among poets otherwise known for using distinctively Jewish religious or national themes. As one example, he discusses the work of Yaacov Kahan (1881–1960), a prominent poet who belonged to the Jewish Revisionist party and published notable nationalistic poems. With regard to blue, Kahan's work seems to have moved from religious allusions to secular imagery. Zach points to a poem that Kahan published in 1909 in which tekhelet is associated with the celestial sapphire and the Throne of Glory; by 1926, however, the frequent mentions of tekhelet in Kahan's work appeared in a purely romantic and nonreligious guise.

I would support a less decisive argument than Zach's: the particular religious and the purely artistic characters of the color blue can coexist rather than replace each other. Consider Yocheved Bat-Miriam (1901–1979), who made extensive reference to the color blue. Her well-known poem “The Land of Israel” (“Eretz yisrael”), from 1937, combines personal, religious, and national motifs of the color blue.⁵

The presentation of the status of the color blue by Zach overlooks its relative status to other colors. As previously noted, neglecting the other parts of the palette can generate a partial image. An example can be found in Zach's observations on Uri Zvi Greenberg (1896–1981), the leading poet of the nationalist Zionist parties. Zach classified Greenberg among those who criticized the so-called nihilist representation of blue as a color detached from social and political life, although he also referred to blue in a romantic manner. But the Greenberg case as presented by Zach is complicated. In Greenberg's poetry, red and gold predominate, not blue.⁶ As Dan Miron has noted, it is the color red that represents political activism, whereas blue represents Greenberg's personal yearnings, primarily for his childhood.⁷ It is possible to say, then, that in the poetry of Greenberg, there is a kind of “division of labor” between the colors red and blue. A similar tendency can be found in the poetry of Amir Gilboa (1917–1984), in whose collection of poems *Blues and*

Reds (*Kehulim va-adumim*) scholars have identified transitions between a celestial blue and an earthly, often bloody, red.⁸

The Israeli art critic Gideon Ofrat (b. 1945) makes a case for a similar kind of coexistence in the domain of Israeli visual art. Because red is the color of blood, it has long represented the corporeal sphere; blue, the color of the sky, has been perceived as belonging to the spiritual realm. Ofrat argues that Israeli artists tend to replace red tones with bluish tones so that, in their work, blue often has a reddish tinge and red a bluish tinge. Hence, claims Ofrat, the Israeli blue is less detached from the social and the political than the European blue.⁹ One might speculate that this red-blue mélange is related to another tendency of Israeli artists: to represent the corporeal characteristics of the Land of Israel, emphasizing the clear blue sky and blue sea, as related to the political endeavor of Zionism. Ofrat, who wrote his own essay on blue, also noted the religious and social motifs of blue in Israeli art.¹⁰

* * *

For Nahman of Bratslav, *tekhelet* is a color between black and white, as well as the color of the mixing of black and white (but he does not use the name of another hue, such as gray). It is the color that appears when black ink is impressed on white paper.¹¹ This rather enigmatic characterization of *tekhelet* as a liminal color is actually congruent with a more general characteristic of the color blue in Judaism as a liminal color, which simultaneously separates and connects different domains. As we have seen, the color blue, more than any other color in Judaism, plays dual roles: as a color of contrasts and a color of bridging.

Tekhelet was presented in Jewish mystical literature as a color between darkness and light, between the primordial darkness and the light of creation, but also the color of dawn that separates the night from the rising morning. Blue as a liminal color further appears in its positioning between earthly creatures and divine entities. Such positioning is shown in the association of *tekhelet* with the last emanation, *malkhut*, which is often presented as a link between the earthly and the divine. The last emanation gathers the divine influx from the *sefirot* above, transferring it to the earthly creatures, while uplifting the prayers of human beings to the divine realm. If the last emanation has any color whatsoever as an object of contemplation, it seems to be blue. In this context, the last emanation is often portrayed as a blue sea, a vessel gathering the influx before transferring it further.

Such positioning can also be seen when tekhelet is associated with the curtain covering the Throne of Glory, thereby dividing the human domain from that of the divine. The separation between the domains also connects them. That state of being, between the earthly and the divine, is ambiguous because it both conceals and reveals the divine entities. The concealment is an act of separation, whereas the revelation is an act of attachment and encounter.

Another prominent duality that blue is associated with is that of the individual and the collective. An important manifestation of this duality concerns tekhelet in experiences of the divine. The color blue is indeed associated with individual experiences of the divine. As Rabbi Aryeh Kaplan wrote in his discussion of meditating on tekhelet, “blue is always a color associated with vision and prophecy.”¹² But that very same mystical context also presents blue as *Kenesset Yisrael*, the gathering of Israel, constituting blue as a color with shared significance for all Jews. A second manifestation of this duality is in the earthly realm—between tekhelet as an aspect of the personal commandment of the tsitsit, and the communal blue, associated with Zionism as a social movement, and manifested in the color of the Israeli flag and the Israeli national symbol of the menorah. In the discussion above, I added another element to this duality: the renewal of the tekhelet dye, particularly in the twentieth century, tied together the personal commandment of the tsitsit with collective Jewish national symbols in which the color blue played an important role. These national symbols are the Jewish Temple, as well as the blue Mediterranean Sea of the Land of Israel, the source of the *hillazon*. Moreover, the fact that the tekhelet of the tsitsit was adopted primarily by religious Zionist Jews emphasizes the link between the religious tekhelet and the national Zionist blue.

In addition to all of the above, the color blue has two seemingly contradictory features: it is a positive color, heralding goodness and prosperity; and it is a harbinger of ill omen and danger. This dual role of tekhelet is discernible in antiquity but crystallized in medieval kabbalah, when tekhelet was linked with the last emanation of the kabbalistic system of *sefirot*, an emanation traditionally characterized as a dual action of both divine judgment and divine mercy. Such duality was manifested with regard to the evil eye, as well: blue was at once the “illness” and the cure. In this context, it is worth mentioning the myth of the *shekhinah*, who covers herself with a tekhelet garment to deter the forces of evil attracted to her. And in the context of the tekhelet dye, there was one blue that was the genuine tekhelet and an-

other that was the fake tekhelet, *kala ilan*, which was sometimes considered a symbol of the forces of evil. In the national context, blue was the color of clothing imposed on Jews under certain rulers in the diaspora, which was understood as exile but also the color of Jewish sovereignty in times perceived as redemptive.

The paradox of tekhelet can be seen as a manifestation of another characterization of this color: its exceptionality. This was alluded to by Rabbi Meir as early as the second century CE but was expanded upon in later periods. Tekhelet has been the subject of obscure characterizations as a unification of all colors, the source of all colors, and also as a “noncolor.” I have suggested that the unavailability of tekhelet for centuries of Jewish material culture may have made it into a color of enigma.

Blue is thus everywhere and nowhere. It is the color of a people dispersed among the nations but in a permanent state of exile and homelessness. This people has a commandment in which a thread of blue miraculously represents all other commandments; but for centuries, it could not fulfill that commandment because of the absence of the tekhelet dye. It is a color represented by a forgotten mollusk, waiting to be given to the righteous in the World to Come. It is a color that, in the Jewish context, has been portrayed as somehow superior and inferior at the same time.

* * *

If there ever was a color with a Jewish history, it is the color blue. This book has presented a history of the material and spiritual aspects of that color, as well as the entwinement of these aspects since early modern times.

In the early modern period, blue seemed to embody passivity and vulnerability. For example, Jews perceived blue clothing, which was often imposed on them by Ottoman sumptuary laws, as a defense against the evil eye, particularly the evil eye of non-Jews. Consider also the unavailability of the tekhelet dye: for kabbalists, the weakness and humiliation of the Jews in exile prevented them from fulfilling the commandment of tekhelet, which would be renewed only in times of redemption. Hence, it is not surprising that in this period, Jews often associated the color blue with the color black, both of which represented humility and even exilic mourning.

The second half of the nineteenth century witnessed a shift in the status of the color blue among Jews. Advances in the research, discovery, and production of colorants, including ancient antique dyes, were fertile ground

for reproducing the ancient tekhelet dye. Additionally, a growing push for Jewish nationalism and self-sovereignty stimulated messianic expectations among some Orthodox rabbis that the Temple liturgy, for which tekhelet was required, would be renewed. The Zionist movement adopted blue as its signature color, not only because of the tekhelet dye but also because it was associated with the skies of the Land of Israel. And archaeological discoveries of mollusks and dyed textiles in the young State of Israel gave further impetus to the research and production of tekhelet.

From the early modern emphasis on darker shades of blue, which represented the vulnerability and passivity of the Jews, the trend moved toward brighter hues, marking a shift toward Jewish self-confidence and activism in both the religious and political realms. Bright hues, which psychologists often associate with optimism, might reflect the excitement of the seeming fulfillment of messianic hopes.

The alleged rediscoveries in the nineteenth and twentieth centuries of the lost *hillazon* and the procedure for producing the tekhelet dye have generated intense controversy among Orthodox Jews. Some are eager to reinstate the rituals of tekhelet, thus contributing to the restoration of the ancient Israelite past; others vigorously reject such attempts. While the strife appears to center on one specific commandment, it reflects much broader issues in contemporary Judaism.

Supporters of this renewal see it as a quintessential example of the use of modern science (optics, biology, chemistry, etc.) for religious purposes—in this case, the revival of a long-lost biblical commandment. Moreover, the contemporary use of tekhelet symbolizes for some the messianic restoration of the ancient Jewish past. In this imagined past, Jews lived in the Land of Israel, prepared tekhelet from Mediterranean mollusks, worshiped their God in the Temple, and fulfilled Jewish law in its entirety. Opponents of the tekhelet renewal, for their part, tend to oppose the use of modern science for religious purposes, object to the element of messianism involved in the renewal of tekhelet, and often reject its Zionist dimension.

The modern history of the color blue in Judaism encapsulates modernity's challenge to traditional Judaism. The tekhelet renewal projects were based on modern science and also contributed to modern Jewish nationalism. During the nineteenth century, both science and nationalism were perceived as threats to traditional Jewish life. Jewish Orthodoxy, which responded to these challenges, was thus in itself modern. One Orthodox response to tekhelet was rejection, whereas another response was to embrace tekhelet,

in an attempt to recruit science for the Orthodox part of the nation-building project of Zionism.

* * *

If the color blue has a Jewish history, is it possible to go further and argue that it is the emblematic color of Judaism?

In his essay about the *tsitsit*, the nineteenth-century Orthodox rabbi Samson Raphael Hirsch (1808–1888), known as a pioneer of modern Orthodox Judaism, includes a short discussion on the meaning of *tekhelet*.¹³ Hirsch characterizes the symbolism of the colors *tekhelet*, red, and green. In his view, the spectrum of colors symbolizes the various relationships of human beings with the world. The color red, located at one end of the visible spectrum, symbolizes materiality, earthly existence, and blood. *Tekhelet*, located close to the other end of the spectrum, symbolizes spirituality. But *tekhelet* is not spirituality itself, which is symbolized by one of the invisible hues of the spectrum. Rather, for Hirsch, *tekhelet* is the bridge between corporeality and spirituality. This observation is congruent with kabbalistic characterizations of *tekhelet*, as presented in Chapter 2 above, although Hirsch was not known as a proponent of kabbalistic thought. Hirsch also considered *tekhelet* to be representative of a distinctively Jewish mission of being a priestly nation. There is no other color, he concludes, that is capable of representing the special relationship between God and the Jews. In other words, *tekhelet* is the most Jewish color of all.

Hirsch did not set out to present a historical analysis of the color blue in Judaism. He wrote that his observations on this matter are speculative. Indeed, the notion that any particular color has been a “Jewish color” is overly simplistic. In addition to the fact that such an argument depends on the particular historical context, the association of a color with a particular social group is always subjective: although blue matches several Jewish symbols, so, too, yellow can be identified as Jewish, due to Jews being tagged with yellow badges throughout the years. That being said, the discussion in the chapters above yields a conclusion similar to Hirsch’s, although on a different, and perhaps more solid, basis. From a Jewish religious point of view, blue seems to take precedence, primarily from early modern times.

The medieval association between *tekhelet* and the last emanation of the kabbalah fits *tekhelet*’s association with the Jewish people because the last emanation is also called *Kenesset Yisrael*, as noted above. Modern interpreters

understood the meditation on tekhelet as a distinctive Jewish practice. As shown, in the early modern period, the association between tekhelet and *Kenesset Yisrael* became a religious explanation for wearing blue clothing to protect oneself, especially against the threat of non-Jews. Additionally, the color blue was thought to impart to Jews a special capacity for mystical and eschatological envisioning.

The tekhelet renewal projects also contributed to the identification of tekhelet as the Jewish color. The twentieth-century renewal was understood by its supporters—mainly, religious Zionist Israelis but also secular Zionist scientists—as a manifestation of the renewal of the Jewish people. The *hillazon* itself, believed to be revealed after centuries of concealment—is a symbol of the quickening of Jews, who reacquired their sovereignty after centuries of subservience in exile. The fact that the *Murex* snail was found near the Israeli shores solidified the connection between the past and present in the tekhelet renewal projects. The archaeological findings in the Judean desert and southern Israel amplified the feeling that ancient Israelite history is being restored. Moreover, the messianism associated with the renewal of tekhelet was primarily a collective historical messianism of the renewal of the Temple and its rituals. That form of messianism, which is neither personal nor universal, brings redemption to the Jews as a group. The color of the flags of the Zionist movement and the State of Israel contributed to this status, at least in the eyes of Zionist Jews.

The association between tekhelet and the Jews should also be understood against the backdrop of the status of other colors in the Jewish imagination: red was emphatically associated with Christianity (in addition to its connotation as representing licentiousness), whereas green was associated with Islam. These perceptions were accompanied by restrictions under Muslim rule.

The notion that tekhelet is an exceptional color fits its association with the Jews, who perceive themselves as exceptional among the nations. The dual character of tekhelet as simultaneously superior and inferior can also fit its association with a certain Jewish self-perception: a self-image of superiority juxtaposed with an actual political inferiority.

* * *

In his novel *Feathers*, Israeli author Haim Be'er (b. 1945) introduced the grandfather of the narrator as an avid pursuer of the lost *hillazon* from which the

tekhelet dye should be produced.¹⁴ That sort of pursuit was described by one of the protagonists as admirable nonsense: “Of course, all the treasures that your ancestors were hunting were perfectly useless nonsense,’ Leder observed—and yet not even the most confirmed freethinker could help admiring their courage and determination to go their own way in the face of public ridicule.”¹⁵ The grandfather’s pursuit of tekhelet is described as a personal mission for bringing redemption for the entire Israelite nation:

My grandfather nodded back and replied that, while he was indeed close to unmasking the secret of true biblical blue, its exact nature still eluded him. Yet in any case, he continued, his quest for it was for purely spiritual ends, so that his coreligionists might don prayer shawls and four-cornered fringes as prescribed by the Law of Moses—beyond which he was thinking of the future, of the time when his people’s ancient glory would be restored and priests dressed in azure like the angels of heaven would once again offer sacrifices in the Temple of the Lord. It was for them that he had undertaken his perilous journeys to the ends of the earth.¹⁶

The yearning for blue—not necessarily tekhelet—is outstanding in Itzik Manger’s “The Ballad of the Jew Who Went from Gray to Blue,” with which I will end. In this poem, the color blue can be understood as signifying the movement toward redemption, or a messianic future.¹⁷ The ballad recounts the journey of a poor Jew from his shabby life, characterized by the color gray, to an elevated dream, colored blue, followed by a gushing out of this blue to the whole world. The journey begins on a heavily gray note:

The Jew stops beside a graying tree
And says a prayer aloud:
“Lord of the World, erase the gray
From all my ways and let
My wandering journeys through the world
Be bright and clear, at least.”
When he has done, his heart grows light,
His prayer, a butterfly,
Flutters before him, a dot of blue
In a landscape of gray on gray.

Continuing on his journey, the Jew spots an inn. The innkeeper's wife, who is dressed in blue, invites him inside. The walls of the establishment are colored blue, and the innkeeper reads a story to their young son about a bluish kingdom surrounded by a blue river. The Jew falls asleep and sees blue in his dream:

The Jew listens, fatigued with blue,
 And dozes, fatigued with blue,
 And his dream spins a road, and the road is blue,
 His stick is blue, and his sack is blue,
 And the bird that flutters by is blue,
 And the field and the wood and the river are blue;
 The innkeeper gapes, and his wife gapes, too,
 At the way the Jew gushes blue
 That fills the room and streams outdoors
 Enfolding all of the house in blue.

In Manger's ballad, the Jew prays that darkness will turn to brightness, that the profane will become sacred, that bright blue will colorize the gray world. It is a yearning for a kingdom of blue that finally materializes, if only for a moment. Manger's blue seems to exist well beyond the life of the individual; it is a redemptive force that covers the entire world. Perhaps it is even a Jewish redemptive force.¹⁸ But this movement is not uninterrupted: the gray road cries out that the Jew has abandoned it, and seeks his return. The innkeeper, too, tries to awaken the Jew from his dream. These efforts fail. On and on runs the refrain "the Jew gushes blue,"¹⁹ leaving the reader with the sense of a permanent flow of color:

The sleeping Jew smiles. In his dream
 He's just at the gate of the kingdom of blue;
 In a moment, he'll open the gate and see
 In the valley the first three cities of blue.
 The innkeeper gapes, and his wife gapes, too,
 At the way the Jew gushes blue
 That fills the room and streams outdoors,
 Enfolding all of the house in blue,
 And the blue becomes murmur and stammer and flight
 And whisper and song from afar.

It turns leaf and twig and branch and tree
And cloud and forest and dream on dream,
And the blue turns waves and river and sea,
Mysterious inkling and holy rhyme,
Turns tread and stamp and dance and joy,
Turns joy after joy and eternity.
Turns glitter and shimmer, and beam and light,
Turns shade and flesh and features, too;
The innkeeper gapes, and his wife gapes, too,
At the way the Jew gushes blue
That fills the room and streams outdoors,
Enfolding all of the house in blue,
And . . .

Glossary

adom: red

argaman: purple

Ashkenazic Jews: Jews of Western, Central, and Eastern Europe

Babylonian Talmud: primary text of ancient rabbinic literature, completed around the fifth century CE

beḡed tekbelet: cloth of *tekbelet*

halakhah (adj., **halakhic**): Jewish religious law

Hasid (pl., **Hasidim**): follower of a Hasidic leader

Hasidism (adj., **Hasidic**): religious Jewish social movement that emerged in eighteenth-century Eastern Europe. One of the leaders of this movement, Gershon Henekh Leiner, claimed to have restored the ancient *tekbelet* dye.

Hexaplex trunculus: snail commonly identified as the source of the *tekbelet* dye (cf. *ḥillazon*)

ḥillazon: marine mollusk (snail, in modern Hebrew), the identity of which is uncertain. Its secretions are used to make the *tekbelet* dye.

ḥokhmah: wisdom, the second of ten emanations (*sefirot*) of the Godhead, according to kabbalah

indigo: plant-based blue dye

***Janthina janthina*:** snail suggested as a possible source of the *tekbelet* dye (cf. *ḥillazon*)

kabbalah (adj., **kabbalistic**): Jewish esoteric and mystical doctrines

kaḥol: blue

kala ilan: a dye, such as indigo, made of a plant source

kelipah (pl., **kelipot**): shell or husk. According to kabbalistic teachings, this refers to evil, or impure spiritual forces.

***Keneset Yisrael*:** the unification of Israel. Name of the tenth and bottom-most emanation in the system of ten emanations of the Godhead, according to kabbalah. This name represents the connection between the Godhead and the entire Jewish people (cf. *malkhut*, *shekhinah*).

koḥal/kaḥal: bluish powder used as eye makeup (cf. *pukh*)

lavan: white

malkhut: kingdom or kingship. Name of the tenth of the ten emanations of the Godhead, according to kabbalah (cf. *Kenesset Yisrael*, *shekbinah*)

Mishnah: major written text of ancient rabbinic literature, edited in the second and third centuries CE, containing the Jewish legal code

Murex trunculus: original name of *Hexaplex trunculus*

Palestinian Talmud: major text of ancient rabbinic literature, completed around the fourth century CE

pukh: bluish powder used as eye makeup (cf. *kaḥal*); also, a precious stone

purpura/porphyra: purple dye extracted from marine mollusks in antiquity; also known as Tyrian purple

rebbe: Hasidic master

sefirah (pl., *sefirot*): an emanation of the Godhead, according to kabbalah

Sephardic Jews: Jews of the Iberian Peninsula, North Africa, Near East, and Balkans

***Sepia officinalis*:** Common cuttlefish. A blue dye made of its ink was declared *tekhelet* by some Jews.

shaḥor: black

shekbinah: divine presence. In kabbalistic teachings, the *shekbinah* represents the feminine aspect of the Godhead, as well as the Godhead's dwelling in the world (cf. *Kenesset Yisrael*, *malkhut*).

Talmud (adj., **Talmudic**): cf. Babylonian Talmud or Palestinian Talmud

tekhelet: dye of a bluish hue, which, according to Jewish law, should be made from the secretion of a marine mollusk

tola'at shani (lit., “**crimson worm**”): scarlet. Dye colored a reddish hue, which is made of kermes insects.

Torah: first five books of the Hebrew Bible. The word *torah* is also defined more broadly as the entire code of Jewish law and the practices of the Jews.

Tosefta: major text of ancient rabbinic literature, completed around the third century CE. The word *tosefta* means “addition”; this work supplements the Mishnah.

tsitsit/ṣiṣit (pl., **tsitsiot/ṣiṣiot**): ritual tassels on the clothing of Jews

yarok: green, sometimes yellow, and rarely blue

Zohar (adj., **Zoharic**): major text of medieval kabbalah

Notes

INTRODUCTION

1. *Sefer hayovel*, ed. Shmaryahu Leib Horowitz (New York: Myold, 1930), 68.
2. Johann Wolfgang von Goethe, *Theory of Colours*, trans. Charles Lock Eastlake (London: John Murray, 1840), 311.
3. Wassily Kandinsky, *The Art of Spiritual Harmony*, trans. M. T. H. Sadler (Boston: Houghton Mifflin, 1914), 75.
4. Perhaps the most famous study is that of Michel Pastoureau, *Blue: The History of a Color* (Princeton, NJ: Princeton University Press, 2001).
5. See, e.g., I. C. McManus, Amanda L. Jones, and Jill Cottrell, "The Aesthetics of Colour," *Perception* 10 (1981): 651–666.
6. See, e.g., Guy Deutscher, *Through the Language Glass: Why the World Looks Different in Other Languages* (New York: Metropolitan, 2011), and the numerous references there.
7. Ludwig Wittgenstein, *Culture and Value*, ed. G. H. Von Wright, trans. Peter Winch (Chicago: University of Chicago Press, 1980), 66e.
8. For recent examples of research on colors in non-Jewish cultures, see Jonathan M. Bloom and Sheila S. Blair, eds., *And Diverse Are Their Hues: Color in Islamic Art and Culture* (New Haven, CT: Yale University Press, 2011); Mary M. Dusenbury, ed., *Color in Ancient and Medieval East Asia* (New Haven, CT: Yale University Press, 2015).
9. For a survey of the explanations given for that propensity, see Steven Fine, "Menorahs in Color: Polychromy in Jewish Visual Culture of Roman Antiquity," *Images* 6 (2013): 3–27.
10. See, e.g., Kalman P. Bland, *The Artless Jew: Medieval and Modern Affirmations and Denials of the Visual* (Princeton, NJ: Princeton University Press, 2000).
11. See, e.g., the bibliographical essays by Mati Meyer, Katrin Kogman-Appel, and Maya Balakirsky Katz on Jewish art in the "Oxford Bibliographies Online" project, as well as more general surveys, such as Judah M. Cohen, "Jewish Arts and Material Culture," in *The Bloomsbury Companion to Jewish Studies*, ed. Dean Phillip Bell (London: Bloomsbury, 2013), 251–281.
12. David Batchelor, *Chromophobia* (London: Reaktion, 2000). On chromophobia among the Jews, see, e.g., Steven Fine, *Art, History and the Historiography of Judaism in Roman Antiquity* (Leiden: Brill, 2014), 87–88.
13. For references to these studies, see Chap. 1 below.
14. The most notable publications in this vein are Ehud Spanier, ed., *The Royal Purple and the Biblical Blue (Argaman and Tekhelet): The Study of Chief Rabbi Dr. Isaac Herzog on the Dye Industries in Ancient Israel and Recent Scientific Contributions* (Jerusalem: Keter, 1987); Baruch

Sterman and Judy Taubes Sterman, *The Rarest Blue: The Remarkable Story of an Ancient Color Lost to History and Rediscovered* (Guilford, CT: Lyons, 2012). For other references, see Chap. 4 below.

15. See, e.g., Fine, *Art, History and the Historiography of Judaism in Roman Antiquity*.

16. Fine, “Menorahs in Color.”

17. I will refer to Scholem’s article by its English translation: Gershom Scholem, “Colours and Their Symbolism in Jewish Tradition and Mysticism,” *Diogenes* 108 (1979): 84–111; 109 (1980): 64–76.

18. For references to these studies, see Chap. 2 below.

19. Rebekka Voss, *A Visual Kingdom: The Red Jews in Yiddish Culture* (forthcoming).

20. See, e.g., Yael Schwartz, “The Color Patterns of David Fogel’s Poetry and Their Relations to Other Patterns,” *Siman Kri’ah* 1 (1972): 76–108 (Hebrew); Ruth Kartun-Blum, “On the Significance of Color Descriptions in the Poetry of Yocheved Bat-Miriam,” in *Mehkerei sifrut mugashim le-shimeon balkin*, ed. Ezra Fleisher (Jerusalem: Magnes, 1973), 205–223 (Hebrew); Hamutal Bar-Yosef, “Colour Symbolism in U. N. Gnessin’s Stories,” *Mehkerei yerushalayim be-sifrut ivrit* 6 (1984): 7–28 (Hebrew); Lillian Debi-Guri, “The Metaphorical Value of Colors in the Poetry of Uri Zvi Greenberg: Notes on the Relation of His Poetry to Kabbalistic Sources,” in *Shira u-mistorin: ‘Iyunim le-yovlo shel ha-meshorer sh. shalom*, ed. Yoav Elstein and Haim Shoham (Ramat Gan: Bar-Ilan University Press, 1985), 73–87 (Hebrew).

21. Pastoureau, *Blue*; idem, *Black: The History of a Color* (Princeton, NJ: Princeton University Press, 2009); idem, *Green: The History of a Color* (Princeton, NJ: Princeton University Press, 2014); idem, *Red: The History of a Color* (Princeton, NJ: Princeton University Press, 2017); idem, *Yellow: The History of a Color* (Princeton, NJ: Princeton University Press, 2019).

22. Amy Butler Greenfield, *A Perfect Red: Empire, Espionage, and the Quest for the Color of Desire* (New York: HarperCollins, 2005).

23. Bruce R. Smith, *The Key of Green: Passion and Perception in Renaissance Culture* (Chicago: University of Chicago Press, 2009).

24. Elon Gilad, “How Did the Different Colors Get Their Names?,” *Haaretz*, December 20, 2014. For the proposals, see “A Glossary of Photography Terms,” *Lesbonenu* 3 (1931): 170–178 (Hebrew); “A Glossary of Color Terms,” *Lesbonenu* 6 (1934): 83–87 (Hebrew).

25. Pastoureau, *Blue*, 10.

26. Of the numerous studies, see, e.g., Paolo Frassanito and Benedetta Pettorini, “Pink and Blue: The Color of Gender,” *Child’s Nervous System* 24, no. 8 (2008): 881–882; Jo Barraclough Paoletti, *Pink and Blue: Telling the Boys from the Girls in America* (Bloomington: Indiana University Press, 2012); Marco Del Giudice, “Pink, Blue, and Gender: An Update,” *Archives of Sexual Behavior* 46, no. 6 (2017): 1555–1563.

27. Benjamin Ravid, “From Yellow to Red: On the Distinguishing Head-Covering of the Jews of Venice,” *Jewish History* 6 (1992): 182.

28. Stephen E. Palmer and Karen B. Schloss, “Color Preference,” in *Encyclopedia of Color Science and Technology*, ed. Ming Ronnier Luo (New York: Springer, 2016), 354–360.

29. Pastoureau, *Blue*, 14.

30. Umberto Eco, “How Culture Conditions the Colours We See,” in *On Signs*, ed. Marshall Blonsky (Baltimore MD: Johns Hopkins University Press, 1985), 171.

31. This list is based on Athalya Brenner's "Primary Terms," in idem, *Colour Terms in the Old Testament* (Sheffield: JSOT, 1982), 39–48. Several other terms, categorized by Brenner as "secondary" and "tertiary" terms, as well as other categories, stem from that list.
32. Deutscher, *Through the Language Glass*, 87.
33. See n. 37 below.
34. See, e.g., Yakov Nagen, "Spirituality and Meta-Halakhah in the Binding of Tekhelet of Tsitsit," *Akdamot* 27 (2011): 205–214 (Hebrew).
35. An example of this contrast is in the opening passage above. Red and blue had been in competition in the general European culture since medieval times: Pastoureau, *Red*, 86–89.
36. E.g., Miho Saito, "Comparative Studies on Color Preference in Japan and Other Asian Regions with Special Emphasis on the Preference for White," *Color Research and Application* 21 (1996): 35–49; Kazuhiko Yokosaw et al., "Ecological Effects in Cross-Cultural Differences Between U.S. and Japanese Color Preferences," *Cognitive Science* 40 (2016): 1590–1616.
37. Delwin T. Lindsey and Angela M. Brown, "Color Naming and the Phototoxic Effects of Sunlight on the Eye," *Psychological Science* 13, no. 6 (2002): 506–12; Sebastian Walter, "Perceiving 'Grue': Filter Simulations of Aged Lenses Support the Lens-Brunescence Hypothesis and Reveal Individual Categorization Types," in *New Directions in Colour Studies*, ed. Carole P. Biggam et al. (Amsterdam: John Benjamins, 2011), 329–342.
38. Rachel Neis, *The Sense of Sight in Rabbinic Culture: Jewish Ways of Seeing in Late Antiquity* (Cambridge: Cambridge University Press, 2013), 20.
39. See, e.g., Chalmers I. Paton, *Freemasonry: Its Symbolism, Religious Nature, and Law of Perfection* (London: Reeves and Turner, 1873), 135–136; Albert G. Mackey, *An Encyclopædia of Freemasonry and Its Kindred Sciences* (Philadelphia: L. H. Everts, 1894), 119–120.
40. See, e.g., Julie Chajes, "Seth Pancoast and the Kabbalah: Medical Pluralism and the Reception of Physics in Late Nineteenth-Century Philadelphia," *Kabbalah* 40 (2018): 131–161.

CHAPTER I

1. William Ewart Gladstone, *Studies on Homer and the Homeric Age* (Oxford: Oxford University Press, 1858), 3:483. Quoted, with slight modifications, in Guy Deutscher, *Through the Language Glass: Why the World Looks Different in Other Languages* (New York: Metropolitan, 2011), 34.
2. Among the numerous scholarly references to this debate, see Deutscher, *Through the Language Glass*; Tamar Sovran, "Color Terms," in *Encyclopedia of Hebrew Language and Linguistics*, ed. Geoffrey Khan, http://dx.doi.org/10.1163/2212-4241_ehll_EHLL_COM_00000820 (accessed January 12, 2021). Regarding the particular case of blue, see Michel Pastoureau, *Blue: The History of a Color* (Princeton, NJ: Princeton University Press, 2001), 23–27.
3. See, e.g., Shiyanthi Thavapalan and David A. Warburton, *The Value of Colour: Material and Economic Aspects in the Ancient World* (Berlin: Humboldt University, 2019). On the rise of scholarly interest, see Steven Fine, "Menorahs in Color: Polychromy in Jewish Visual Culture of Roman Antiquity," *Images* 6 (2013): 5–6. On the case of colors of textiles, see

Cecilie Brøns, “The Colours of Ancient Greek Dress,” in *Dress in Mediterranean Antiquity*, ed. Alicia J. Batten and Kelly Olson (London: Bloomsbury, 2021), 77–94.

4. E.g., Roland Gradwohl, *Die Farben im Alten Testament: Eine terminologische Studie* (Berlin: A. Töpelmann, 1963); Athalya Brenner, *Colour Terms in the Old Testament* (Sheffield: JSOT, 1982); Maria Bulakh, “Basic Color Terms of Biblical Hebrew in Diachronic Aspect,” *Babel und Bibel* 3 (2006): 181–216; John E. Hartley, *The Semantics of Ancient Hebrew Colour Lexemes* (Louvain: Peeters, 2010); Sovran, “Color Terms.”

5. E.g., Sylvia Rosenberg, “Pigments and Fresco Fragments from Herod’s Palace at Jericho,” in *Tseva me-ha-teva: Al tseva’im tiv’iyim ba-’et ba-’atika*, ed. Chagit Sorek and Etan Ayalon (Tel Aviv: Eretz Israel Museum, 1993), 41–46; Fine, “Menorahs in Color”; idem, *Art, History and the Historiography of Judaism in Roman Antiquity* (Leiden: Brill, 2014).

6. Accidents such as the sudden death of the sons of Aaron (Lev. 10:1), who seem not to have taken the proper precautions in the liturgy of the Tabernacle.

7. The term *hur* is usually interpreted as white, perhaps due to the similarity of the spelling to *hiver*, which means “pale” in Hebrew.

8. Bible translators typically translate *tekhelet* as blue, *argaman* as purple, and *tola’at shani* as kermes, scarlet, or vermilion. I will keep translations of *argaman* and *tola’at shani* unchanged but will use the term *tekhelet* instead of its renditions, as the common identification of *tekhelet* with blue is debatable.

9. E.g., “As for the Tabernacle, make it of ten strips of cloth; make these of fine twisted linen, of tekhelet, purple, and crimson yarns, with a design of cherubim worked into them” (Exod. 26:1).

10. “Takiltu,” in *The Assyrian Dictionary of the Oriental Institute of the University of Chicago* (Chicago: University of Chicago Press, 2006), 16:70.

11. “Argamanu,” in *The Assyrian Dictionary of the Oriental Institute of the University of Chicago*, vol. 1, pt. 2 (Chicago: University of Chicago Press, 1968), 253.

12. Wayne Horowitz, “*Tekhelet* and *Argaman* in Cuneiform Sources,” in *Out of the Blue* (exhibition catalog), ed. Oree Meiri, Yigal Bloch, and Yehudah Kaplan (Jerusalem: Bible Lands Museum, 2018), 53.

13. E.g., Jacob Milgrom, “Of Hems and Tassels: Rank, Authority and Holiness Were Expressed in Antiquity by Fringes on Garments,” *Biblical Archaeology Review* 9 (1993): 61–65.

14. Ibid., 65.

15. *t. Menah.* 9:6. The translation is according to Isaac Herzog, “Hebrew Porphyrology,” in *The Royal Purple and the Biblical Blue (Argaman and Tekhelet): The Study of Chief Rabbi Dr. Isaac Herzog on the Dye Industries in Ancient Israel and Recent Scientific Contributions*, ed. Ehud Spanier (Jerusalem: Keter, 1987), 56.

16. E.g., *b. Sanh.* 91a. This reference to the *hillazon* does not mention *tekhelet*. There are opinions that the ancients distinguished between the *hillazon* for *tekhelet* and other types of *hillazon*. See the entry *hillazon* in *Entsiklopedia talmudit* (Jerusalem: Yad Harav Herzog, 1976), 15:530–534, esp. n. 14.

17. *b. Menah.* 44a. Translation according to Herzog, “Hebrew Porphyrology,” 65. This source is a *baraita* (a tannaitic source that preceded the Talmud).

18. One of the modern supporters of *tekhelet*, Israel Ziderman, suggested in a private conversation that these details were meant to be guidelines for fishermen so that they could identify the *hillazon*. But I wonder how a fisherman can decide if a particular mollusk comes up every seventy years.

19. Herzog, “Hebrew Porphyrology,” 44–45, 78.

20. For a brief general description, see, e.g., Charlene Elliott, “Purple Past: Color Codification in the Ancient World,” *Law & Social Inquiry* 33 (2008): 173–194; Michel Pastoureau, *Red: The History of a Color* (Princeton, NJ: Princeton University Press, 2017), 40–43. It should be noted that the term “purpura” refers to a specific species of marine mollusk from which that sort of dye was produced.

21. The name “Phoenician” is an ancient Greek word, possibly hinting at the purple dye.

22. Nira Karmon, “Archaeological Evidence of the Purple Dye Industry from Israel,” in *The Royal Purple and the Biblical Blue*, ed. Spanier, 147–158; idem, “The Purple Dye Industry in Antiquity,” in *Tseva me-ha-teva*, ed. Sorek and Ayalon, 80–95 (Hebrew); Golan Shalvi, “The Early Purple Dye Industry in Israel: A View from Tel Shikmona,” in *Out of the Blue*, ed. Meiri et al., 65–77; Naama Sukenik et al., “Early Evidence of Royal Purple Dyed Textile from Timna Valley (Israel),” *PLOS ONE* 16, no. 1 (January 28, 2021): e0245897, <https://doi.org/10.1371/journal.pone.0245897> (accessed January 31, 2021).

23. Pliny, *Natural History*, vol. 3, bk. 9, trans. H. Rackham (Cambridge, MA: Harvard University Press, 1940), chap. 62, 252–255.

24. Baruch Sterman expressed this speculation in a personal communication.

25. *Suetonius*, trans. J. C. Rolfe (Cambridge, MA: Harvard University Press, 1979), 459 [*The Lives of the Twelve Caesars*, chap. 35; referred by Pastoureau, *Red*, 42].

26. Elliott, “Purple Past,” 182–187.

27. Baruch Sterman and Judy Taubes Sterman, *The Rarest Blue* (Guilford, CT: Lyons, 2012), 9–10.

28. Joshua Schwartz, “Clothes Make the Jew: Was There Distinctive Jewish Dress in the Greco-Roman Period?,” in *Dress in Mediterranean Antiquity*, ed. Batten and Olson, 247–256.

29. Herzog, “Hebrew Porphyrology,” 107–114.

30. Israel Ziderman, “When Was *Tekhelet* Concealed?,” *Badad: Ktav et le-‘inyanei torah u-madda* 3 (1996): 19–25 (Hebrew).

31. Herzog, “Hebrew Porphyrology,” 112.

32. *m. Menah.* 4:1; *The Mishnah: A New Translation*, trans. Jacob Neusner (New Haven, CT: Yale University Press, 1988), 740.

33. Milgrom, “Of Hems and Tassels,” 63.

34. *b. Menah.* 43a.

35. *b. Sanh.* 12a. Soncino translation with slight modifications.

36. *b. Sotah* 46b.

37. See “The Color Blue Against the Evil Eye,” in Chap. 3 below.

38. Jacob Neusner, *Sifre to Deuteronomy: An Analytical Translation* (Atlanta: Scholars Press, 1987), 2:440–441, with slight modifications.

39. See, e.g., the early medieval midrash *Bamidbar rabba*, sec. 17.

40. Two twenty-first-century rabbis have suggested that *tekhelet* was concealed because the rabbis of antiquity wanted to suppress the mystical practices associated with *tekhelet*. But this is a speculative theory without textual basis, as noted by one contemporary *tekhelet* activist. In support of the initial suggestion, see Yosef Green and Pinchas Kahn, “The Mystery, Meaning and Disappearance of the *Tekhelet*,” *Jewish Bible Quarterly* 39, no. 2 (2011): 108–114. For the objection, see Mois Navon, “On Concealing *Tekhelet* and Revealing the *Shekhinah*,” *Jewish Bible Quarterly* 41, no. 1 (2013): 44–46.

41. Dina Kraft, “Memo from Ramat Gan: Rediscovered, Ancient Color Is Reclaiming Israeli Interest,” *New York Times*, February 27, 2011: <https://www.nytimes.com/2011/02/28/world/middleeast/28blue.html> (accessed April 28, 2022).

42. Naama Sukenik et al., “Purple-Dyed Textiles from Wadi Murabba’at: Historical, Archaeological and Chemical Aspects,” *Archaeological Textiles Review* 55 (2013): 46–54.

43. See, e.g., Sidney M. Edelstein, “Preface,” in *The Royal Purple and the Biblical Blue*, ed. Spanier, 11–13.

44. On woad and indigo, see Jenny Balfour-Paul, *Indigo* (London: British Museum Press, 1998).

45. Naama Sukenik et al., “Early Evidence (Late 2nd Millennium BCE) of Plant-Based Dyeing of Textiles from Timna, Israel,” *PLOS ONE* 12, no. 6 (June 28, 2017): e0179014, <https://doi.org/10.1371/journal.pone.0179014> (accessed January 5, 2021). See, esp., 12–14.

46. Pastoureau, *Red*, 42.

47. *b. B. Metsi’a* 61b.

48. *b. Menah. 42b*.

49. Nathan of Rome, *He-’arukh* (Venice, 1553), 202a.

50. See “Reception and Rejection of Tekhelet by Orthodox Jews,” in Chap. 5 below.

51. See *b. Menah. 41b*, where *kala ilan* is included under *tsiv’onin*. However, it cannot be considered as white in the case of an all-tekhelet prayer shawl, probably because of the chances of fraud, whereas other colors are allowed.

52. *b. Pesah. 109a*.

53. *b. Ber. 20a*. See also *He-’arukh*, 120a, comparing a red costume to the red crest of a rooster.

54. *b. Nid. 61b*.

55. E.g., Yechiel Michel Tukachinsky, *‘Ir ha-kodesh ve-ha-mikdash* (Jerusalem: Salomon, 1970), 5:43–44. See also “Messianism and the Temple,” in Chap. 5 below.

56. Jenny Balfour-Paul, *Indigo in the Arab World* (Richmond: Curzon, 1997), 14.

57. *Ibid.*, 29, 76.

58. *Ibid.*, 75–77.

59. Shelomo Dov Goitein, *A Mediterranean Society: The Jewish Communities of the Arab World as Portrayed in the Documents of the Cairo Geniza* (Berkeley: University of California Press, 1967), 1:106–108; (1983), 4:164–177; Yedida Kalfon Stillman, “Female Attire of Medieval Egypt: According to the Trousseau Lists and Cognate Material from the Cairo Geniza” (Ph.D. diss., University of Pennsylvania, 1972), esp. the tables listed on xxviii; Ora Molad-Vaza, “Clothing in the Mediterranean Jewish Society as Reflected in the Documents of the Cairo Geniza: Between the Middle of the 10th Century and the Middle of the 13th Century” (Ph.D. diss., Tel Aviv University, 2010), 137–150 (Hebrew).

60. Goitein, *A Mediterranean Society*, 4:174.

61. See the references in Avriel Bar-Levav, “Magic in Jewish Ethical Literature,” *Tarbiz* 72 (2003): 408n114 (Hebrew).

62. Pastoureau, *Blue*, 21–23.

63. Arash Khazeni, *Sky Blue Stone: The Turquoise Trade in World History* (Berkeley: University of California Press, 2014).

64. Brenner, *Colour Terms in the Old Testament*, 166–167.

65. Exodus 28, 39.

66. David Kimḥi, *Sefer ha-shorashim* (Berlin: Bethge, 1847), 360 (see the entry עַיִן). Kimḥi uses the term ‘*ayin*’ (עַיִן), which also denotes “eye,” as the term for a hue. This is a

common denotation in medieval Hebrew. See Yaacov Klatzkin, *Otzar ha-munaḥim ha-filosofiyyim ve-antologia filosofit*, vol. 2, pt. 3 (Berlin: Eshkol, 1930), 130.

67. Zohar Amar, *Ha-ḥen she-ba-even: Avnei ha-ḥoshen ve-avanim tovoṭ ba-’olam ha-kadum* (Har-Bracha: Makhon Har-Bracha, 2017), 123–129.

68. Kimḥi, *Sefer ha-shorashim*, 176.

69. See R. Baḥye’s commentary to Exod. 24:10. R. Baḥye also mentioned the opinion of “Rabbi Avraham” that sapphire resembles tekhelet. He seems to be referring to Avraham Ibn Ezra, although Ibn Ezra makes no connection between sapphire and tekhelet in his commentaries. Instead, he appears to identify sapphire with a red hue similar to green (perhaps similar to rust), which is relatively congruent with Kimḥi’s interpretation. On this, see Ibn Ezra’s short commentary to Exod. 24:10. See also Scholem, “Colours and Their Symbolism in Jewish Tradition and Mysticism,” 99n35.

70. Klatzkin, *Otzar ha-munaḥim ha-filosofiyyim ve-antologia filosofit*, vol. 2, pt. 3, 110; Scholem, “Colours and Their Symbolism in Jewish Tradition and Mysticism,” 99–101; J. H. Chajes, “Spheres, *Sefirot*, and the Imaginal Astronomical Discourse of Classical Kabbalah,” *Harvard Theological Review* 113 (2020): 253–254.

71. Maimonides, *Guide to the Perplexed*, 1:28.

72. Baḥye commentary on Exod. 28:15.

73. Gad Freudenthal and Jean-Marc Mandosio, “Old French into Hebrew in Twelfth-Century Tsarfat: Medieval Hebrew Versions of Marbode’s Lapidary,” *Aleph* 14 (2014): 110–125.

74. Berakhya ben Natronai ha-Nakdan, *Sefer ko’ah ba-avanim* (On the virtue of the stones), trans. Gerrit Bos and Julia Zwink (Leiden: Brill, 2010).

75. *Ibid.*, 54–57.

76. Fawzi Sweha, “Kohl Along History in Medicine and Cosmetics,” *History of Science and Medicine* 17, no. 2 (1982): 182–183; Andrew D. Hardy et al., “Egyptian Eye Cosmetics (‘Kohls’): Past and Present,” in *Physical Techniques in the Study of Art, Archaeology and Cultural Heritage*, ed. David Bradley and Dudley Creagh (Amsterdam: Elsevier, 2006), 1:173–203; David A. Scott, “A Review of Ancient Egyptian Pigments and Cosmetics,” *Studies in Conservation* 61, no. 4 (2016): 185–202.

77. E.g., Rashi’s commentary on *b. Naz.* 59a.

78. On *nofekh*, see Amar, *Ha-ḥen she-ba-even*, 119–123.

79. On *pukh*, see *ibid.*, 161–162.

80. Isa. 1:18.

81. *b. Hul.* 89a. Translation according to Herzog, “Hebrew Porphyrology,” 87, but biblical citations were modified from the JPS translation. The quotation is from tractate *Hullin*; the other two similar versions are *b. Sot.* 17a and *b. Menah.* 43b. Other versions will be discussed below and in Chap. 2. The basic, most comprehensive, discussion is (as usual, in the case of tekhelet) Herzog, “Hebrew Porphyrology,” 87–88.

82. E.g., the thirteenth-century linguist and commentator Kimḥi defines *tekhelet* as *blau* or *blav*. See Kimḥi, *Sefer ha-shorashim*, 410–411; Saverio Campanini, “Color azurei oscurissimi: Sfumature cabbalistiche in Azriel di Gerona e Flavio Mitridate,” *Itinera* 19 (2020): 67–68.

83. *y. Ber.* 1:2. Translation according to Jacob Neusner, ed., *The Talmud of the Land of Israel: A Preliminary Translation and Explanation*, vol. 1: *Berakhot*, trans. Tzvee Zahavy (Chicago: University of Chicago Press, 1989), 31.

84. *Entsiklopedia talmudit* (Jerusalem: Yad Harav Herzog, 2002), 25:95–99.

85. In Hebrew, *shema* means “hear” and refers to the prayer whose center is the declaration “Hear, O Israel: The Lord our God, the Lord is one.”

86. *m. Ber.* 1:2; Jacob Neusner, *The Mishnah: A New Translation* (New Haven, CT: Yale University Press, 1988), 3.

87. See the entry *yarok* in *Entsiklopedia talmudit*, 25:95–99.

88. Notably, this discussion is possible only under the assumption that the rabbis agreed on the appearance of tekhelet and disagreed only on the color to be compared with tekhelet.

89. Rashi commentary on *b. Ber.* 9b, 57b.

90. Bruria Admoni, “Ha-tseva’im bi-leshono shel rashi be-feirusho al ha-mikra” (master’s thesis, Bar-Ilan University, 1998), 65.

91. Herzog, “Hebrew Porphyrology,” 97. Herzog, who also brought R. Moshe ha-Darshan’s interpretation as Rashi’s, wrote that Rashi was inconsistent.

92. See his commentary to *b. Hul.* 47b. See also Moshe Katan, *Otsar le’azei rashi* (Tel Aviv: Gitler, 1996), 2:156 (no. 2110). The context of this reference is a discussion of the possible colors of a lung of an animal and under what conditions it is considered kosher.

93. *m. Suk.* 3:6; *b. Suk.* 31b.

94. A rabbinic criterion for the purity of a woman was the hue of the stains she observed, a halakhic criterion termed *mar’ot ha-damim* (lit., “the appearances of bloods”). The Mishnah introduces five hues associated with menstruation: black and four shades of red, followed by a strange statement indicating a debate regarding green—*yarok*—blood (*m. Nid.* 2:6–7). On the complexities of these colors, see Shai Secunda, *The Talmud’s Red Fence: Menstrual Impurity and Difference in Babylonian Judaism and Its Sasanian Context* (New York: Oxford University Press, 2020), 85–96.

95. Mordechai on laws of *Niddah*, sec. 735, included, e.g., in *Talmud bavli*, tractate *Niddah* (Jerusalem: Masoret ha-Shas, 2006).

96. This opinion appears at the end of Rashi’s commentary to Numbers 15, the chapter including the commandment of the tsitsit. On Moshe ha-Darshan, see Hananel Mack, *Misodo shel moshe ha-darshan* (Jerusalem: Mosad Bialik, 2010); Ram Ben-Shalom, *The Jews of Provence and Languedoc* (forthcoming).

97. Bruria Admoni, who researched the color terms of Rashi in his commentary on the Bible, referred to that black option as Rashi’s opinion beside the green option. Hence, she had to harmonize between the two options: Admoni, “Ha-tseva’im bi-leshono shel rashi be-feirusho al ha-mikra,” 62n7.

98. See “Tekhelet Within the System of the *Sefirot*: Between Judgment and Mercy,” in Chap. 2 below.

99. Ibn Ezra used the word *‘ayin* in the Hebrew original as referring to “appearance” or “color,” as is common in medieval Hebrew. See n. 66 above.

100. *Ibn Ezra’s Commentary on Pentateuch: Exodus (Shemot)*, trans. H. Norman Strickman and Arthur M. Silber (New York: Menorah, 1996), 533.

101. By basing himself “on the sages of the Talmud,” Ibn Ezra was probably referring to the likening of tekhelet to grass by Rabbi Meir, or the mishnaic opinion that tekhelet resembles *karti*.

102. Yaacov Klatzkin, *Otsar ha-munahim ba-filosofiyim ve-antologia filosofit*, vol. 2, pt. 4 (Berlin: Eshkol, 1933), 197–202. I further elaborate on this motif of association between tekhelet and *takhlit* in “Tekhelet Within the System of the *Sefirot*: Between Complexity and Nothingness,” in Chap. 2 below.

103. Shulamit Elitsur, *Shirat ha-hol ha-ivrit be-sefarad ha-muslemit* (Tel Aviv: Open University Press, 2004), 1:226–227.
104. *Ibid.*, 226–228.
105. Maimonides, *Mishneh torah*, *Hilkhot Tsitsit* 2:1. Translation follows (with changes such as using the term *tekhelet* itself rather than a translation) *The Code of Maimonides (Mishneh torah)*, bk. 2: *The Book of Love*, trans. Menachem Kellner (New Haven, CT: Yale University Press, 2004), 114.
106. Zohar Amar, “The Color of Tekhelet According to Maimonides,” *Hama’yan* 52, no. 2 (2011): 77–87 (Hebrew), esp. 86.
107. See “The Fight Between the Squid and the Snail,” in Chap. 4 below.
108. Eliezer ben Yoel Halevi, *Sefer ra’avyah* (Kraków: Fischer and Deutscher, 1882), 3a.
109. See “What Is the Hue of Tekhelet? Modern Debates,” in Chap. 4 below.
110. Brent Berlin and Paul Kay, *Basic Color Terms: Their Universality and Evolution* (Berkeley: University of California Press, 1969).
111. E.g., Brenner, *Colour Terms in the Old Testament*, 13.
112. E.g., Bulakh, “Basic Color Terms of Biblical Hebrew in Diachronic Aspect,” 183.
113. Elon Gilad, “Word of the Day/Kakhol: From Ancient Eyeliner to Blue,” *Haaretz* (Eng. ed.), March 11, 2014, <https://www.haaretz.com/word-of-the-day-kakhol-1.5331764> (accessed December 1, 2020); *idem*, “How Did the Different Colors Get Their Names?” *Haaretz*, December 20, 2014 (Hebrew), <https://www.haaretz.co.il/magazine/the-edge/premium-1.2514304> (accessed December 1, 2020).
114. *Hazewi*, June 3, 1887: 51 (p. 3 of that issue).

CHAPTER 2

1. *b. Hul.* 89a.

2. For a discussion of this quotation, see “Was Tekhelet Blue?,” in Chap. 1 above. For discussions from the perspective of mysticism, see Ben-Zion Bokser, “The Thread of Blue,” *Proceedings of the American Academy for Jewish Research* 31 (1963): 3–12; Gershom Scholem, “Colours and Their Symbolism in Jewish Tradition and Mysticism,” *Diogenes* 108 (1979): 90; David J. Halperin, *The Faces of the Chariot: Early Jewish Responses to Ezekiel’s Vision* (Tübingen: Mohr [Siebeck], 1988), 217–220.

3. After Scholem’s famous essay on colors in Judaism, few studies have been dedicated to the role of colors in Jewish mysticism. Among them are Moshe Idel, “Kabbalistic Prayer and Colors,” in *Approaches to Judaism in Medieval Times*, ed. David R. Blumenthal (Atlanta: Scholars Press, 1988), 3:17–27; Moshe Idel, “Kavvanah and Colors: A Neglected Kabbalistic Responsum,” in *Minḥab le-sara: Mehkarim be-filosofiyah yehudit u-ve-kabbalah mugashim le-professor sara o. heller wilenski*, ed. Moshe Idel, Devorah Dimant, and Shalom Rosenberg (Jerusalem: Magnes, 1994; Hebrew), 1–14; Moshe Idel, “Visualization of Colors, 1: David ben Yehudah he-Ḥasid’s Kabbalistic Diagram,” *Ars Judaica* 11 (2015): 31–54; *idem*, “Visualization of Colors, 2: Implications of David ben Yehudah he-Ḥasid’s Diagram for the History of Kabbalah,” *Ars Judaica* 12 (2016): 39–51; Natasha Esther Zabolotnaya, “Cosmology and Color Symbolism in R. Eleazar of Worms,” *Kabbalah* 12 (2004): 45–80; Saverio Campanini, “Color azurei oscurissimi: Sfumature cabbalistiche in Azriel di Gerona e Flavio Mitridate,” *Itinera* 19 (2020): 54–70.

4. While I referred to medieval sources in Chap. 1, these were primarily commentaries on the Bible and the Talmud that were consulted in order to understand the basic vocabulary used to describe the color blue.

5. On color theories in the Classical world, see, e.g., John Gage, *Color and Culture: Practice and Meaning from Antiquity to Abstraction* (Berkeley: University of California Press, 1993), 11–27; Robert A. Crone, *A History of Color: The Evolution of Theories of Lights and Color* (Dordrecht: Kluwer, 1999), 3–16; A. Mark Smith, *From Sight to Light: The Passage from Ancient to Modern Optics* (Chicago: University of Chicago Press, 2015), 43–47.

6. On color theories in Islam and in Arab cultures, see, e.g., Alfred Morabia, “Lawn,” in *Encyclopaedia of Islam*, 2d ed., ed. P. Bearman et al., http://dx.doi.org/10.1163/1573-3912_islam_COM_0577 (accessed December 21, 2020); Eric Kirchner, “Color Theory and Color Order in Medieval Islam: A Review,” *Color Research and Application* 40, no. 1 (2015): 5–16.

7. *Sefer emunot ve-de’ot le-rabbi sa’adia gaon*, ed. David Kapah (Jerusalem: [n.p.], 1970), 85. Translation following Zabolotnaya, “Cosmology and Color Symbolism in R. Eleazar of Worms,” 66.

8. Morabia, “Lawn.”

9. Zabolotnaya, “Cosmology and Color Symbolism in R. Eleazar of Worms,” 66–70.

10. On concepts of three or four colors in Greek, Roman, and Arab texts, see Morabia, “Lawn.”

11. On the colors of the rainbow in Western culture, see, e.g., Gage, *Color and Culture*, 93–115. On the colors of the rainbow in Judaism, see Scholem, “Colours and Their Symbolism,” pt. 1, 88–90.

12. Resianne Fontaine, “Red and Yellow, Blue and Green: The Colours of the Rainbow According to Medieval Hebrew and Arabic Scientific Texts,” in *‘Ever and ‘Arav: Contacts Between Arabic Literature and Jewish Literature in the Middle Ages and Modern Times*, ed. Yosef Tobi (Tel Aviv: Afikim, 1998), vii–xxv; Samuel Ibn Tibbon, *Otot ha-Shamayim: Samuel Ibn Tibbon’s Hebrew Version of Aristotle’s Meteorology*, ed. and trans. Resianne Fontaine (Leiden: Brill, 1995).

13. Fontaine, “Red and Yellow, Blue and Green,” xxiv–xxv.

14. Azriel of Gerona, *Sefer beur eser sefirot* (Jerusalem: Makhon Pithei Megadim, 1997), 34. Translation based on Elliot Wolfson, *Through a Speculum That Shines* (Princeton NJ: Princeton University Press, 1994), 299 (although I prefer to translate *takblit* as “end” rather than “completion”). For another translation, see Joseph Dan and Ronald C. Kiener, *The Early Kabbalah* (New York: Paulist Press, 1986), 94 (but the word *takblit* is inaccurately translated there as “essence”). On this text attributed to Rabbi Azriel, see also Scholem, “Colours and Their Symbolism,” pt. 1, 105–106. On *tekhelet* as *takblit* among medieval writers, see the section “Tekhelet Within the System of the *Sefirot*: Between Complexity and Nothingness” below. For a discussion of translations of this text to Latin, see Campanini, “Color azurei oscurissimi.”

15. Ms. Munich, Bavarian State Library, Cod. Hebr. 305, 59b–62b. The text was discussed by Scholem, “Colours and Their Symbolism,” 71–72; Nicolas Séd, “Le Mystère des couleurs de J. Gikatilla,” *Chrysopoeia* 1 (1987): 3–20. Notably, the system of colors in Gikatilla’s text differs from *Sha’ar ha-sho’el*.

16. Gershom Scholem distinguished between “sensory” and “visionary” ways of seeing, referring to the real versus the imaginary (Scholem, “Colours and Their Symbolism,” pt. 1, 90). Elliot Wolfson made a similar distinction between “veridical” and “docetic” experiences

(Wolfson, *Through a Speculum*, throughout the book; see, esp., the definitions of these terms on p. 222).

17. Wolfson, *Through a Speculum*, 380–383.

18. Moshe Idel, *Kabbalah: New Perspectives* (New Haven, CT: Yale University Press, 1988), 104–111.

19. Ibid., 104. Important references to the visualization of colors in prayer can be found in the writings of the Spanish kabbalist David ben Yehudah he-Ḥasid (thirteenth–fourteenth centuries), who introduced an esoteric kabbalistic tradition of visualizing colors, spiritual elevation, and drawing down the divine influx (Idel, “Visualization of Colors, 1”; idem, “Visualization of Colors, 2”). Another medieval kabbalistic reference to colors can be found in the writings of the fourteenth-century kabbalist Yosef ben Shalom Ashkenazi, who introduced a technique associating the visualization of colors with the visualization of the letters of the Tetragrammaton, the divine name (Moshe Idel, *Golem: Jewish Magical and Mystical Traditions on the Artificial Anthropoid* [Albany: SUNY Press, 1990], 121–124).

20. Idel, *Kabbalah: New Perspectives*, 111.

21. Jonathan Garb, “The Kabbalah of Rabbi Joseph Ibn Sayyah as a Source for the Understanding of Safedian Kabbalah,” *Kabbalah* 4 (1999): 295–297 (Hebrew).

22. Cosmogonic texts introduce significant difficulties regarding the role of colors. Apparently, they cannot be part of the mystic’s personal experience. That problematic, which is general and not necessarily dependent on colors, will not be discussed here.

23. b. *Ḥag.* 12a; A. Peter Hayman, *Sefer Yešira: Edition, Translation and Text-Critical Commentary* (Tübingen: Mohr Siebeck, 2004), 85 (par. 13). See also Joseph Dan, *Toldot torat ba-sod ba-‘irrit: Ha-et ha-atika* (Jerusalem: Zalman Shazar, 2008), 2:428–429.

24. Gershom Scholem, *Origins of the Kabbalah* (Princeton, NJ: Princeton University Press, 1987), 331.

25. For attempts to explicate the systems of colors in that work, see Scholem, *Origins of the Kabbalah*, 334–335; Menachem Kallus, *Two Mid-13th-Century Kabbalistic Texts from the ‘Iyun Circle’ with Commentaries* (Jerusalem: [n.p.], 1985), 19–25; Mark Verman, *The Books of Contemplation: Medieval Jewish Mystical Sources* (Albany: SUNY Press, 1992), 149–150; Oded Porat, “Tikkun ha-ma’agal”: *Yesodot ha-havaya ve-ha-yetsira ha-leshonit be-sefer ma’ayan ha-ḥokhmah u-be-ḥiburim ha-kerovim elav* (Los Angeles: Cherub, 2019), 463–475; for the edition of Oded Porat of *Ma’ayan ha-ḥokhmah*, see 1–10.

26. Porat, *Tikkun ha-ma’agal*, 464. Such inconsistency characterized the commentaries on *Meteorology*, mentioned above.

27. Verman, *The Books of Contemplation*, 57, 58–59 [Porat ed., §35, §45].

28. Ibid., 57 [Porat ed., §35], with a slight edit. This text mentions red as a color seen in the darkness. In the other text describing the darkness, however, red is not mentioned (Verman, ibid., 59–60 [Porat ed., §45]).

29. Porat, *Tikkun ha-ma’agal*, 465.

30. Verman, *The Books of Contemplation*, 60 [Porat ed., §51].

31. Porat, *Tikkun ha-ma’agal*, 468, states that tekhelet is the deepest of all colors.

32. Kallus, *Two Mid-13th-Century Kabbalistic Texts*, 19–20, 24–25. In a private communication, Oded Porat expressed his opinion that tekhelet is not secondary at any stage but precedes *yarok* in the stage of darkness. Needless to say, his opinion strengthens my point regarding the prominence of tekhelet.

33. Idel, “Visualization of Colors, 1,” 34.

34. See n. 14 above.

35. On this similarity, see “Was Tekhelet Blue?” in Chap. 1 above.
36. E.g., statements by the fourteenth-century kabbalist Yosef ben Shalom Ashkenazi that the appearance of *hokhmah* is tekhelet: Moshe Hallamish, *Peirush le-farashat bereshit le-r. yosef ben shalom ashkenazi* (Jerusalem: Magnes, 1984), 133; Idel, “Visualization of Colors, 1,” 34.
37. I would like to thank Naama ben-Shachar for sharing with me manuscripts analyzed in a project that she has conducted with Tzahi Weiss on kabbalistic interpretations of the system of the *sefirot*.
38. Ms. Paris, National Library, 817, 62b (ms. from 1463). See also similar statements in other mss.: Ms. Jerusalem, Heb. 2°541, 31b; Ms. Oxford Bodl., Opp. 487, 102b; Ms. Vatican, Biblioteca Apostolica 171, 133b–134a; Ms. Paris, Rabbinical School 108, 103a; Ms. New York, JTS, 8558, 1a; Ms. Vienna, Austrian National Library, Cod. Hebr. 107, 17b.
39. E.g., Ms. Florence, Laurentian Library, Plut. 44.14, 125a. The first paragraph of *Sefer yetzirah* concludes with the statement that God created his universe using three types of things that can be *sefer*, *spar* [number], and *sipur*, or *sefer*, *sefer*, and *sefer*. These are *sefer*, *spar* [number], and *sipur*, or *sefer*, *sefer*, and *sefer*. See Hayman, *Sefer Yetzira*, 59 (par. 1).
40. Ms. Milano, Ambrosian Library, S 13 Sup, 11b; Ms. Parma, Palatina Library, Cod. Parm. 2704, 89b–90a.
41. *Sefer ha-bahir*, ed. Daniel Abrams (Los Angeles: Cherub, 1994), 155 (par. 62).
42. *The Book Bahir*, 159 (par. 65); *The Bahir*, trans. Aryeh Kaplan (New York: Samuel Weiser, 1979), 35–36 (par. 96), with modifications.
43. Notably, the text of the *Bahir* does not present *likening* between phenomena but rather identification: earth is presented as the Throne of Glory, the precious stone (which is probably sapphire), and the Sea of Wisdom. Hence, they all seem to be symbols of the same entity, which seems to be the *sefirah*.
44. Ms. Munich, Bavarian State Library, Cod. hebr. 305, 61b.
45. This text will be discussed in detail in “A Kabbalistic Myth About the Blue Cover of the *Shekkinah*,” in Chap. 3 below.
46. Notably, other *sefirot* gather the influx coming from above, such as the ninth *sefirah*, *yesod*. The crucial difference is that *yesod* does not gather or accumulate the influx; it is merely a channel through which the influx goes from the upper *sefirot* to *malkhut*. It is *malkhut* that accumulates the influx before handing it over to the world, if it merits it.
47. Ramban (Nahmanides), commentary on Num. 15:31.
48. See “Was Tekhelet Blue?” in Chap. 1 above.
49. The following section features a discussion from one of these texts.
50. In Chap. 1, we mentioned the wordplay between *tekhelet* and *takhlit* when we noted Ibn Ezra’s description of tekhelet, the final color, having a black hue, as all colors turn black. See “Was Tekhelet Blue?” in Chap. 1 above.
51. Leonardo da Vinci, *A Treatise of Painting*, trans. John Francis Rigaud (London: J. B. Nichols, 1835), 132.
52. See n. 14 above.
53. Cordovero, *Sha’ar ha-gevanim* (Kraków, 1591), chap. 2.
54. See n. 15 above.
55. This can be understood from Maimonides’s interpretation of the term *livnat ha-sappir* (see “Blue Minerals, Stones, and Gems,” in Chap. 1 above), as well as from Abulafia’s understanding of the appearance of tekhelet as *zabarurit* (see section “Seeing Tekhelet: Gazing at the Candle Flame” below).

56. See n. 14 above.

57. E.g., Zohar 2:229a. On the compound multicolored character of tekhelet, *argaman*, and green, see Asi Farber-Ginat, “Tefisat ha-merkavah betorat ha-sod ba-me’a ha-13: ‘Sod ha-egoz ve-toldotav’ [“The Concept of the Merkavah in Thirteenth-Century Jewish Esotericism: ‘Sod Ha-Egoz’ and Its Development,” Ph.D. diss., Hebrew University, 1986], 471–479.

58. Ms. Munich, Bavarian State Library, Cod. hebr. 305, 61b.

59. Jacob Neusner, *Sifre to Numbers: An American Translation and Explanation* (Atlanta: Scholars Press, 1986), 2:178.

60. See, e.g., Gen. 43:14.

61. Zohar 2:135a.

62. For presenting God’s forces as a devouring fire, see, e.g., “For the Lord your God is a consuming fire” (Deut. 4:24).

63. Zohar 3:33a (Ra’aya Mehemna).

64. For other references to tekhelet in the Zohar as fire, see Zohar 1:50b–51b, 2:226b, 3:29b (Ra’aya Mehemna).

65. *b. Ber.* 57b.

66. *m. Ber.* 1:2. The Zoharic text alludes to the halakhic criterion for the timing of the morning prayer—the time when it is possible to distinguish between tekhelet and other colors. See “Was Tekhelet Blue?,” in Chap. 1 above.

67. The phrase “the right above arouses” refers to the grace power of the Godhead, which is associated with the right side, whereas the forces of evil are associated with the left side. Adding grace to judgment results in an attitude of mercy.

68. Zohar 2:138b–139a; *The Zohar*, Pritzker ed., trans. Daniel C. Matt (Stanford, CA: Stanford University Press, 2009): 5:277–279, with modifications. Although Matt, the translator and commentator of this Zoharic text, notes that the text reflects the custom of winding the tsitsit (*ibid.*, 278), I will focus on the aspect of color itself.

69. See the interpretation of Matt, which assumes that tekhelet is a symbol of the *shekbinah* (*ibid.*, 279).

70. Zohar 2:149b; Pritzker ed., 5:369.

71. See n. 68 above.

72. *Elohim* is one of the names of God in the Hebrew Bible. In kabbalistic tradition, *Elohim* represents divine judgment.

73. *The Zohar*, Pritzker ed., 5:371.

74. The similarity of tekhelet to reddish hues in the first phase goes in tandem with its common identification with the purple colors of purpura.

75. Zohar 3:226b (Ra’aya Mehemna).

76. See, e.g., Gershom Scholem, *On the Mystical Shape of the Godhead: Basic Concepts in the Kabbalah* (New York: Schocken, 1991), 140–196, esp. 189–190.

77. Wolfson, *Through a Speculum*, 119–124.

78. See n. 2 above.

79. Neusner, *Sifre to Numbers*, 2:179.

80. James R. Davila, *Hekhalot Literature in Translation: Major Texts of Merkavah Mysticism* (Leiden: Brill, 2013), 224. I changed the translation “purple-blue fabric” back to the Hebrew original, *tekhelet*. For the Hebrew original, see *Hekhalot zutarti*, ed. Rachel Elior (Jerusalem: Hebrew University, 1982), 29; Peter Schäfer, *Synopse zur Hekhalot-Literatur* (Tübingen: Mohr [Siebeck], 1981), §371.

81. While it is possible that the Hekhalot text used the tannaitic tradition, it could be the other way around, and it could also be that both texts used an earlier tradition.

82. *Midrash tehilim* on Psalms 24, Buber ed. (Vilna, 1892), 2d pagination, 209 [Hebrew pagination, 105a].

83. *Numbers Rabba*, 4:13 [*Midrash Rabba*, ed. H. Freedman and Maurice Simon (London: Soncino, 1939), 1:110–111], with slight modifications.

84. See n. 68 above.

85. Moshe Idel, “Some Forlorn Writings of a Forgotten Ashkenazi Prophet: R. Nehemiah ben Shlomo ha-Navi,” *Jewish Quarterly Review* 95 (2005): 183–196.

86. Moshe Idel, “R. Neḥemiah’s Commentary on the Piyyut ‘*El na le-‘Olam Tu’aratz*,’” *Moresbet Israel* 2 (2005): 16 (Hebrew).

87. *Ibid.*, 25–35.

88. However, Idel also speculated from other references attributed to Neḥemiah that tekhelet might not have been the Throne itself but rather its cover.

89. In Wolfson’s terminology, a “veridical experience.”

90. Idel, “R. Neḥemiah’s Commentary,” 35–36.

91. This assumption, too, is based on Wolfson, *Through a Speculum*, 68–69.

92. *Sefer yetsirah* [*Kitab al-Mabadi*] ‘*im peirush hagaon rabenu sa’adia ben rabbi yosef fa-yumi*, trans. from Arabic to Hebrew by Rabbi Yosef Kapah (Jerusalem: Committee for the Publication of the Books by Sa’adia Gaon, 1972), 125–126.

93. See “Blue Minerals, Stones, and Gems,” in Chap. 1 above.

94. Zabolotnaya, “Cosmology and Color Symbolism in R. Eleazar of Worms,” 63.

95. This does not mean that it was Rabbi Eleazar who made the change. It is probable that it was done by an anonymous translator and that Rabbi Eleazar received that translation.

96. Zabolotnaya, “Cosmology and Color Symbolism in R. Eleazar of Worms,” 63–67.

97. *Ibid.*, 66–67. For Sa’adia’s text, see n. 7 above.

98. Farber-Ginat, “Tefisat ha-merkavah,” 259–302.

99. See “Was Tekhelet Blue?,” in Chap. 1 above.

100. On the dual role of those intermediary components (although not necessarily associated with tekhelet), see Farber-Ginat, “Tefisat ha-merkavah,” 470–475.

101. *Ibid.*, 470–479.

102. Haviva Pedayah, *Ha-mar’eh ve-ba-dibur: Iyyun be-tiv’ah shel bavayat ha-bitgalut ba-mistorin ba-yebudi* [Vision and speech: Models of revelatory experience in Jewish mysticism] (Los Angeles: Cherub, 2002), 237–255.

103. Zohar 1:50b–51b. For Scholem’s discussion, see Scholem, “Colours and Their Symbolism,” 73–76. This teaching was also included in the famous anthology of Fischel Lachower and Isaiah Tishby, *The Wisdom of the Zohar* (Oxford: Littman Library of Jewish Civilization, 1989), 1:319–322.

104. Zohar 1:50b, Pritzker ed., 1:282–283.

105. Abraham Abulafia, *Sefer ha-ḥeshek*, ed. Amnon Gross (Jerusalem: [n.p.], 2002), 71–72.

106. Moshe Idel, *The Mystical Experience in Abraham Abulafia*, trans. Jonathan Chipman (Albany: SUNY Press, 1988), 4. On *Sefer ha-ḥeshek*, see Moshe Idel, “Kitvei rabbi avraham abulafia u-mishnato” [Abraham Abulafia’s works and doctrine] (Ph.D. diss., Hebrew University, 1976), 1:18–19.

107. Idel, *The Mystical Experience in Abraham Abulafia*, 49.

108. Abulafia's text was noted by the twentieth-century kabbalist Aryeh Kaplan, *Meditation and Kabbalah* (Boston: Weiser, 1982), 79.
109. See "Mollusk-Based Blue," in Chap. 1 above.
110. Ms. Munich, Bavarian State Library, Cod. hebr. 56, 181a–181b. I would like to thank Naama Ben-Shachar for bringing this manuscript to my attention.
111. Zohar 2:152a–b, 3:174b–175a (Ra'aya Mehemna). The whip is also mentioned in the manuscript mentioned in n. 110 above.
112. Ms. Vatican, ebr. 597, 113a, https://digi.vatlib.it/view/MSS_Vat.ebr.597 (accessed December 28, 2020). On this manuscript and image, see Benjamin Richler, ed., *Hebrew Manuscripts in the Vatican Library: Catalogue* (Vatican City: Biblioteca Apostolica Vaticana, 2008), 493. I would like to thank Ester Muchawsky-Schnapper for drawing my attention to this image.
113. Michel Pastoureau, *Blue: The History of a Color* (Princeton, NJ: Princeton University Press, 2001), 49–83.
114. Peter Schäfer, "Daughter, Sister, Bride, and Mother: Images of the Femininity of God in the Early Kabbala," *Journal of the American Academy of Religion* 68 (2000): 221–242; Arthur Green, "Shekhinah, the Virgin Mary, and the Song of Songs: Reflections on a Kabbalistic Symbol in Its Historical Context," *AJS Review* 26 (2002): 1–52. Other scholars, such as Daniel Abrams, Moshe Idel, and Yehuda Liebes, are skeptical of this theory.
115. I will discuss such texts in "A Kabbalistic Myth About the Blue Cover of the *Shekinah*," in Chap. 3 below.
116. This suggestion goes in tandem with Idel, "Kabbalistic Prayer and Colors," 21.
117. Wolfson, *Through a Speculum*, 336–345.
118. See "Was Tekhelet Blue?," in Chap. 1 above.
119. Oxford Bodleian Library, MS Hunt. Add. E. Neubauer MS 2429. This image has already been published in J. H. Chajes, "The Kabbalistic Trees of Gershom Scholem," *Ars Judaica* 16 (2020): 126. I would like to thank Prof. Chajes, the director of the Ilanot project, <http://www.ilanot.org> (accessed July 16, 2021), for bringing this image to my attention. On this diagram, see also Gabrielle Sed-Rajna, "Un Diagramme kabbalistique de la bibliothèque de Gilles de Viterbe," in *Hommage à Georges Vajda: Études d'histoire et de pensée juives*, ed. G. Nahon and C. Touati (Louvain: Peeters, 1980), 365–376; Giulio Busi, "Beyond the Burden of Idealism: For a New Appreciation of the Visual Lore in the Kabbalah," in *Kabbalah and Modernity*, ed. Boaz Huss, Marco Pasi, and Kocku von Stuckrad (Leiden: Brill, 2010), 34.
120. Kaplan, *Meditation and Kabbalah*, 86; idem, *Jewish Meditation: A Practical Guide* (New York: Schocken, 1985).
121. Natan Ophir, "Tekhelet: Halakhah, Color and Meditation," *Badad: Ktav et le-'inyanei torah u-madda* 17 (2006): 29–49 (Hebrew); For the list of meditation topics taught by Ophir, see <http://jewishmeditation.org.il/english/workshops> (accessed December, 28, 2020). As part of my research, I attended a session titled "Secrets of Colors and Tekhelet Visualization," on March 12, 2016, which included practicing the visualization.

CHAPTER 3

1. *Segulot raboteinu*, ed. Ishay Mazlomian (Holon: [n.p.], 2014), 410–411.
2. This chapter emerged from Gadi Sagiv, "Dazzling Blue: Color Symbolism, Kabbalistic Myth, and the Evil Eye in Judaism," *Numen* 64 (2017): 183–208. While the article discussed the role of the kabbalistic symbolism of the color blue in customs to ward off the evil eye,

this chapter is more focused on Jewish dress in the early modern period and takes a broader view, conveying Jewish identity vis-à-vis color in both Muslim and Christian contexts.

3. Roy Osborne, *Sicily Herald and the Blazon of Colours* (Raleigh, NC: Lulu, 2015), 6. See also idem, *Books on Colour 1495–2015: History and Bibliography* (Raleigh, NC: Lulu, 2020); Tawrin Baker et al., introduction, *Early Modern Color Worlds* (Leiden: Brill, 2015), 1–19.

4. See, e.g., Allan Chapman, *England's Leonardo: Robert Hooke and the Seventeenth-Century Scientific Revolution* (Bristol: Institute of Physics Publishing, 2005), 185–196.

5. On the discourse on magic in kabbalah in the early modern period, see Moshe Idel, “Jewish Magic from the Renaissance Period to Early Hasidism,” in *Religion, Science, and Magic: In Concert and in Conflict*, ed. Jacob Neusner, Ernest S. Frerichs, and Paul Virgil McCracken Flesher (New York: Oxford University Press, 1989), 82–117.

6. See, e.g., Raymond L. Lee, “American Cochineal in European Commerce, 1526–1625,” *Journal of Modern History* 23, no. 3 (1951): 205–224.

7. Francesca Trivellato, *The Familiarity of Strangers: The Sephardic Diaspora, Livorno, and Cross-Cultural Trade in the Early Modern Period* (New Haven, CT: Yale University Press, 2009), 39, 105, 203. On indigo and the Jews, see Chap. 1 above.

8. See, e.g., Alfred Rubens, *A History of Jewish Costume* (London: Vallentine Mitchell, 1967), 41; Esther Juhasz, ed., *The Jewish Wardrobe: From the Collection of the Israel Museum, Jerusalem* (Milan: 5 Continents, 2012), 19; Surayia Faroghi, “Introduction, or Why and How One Might Want to Study Ottoman Clothes,” in *Ottoman Costumes: From Textile to Identity*, ed. idem and Christoph K. Neumann (Istanbul: EREN, 2004), 25–26; Yaron Ben-Nach, *Jews in the Realm of the Sultans: Ottoman Jewish Society in The Seventeenth Century* (Tübingen: Mohr Siebeck, 2008), 48–51, 106.

9. Faroghi, “Introduction,” 25.

10. Norman A. Stillman, *The Jews of Arab Lands: A History and Source Book* (Philadelphia: Jewish Publication Society, 1979), 318.

11. Abraham Galanté, *Documents officiels turcs concernant les Juifs de Turquie* (Istanbul, 1931), doc. 6:119. Referred by Esther Juhasz, ed., *Yehudei sefarad ba-imperia ba-ottomanit* (Jerusalem: Israel Museum, 1989), 166.

12. Rubens, *A History of Jewish Costume*, 40. The testimony is by George Sandys.

13. Ibid., 41. The testimony is by Jean de Thévenot.

14. Ibid., 44.

15. Juhasz, *Yehudei sefarad ba-imperia ba-ottomanit*, color plates.

16. On these issues, see the Introduction, above.

17. Pessah Shinar, “Some Remarks Regarding the Colours of Male Jewish Dress in North Africa and Their Arab-Islamic Context,” in idem, *Modern Islam in the Maghrib* (Jerusalem: Hebrew University, 2004), 381.

18. Ibid.

19. Stillman, *The Jews of Arab Lands*, 68–69; Heather J. Sharkey, *A History of Muslims, Christians, and Jews in the Middle East* (Cambridge: Cambridge University Press, 2017), 54.

20. Sharkey, *A History of Muslims*, 56.

21. Hadas Hirsch et al., “Clothing, Jewelry and Make-Up,” in *Encyclopedia of Jews in the Islamic World*, ed. Norman A. Stillman (consulted online, August 16, 2020).

22. Faroghi, “Introduction,” 25–26.

23. Of course, green is not the only color to which importance was attributed in Islam. On color in Islam, see Jonathan M. Bloom and Sheila S. Blair, eds., *And Diverse Are Their Hues: Color in Islamic Art and Culture* (New Haven, CT: Yale University Press, 2011).

24. Hirsch et al., “Clothing, Jewelry and Make-Up”; Juhasz, *The Jewish Wardrobe*, 19.
25. Rubens, *A History of Jewish Costume*, 41.
26. Jacob Barnai, “The Jerusalem Regulations in the 18th Century as a Source for the Acquaintanceship of Society, Economy, and Daily Activity of the Jewish Community,” in *Perakim be-toldot yerushalayim be-resbit ha-tekufah ha-ottomanit*, ed. Amnon Cohen (Jerusalem: Yad Ben-Zvi, 1979), 283–287 (Hebrew).
27. Rubens, *A History of Jewish Costume*, 46.
28. Jacob Barnai, *Igrot hasidim me-erets yisrael* (Jerusalem: Yad Ben-Zvi, 1980), 39.
29. Gershom Scholem, *Sabbatai Ševi: The Mystical Messiah, 1626–1676* (Princeton, NJ: Princeton University Press, 1973), 241–242.
30. Ibid., 573, 595.
31. Ibid., 760.
32. Eric Silverman, *A Cultural History of Jewish Dress* (London: Bloomsbury, 2013), 39.
33. b. Ber. 20a; *Arukh ha-shalem*, ed. Hanokh Yehudah [Alexander] Kohut (Vienna, 1885), 4:315.
34. Eliyahu ha-Cohen, *Midrash talpiot* (Izmir, 1720), 1:46a. See also “Blue Minerals, Stones, and Gems,” in Chap. 1 above.
35. See “Tekhelet Within the System of the *Sefirot*: Between Judgment and Mercy,” in Chap. 2 above. See also “Red and Black Overshadow Blue in Early Modern Ashkenazic Jewry,” below.
36. Shai Secunda, *The Talmud’s Red Fence: Menstrual Impurity and Difference in Babylonian Judaism and Its Sasanian Context* (Oxford: Oxford University Press, 2020), 85–87.
37. Michel Pastoureau, *Black: The History of a Color* (Princeton, NJ: Princeton University Press, 2008), 135; Meir Kadosh, “Wearing Special Clothing, Especially Black, in the Days of Mourning,” in *Minhagei israel: Mekorot ve-toldot*, ed. Daniel Sperber (Jerusalem: Mosad Harav Kook, 2007), 8:204–244 (Hebrew).
38. Kadosh, “Wearing Special Clothing.”
39. See, e.g., “Blue Skies, Blue Walls, Blue Eyes,” *Eretz* magazine, September 9, 2014 (Hebrew).
40. The observation about Molkho’s fiancée is based on a private communication with Moti Benmelech, who wrote the biography *Shlomo molkho: Hayav u-moto shel mashiah ben yosef* (Jerusalem: Yad Ben-Zvi, 2017).
41. Solomon Schechter, “Safed in the Sixteenth Century: A City of Legists and Mystics,” in idem, *Studies in Judaism*, 2d ser. (Philadelphia: Jewish Publication Society, 1908), 202–285, 317–328; Yair Paz, “Holy Inhabitants of a Holy City: How Safed Became One of the Four Holy Cities of Eretz Israel in the 16th Century,” in *A Holy People: Jewish and Christian Perspectives on Religious Communal Identity*, ed. Marcel Poorthuis and Joshua Schwartz (Leiden: Brill, 2006), 237–260; Jonathan Garb, *A History of Kabbalah: From the Early Modern Period to the Present Day* (Cambridge: Cambridge University Press), 30–66.
42. Shmuel Avitzur, “Safed: Center of the Manufacture of Woven Woolens in the Fifteenth Century,” *Sefunot* 6 (1962): 41–69 (Hebrew).
43. E.g., a detailed responsum by Rabbi Moshe di Trani (a contemporaneous Safedian rabbi) confirms that the color green was the result of dyeing material first blue, and then yellow. See Avitzur, “Safed,” 60–61, referring to *She’elot u-teshuvot mabit* (Lvov: Fleker, Salat, Goldberg, and Stand, 1861), pt. 2, 2d pagination, 1b–2a (responsum 4).

44. Gershom Scholem, "Tradition and New Creation in the Ritual of the Kabbalists," in idem, *On the Kabbalah and Its Symbolism*, trans. Ralph Manheim (New York: Schocken, 1965), 118–157.

45. Gershom Scholem, *Major Trends in Jewish Mysticism* (New York: Schocken, 1946), 252.

46. Moshe Cordovero, *Pardes rimonim* (Kraków, 1591), chap. 10, 71a–73b. Notably, *Gate of Colors* is rather neglected in scholarship. E.g., Yosef Ben-Shlomo, Bracha Sack, and Zohar Raviv—three prominent scholars of Cordovero—did not address this treatise.

47. Idel, "Jewish Magic from the Renaissance Period to Early Hasidism." On Cordovero's color theory, see 91–92.

48. The tekhelet of *ḥokhmah* is characterized, as in medieval kabbalistic sources (see Chap. 2 above), as having the hue of sapphire, which is a hue receiving all other hues. According to Cordovero, while the tekhelet of *malkhut* is the end of all hues, the tekhelet of *ḥokhmah* is their origin. He uses tekhelet of *ḥokhmah* in the context of the next two *sefirot*: *binah* and *gedulah/besed*.

49. *Pardes rimonim*, "Gate of Colors," chap. 2.

50. Here Cordovero quotes the aforementioned Zoharic text about the moderating role of tekhelet on the second day of creation (see "Tekhelet Within the System of the *Sefirot*: Between Judgment and Mercy," in Chap. 2 above).

51. Here Cordovero quotes the aforementioned Zoharic text about tekhelet as a court of capital cases (ibid.). In that text, *yarok* was described as a result of a mix between the dark, nightly tekhelet and the bright yellow of the morning sun.

52. *Pardes rimonim*, "Gate of Colors," chaps. 3–4. For a discussion of the quoted texts in the Zohar, see "Tekhelet Within the System of the *Sefirot*: Between Judgment and Mercy," in Chap. 2 above.

53. *Pardes rimonim*, "Gate of Colors," chap. 2.

54. Haim Vital, *Pri etz ḥaim* (Koretz: Johann Anton Krieger, 1785), *Sha'ar ha-tsitsit*, 16b–20a.

55. Moshe Hallamish, *Hanbagot kabbaliot be-shabbat* (Jerusalem: Orḥot, 2006), 154–158.

56. See "Seeing Tekhelet: Envisioning Ezekiel's Chariot," in Chap. 2 above.

57. On the vulnerability of the feminine element in kabbalah, see Gershom Scholem, *On the Mystical Shape of the Godhead: Basic Concepts in the Kabbalah* (New York: Schocken, 1991), 189–190; on the evil forces in kabbalah, see 56–87.

58. Num. 4:5–6. I translated the term '*or tabash*' as "fine leather" in order to work around the difficulty of the term.

59. Translation is according to Daniel C. Matt, *The Zohar*, Pritzker ed. (Stanford, CA: Stanford University Press, 2016), 9:71–72, with slight modifications. For a brief discussion of this text in the context of magic rather than color, see Dorit Cohen-Alloro, "Magic and Sorcery in the Zohar" (Ph.D. diss., Hebrew University, 1989), 197–198 (Hebrew).

60. In this text, tekhelet is the external aspect of *malkhut*, whereas the internal aspect, which interacts with the upper *sefirot*, is white. This is different from Gikatilla's text discussed in Chap. 2, in which tekhelet is the internal aspect of *malkhut*, whereas the external aspect is black. Keeping in mind that Gikatilla was familiar with Zoharic traditions, this discrepancy shows that even in close mystical circles, there was no decisive understanding of the role of tekhelet.

61. See "Seeing Tekhelet: The Secret of the Tsitsit," in Chap. 2 above.

62. On the garment as a key motif to understanding the Zohar, see Dorit Cohen-Alloro, *Sod ha-malbush u-mar'eh ha-mal'akh be-sefer ha-zohar* (Jerusalem: Hebrew University, 1987), 7.

63. Scholem, *On the Kabbalah and Its Symbolism*, 122–135.

64. As noted above, in Cordovero's discussion of tekhelet in *Gate of Colors*, this teaching was one of only two that were quoted and analyzed at length. Additionally, Cordovero referred to this text on several occasions: Moshe Cordovero, *Sefer ha-zohar . . . im peirush or yakar* (Jerusalem: Ahuzat Israel, 1962–1995), 11:227, 14:50, 16:34. The last two texts refer to a teaching of Rabbi Ilai, to whom this Zoharic teaching is ascribed.

65. On this emphasis, see the previous section.

66. See “Tekhelet Within the System of the *Sefirot*: Between Judgment and Mercy,” in Chap. 2 above.

67. Cordovero explicitly identifies the tekhelet garment of malkhut with *kelipat nogah*, the softest of the *kelipot*, which is not among the forces of evil but rather positioned between the sacred and the evil. While such a characterization does not identify tekhelet with forces of evil, it enables Cordovero to explicitly place tekhelet outside the Godhead, external even to the angels of *malkhut*. See Cordovero, *Or yakar*, 14:94. This is not the only text about tekhelet in which Cordovero makes a more dramatic claim in *Or yakar* than in *Pardes rimoni*. On the interpretation of the Zoharic text in which tekhelet is characterized as a court of capital cases, see Cordovero, *Or yakar*, 9:78.

68. Even when Cordovero discusses the Zoharic teaching about the sea of tekhelet as an aspect of mercy that mitigates the red fire, he emphasizes its threatening motifs (*Or yakar*, 10:3–6).

69. Luria's commentary on *sifra detsni'uta* is considered one of the few that Luria wrote himself, early in the development of his kabbalah. See Yosef Avivi, *Kabbalat ha-ari* (Jerusalem: Machon Ben-Zvi, 2008), 2:858–859.

70. This text was discussed in Chap. 2 above and was also quoted by Cordovero. See n. 50 above.

71. The paraphrase appears in Haim Vital, *Sha'ar ma'amarei rashbi* (Jerusalem: [n.p.], 1988), 117–122.

72. Luria uses the term *tekhelet* both as a color term and as a name of *malkhut*. It is written explicitly that “tekhelet is malkhut”; *ibid.* 118.

73. Specifically, Luria interprets the Zoharic claim that the hue tekhelet emerged from red in the framework of the system of four layered worlds: *'atsilut*, *bri'a*, *yetsira*, and *'asia*. The hue of tekhelet was colorless in *'atsilut*; it changed to red in *bri'a* and to tekhelet in *yetsira*. On this doctrine of the worlds, see Scholem, *On the Kabbalah and Its Symbolism*, 73.

74. More accurately, it is *malkhut* of *'atsilut*, the upper world.

75. In his commentary *Zohar ha-raki'a*, the Lurianic kabbalist Yaacov Tsemah (d. 1667) corrected the formulation “spreads herself” (*mitpashetet*) and claimed that it should be “adorns herself” (*mitkasbetet*) by the seven supreme holy years. According to the first version, these years are seven entities below the *sefirot* (like the *heikhalot*), whereas according to the second version, these are the upper *sefirot*.

76. Vital, *Sha'ar ma'amarei rashbi*, 119.

77. About this principle, see Fischel Lachower and Isaiah Tishby, *The Wisdom of the Zohar* (Oxford: Oxford University Press, 1989), 2:453–454.

78. This is done in the text after the quotation above.

79. Vital, *Sha'ar ma'amarei rashbi*, 119.

80. Specifically, the entire interaction is in the world of *bri'a*. The mating couple is *yesod* and *malkhut* of the world of *bri'a*.

81. Maimonides, *Mishneh torah*, *Tsitsit*, 2:2.

82. James E. Latham, “Salt,” in *The Encyclopedia of Religion*, ed. M. Eliade (New York: Macmillan, 1987), 13:23–24.

83. Vital, *Sha'ar ma'amarei rasbbi*, 120.

84. *Genesis Rabba*, *Vayishlah*, 78:10; *Zohar* 1:175a, 3:202b. I will elaborate on this narrative below.

85. *b. Menah.* 43b. See also Wojciech Kosior, “‘Like a Throne of Glory’: The Apotropaic Potential of *Šiṣīt* in the Hebrew Bible and Early Rabbinic Literature,” *Review of Rabbinic Judaism* 21 (2018): 176–201.

86. E.g., Aref Abu-Rabia, “The Evil Eye and Cultural Beliefs Among the Bedouin Tribes of the Negev, Middle East,” *Folklore* 116, no. 3 (2005): 241–254.

87. The most updated study on the evil eye in Judaism is J. H. Chajes, “Re-Envisioning the Evil Eye: Magic, Optical Theory, and Modern Supernaturalism in Jewish Thought,” *European Journal of Jewish Studies* 15 (2020): 1–30. See also Joshua Trachtenberg, *Jewish Magic and Superstition: A Study in Folk Religion* (New York: Behrman's Jewish Book House, 1939); Rivka Ulmer, *The Evil Eye in the Bible and in Rabbinic Literature* (Hoboken: KTAV, 1994).

88. This definition of the evil eye is based on the *Merriam-Webster* dictionary, <https://www.merriam-webster.com/dictionary/evil%20eye> (accessed October 18, 2020).

89. See, e.g., Gustaf Dalman, *Arbeit und Sitte in Palästina*, vol. 5: *Webstoff, Spinnen, Weben, Kleidung* (Gütersloh: C. Bertelsmann, 1937), 340–347; Clarence Maloney, *The Evil Eye* (New York: Columbia University Press, 1976), 80, 108, 310–311; Jamal Karam Harfouche, “The Evil Eye and Infant Health in Lebanon,” in *The Evil Eye: A Casebook*, ed. Alan Dundes (New York: Garland, 1981), 95; Margaret M. Hardie, “The Evil Eye in Some Greek Villages of the Upper Haliakmon Valley in West Macedonia,” in *The Evil Eye: A Casebook*, 109–111; Alan Dundes, “Wet and Dry, the Evil Eye: An Essay in Indo-European and Semitic Worldview,” in *The Evil Eye: A Casebook*, 283–284.

90. Raphael Patai, “T'khelet—Blue,” in *On Jewish Folklore* (Detroit: Wayne State University Press, 1983), 86–95, esp. 87–88.

91. Louis C. Jones, “The Evil Eye Among European-Americans,” *Western Folklore* 10 (1951): 12.

92. Haim Hachohen, *Mekor ha'im* 2 (Piotrków, 1878), 1st pagination, 100.

93. *Ibid.*, 2d pagination, 55.

94. As mentioned several times above, there was no general agreement regarding the hue denoted by the color term *tekhelet*. See “Was Tekhelet Blue?,” in Chap. 1 above.

95. On *pukh* and these verses, see “Blue Minerals, Stones, and Gems,” in Chap. 1 above.

96. *Zohar* 2:240b; trans. Matt, *The Zohar*, 6:392, with slight modifications.

97. Cordovero, *Or yakar*, 11:227.

98. The earliest edition I found with this comment is the Livorno ed. from 1815 (2d pagination).

99. Abraham ben Isaiah Dayan, *Holekh tamim u-fo'el tsedek* (Livorno, 1850), 48b–50b.

100. *Zohar* 3:211b.

101. Yosef Haim, *Shut rav pe'alim* (Jerusalem: Frumkin, 1901), 2:58b.

102. *Ibid.*, 59a.

103. See “Mollusk-Based Blue,” in Chap. 1 above.

104. Yosef Haim, *Ben yehoyada* (Jerusalem: Frumkin, 1902), 4:38b.

105. Itzhak Alfia, *Siḥ itzḥak* (Jerusalem: Zuckerman, 1923), 32; Itzhak Peḥa, *Sefer 'oley 'ain* (Jerusalem: Ha-makhon le-ḥeker ha-refuah ba-halakhah, 1990), 213–214.

106. *m. Mid.* 1:3. The Mishnah mentions the red of *sikra*. The fifteenth-century commentator Ovadia Bartenura identifies *sikra* with red, but the word *sikreta* was identified with red earlier. See, e.g., Rashi's interpretation to *b. Giṭ.* 19a. Even if the thread was not red from the beginning, the blood spilled on the altar would have soon colored it red.

107. *t. Šabb.* 7:1, 8:4.

108. *Segulot raboteinu*, ed. Mazlomian, 134–136, 410–411.

109. See “Tekhelet Within the System of the *Sefirot*: Between Judgment and Mercy,” in Chap. 2 above. An example of that association, also mentioned in Chap. 2, is a midrash about tekhelet as the divine force that annihilated the Egyptians. According to this motif, it was tekhelet, which is associated with the sea, that drowned the Egyptians, thereby allowing the Israelites to go free.

110. On *malkhut*, the *shekbinah*, as *Kenesset Yisrael*, see Scholem, *On the Mystical Shape of the Godhead*, 161.

111. Moshe Hallamish, “The Kabbalists’ Attitude Toward the Nations of the World,” *Jerusalem Studies in Jewish Thought* 14 (1998): 289–311 (Hebrew).

112. Zohar 2:135a. This text lists the materials that the Israelites were requested to donate for the construction of the Tabernacle (Exod. 25:2–3), associating each material with a different festival and a different *sefirah*. Tekhelet is described as “Secret of Faith,” another common name for *malkhut*.

113. Nissim Shelomo ben Avraham Agazi, *Me'ulefet sappirim* (Constantinople, 1660), day 17.

114. *b. Ber.* 55b.

115. See n. 84 above.

116. Zohar 3:202b.

117. See, e.g., Yehudah ha-Cohen, *Ashmoret ha-boker* (Jerusalem, 1852), 121a–b, 188a, 206a, 256a, 261a, 273a, 283b–284a, 326a–b, 364a–b, 383b, 384b–385b, 391b–392a, 393b, 404a.

118. *Ibid.*, 283b–284a.

119. Itzhak Alfia, *Ahavat hashem* (Jerusalem, 1943), 28a–31b. In this work, Alfia also discussed the color black (25a–27a). In an earlier work, he elaborated on the evil eye and presented some practices. See n. 105 above.

120. *Ibid.*, 31a. Notably, Jews were forced by sixteenth-century Ottoman rulers to wear blue turbans (Stillman, *The Jews of Arab Lands*, 318); there is evidence that the *rishon letsion* of mid-nineteenth-century Jerusalem, Rabbi Ḥaim Nissim Abulafia, did wear a blue turban (Stillman, *The Jews of Arab Lands*, 334).

121. See, e.g., Regina Lilientalowa, “Ayin ha-ra,” *Yidishe Filologie* 1 (1924), no. 46: 245–271; Marek Tuszewicki, “Non-Jewish Languages of Jewish Magic: On Homeliness, Otherness, and Translation,” in *Jewish Translation: Translating Jewishness*, ed. Magdalena Waligórska and Tara Kohn (Berlin: De Gruyter, 2018), 135–150. Lilientalowa's study is considered the classic work on the evil eye among Eastern European Jews. The late Piotr Grącikowski edited a fuller version of her study, which has not yet been published. I would like to thank Marcin Wodziński for informing me about that edition and that in this version, too, blue does not play a notable role.

122. Of course, this distinction between Sephardic and Ashkenazic cultures oversimplifies the issue. A notably different case that I will not discuss here, and which also exemplifies the problematics of generalizations, is that of the colors of the head-covering of early

modern Jews of Venice. See, e.g., Benjamin Ravid, “From Yellow to Red: On the Distinguishing Head-Covering of the Jews of Venice,” *Jewish History* 6 (1992): 179–210.

123. Israel Jacob Yuval, *Two Nations in Your Womb: Perceptions of Jews and Christians in Late Antiquity and the Middle Ages*, trans. Barbara Harshav and Jonathan Chipman (Berkeley: University of California Press, 2006), 92–134; Yehuda Liebes, “Helen’s Porphyry and *Kiddush ha-Shem*,” *Daat* 57–59 (2006): 83–119 (Hebrew).

124. David Biale, *Blood and Belief: The Circulation of a Symbol Between Jews and Christians* (Berkeley: University of California Press, 2007), 78.

125. Gerson D. Cohen, “Esau as Symbol in Early Medieval Thought,” in *Jewish Medieval and Renaissance Studies*, ed. Alexander Altman (Cambridge, MA: Harvard University Press, 1967), 19–48.

126. Yuval, *Two Nations in Your Womb*, 93–99.

127. Andrew Colin Gow, *The Red Jews: Antisemitism in an Apocalyptic Age, 1200–1600* (Leiden: Brill, 1995); Rebekka Voß, “Entangled Stories: The Red Jews in Premodern Yiddish and German Apocalyptic Lore,” *AJS Review* 36, no. 1 (2012): 1–41; idem, *A Visual Kingdom: The Red Jews in Yiddish Culture* (forthcoming).

128. Scholem, *Sabbatai Ševi*, 623–624. Mentioned by Liebes, “Helen’s Porphyry and *Kiddush ha-Shem*,” 111, around n. 191.

129. On the Polish cochineal, see Katarzyna Schmidt-Przewoźna, “History of Red Colours in Poland: Polish Cochineal *Porphyrophora Polonica* L. and Other Natural Dyes,” *Colour Culture Science*, ed. Maria Godyń, Bożena Groborz, and Agata Kwiatkowska-Lubańska (Kraków: Jan Matejko Academy of Fine Arts, 2018), 34–41.

130. See Iserles’s comment to *Shulḥan ‘arukh, Yoreh De’ah*, par. 178.1.

131. *Sefer Hatam Sofer: Derashot me-rabeinu moshe sofer* (Klausenburg, 1929), 2:284b. The Hatam Sofer’s interpretation follows the medieval commentator Rabbi Bahye ben Asher.

132. *Shakh* [Sifte Cohen] to *Shulḥan ‘arukh, Yoreh De’ah*, par. 178.3. The statement is brought in the name of the fifteenth-century Rabbi Yosef of Cologne.

133. Irena Turnau, “Polish Dress,” in *History of Dress in Central and Eastern Europe from the Sixteenth to the Eighteenth Century*, trans. Izabela Szymańska (Warsaw: Polish Academy of Sciences, 1991), 71–85; Cornelia Aust, “From Noble Dress to Jewish Attire: Jewish Appearances in the Polish-Lithuanian Commonwealth and the Holy Roman Empire,” in *European History Yearbook*, vol. 20: *Dress and Cultural Difference in Early Modern Europe*, ed. idem, Denise Klein, and Thomas Weller (Berlin: De Gruyter, 2019), 90–112.

134. Agnieszka Jagodzińska, “Overcoming the Signs of the ‘Other’: Visual Aspects of the Acculturation of Jews in the Kingdom of Poland in the Nineteenth Century,” *Polin* 24 (2012): 71–94; Glenn Dynner, “The Garment of Torah: Clothing Decrees and the Warsaw Career of the First Gerer Rebbe,” in *Warsaw—The Jewish Metropolis: Essays in Honor of the 75th Birthday of Professor Antony Polonsky*, ed. idem and François Guesnet (Leiden: Brill, 2015), 91–127.

135. See, e.g., Rubens, *A History of Jewish Costume*, 125–144; Dynner, “The Garment of Torah,” 96n21.

136. See, e.g., Gadi Sagiv, “Ritualization as Religious Renewal in 18th-Century Hasidism,” *Zutot* 16 (2019): 27.

137. *The Autobiography of Solomon Maimon: The Complete Translation*, ed. Yitzhak Y. Melamed & Abraham P. Socher, trans. Paul Reitter (Princeton NJ: Princeton University Press), 96.

138. Meir Eisenstadt, *Shut panim me’irot* (Sulzbach: Zalman ben Aharon, 1738), 2:95a (responsum 152).

139. See, e.g., Moshe Haim Efraim of Sudilkov, *Degel mahane efraim ba-shalem* (Jerusalem: Mir, 1995), par. *Tetsaveh*, 118.
140. *Tiferet shelomo al batorab* (Warsaw: Schriftgisser, 1869), par. *Tetsaveh*, 74b.
141. On comparisons of Hasidic leaders to priests, as well as other types of leaders, see Arthur Green, “Typologies of Leadership and the Hasidic Zaddiq,” in *Jewish Spirituality*, vol. 2: *From the Sixteenth-Century Revival to the Present*, ed. idem (New York: Crossroad, 1987), 127–156.
142. Shmuel Bornstein, *Shem mi-shmuel* (Jerusalem: [n.p.], 1991), vol. 1, par. *Lekha-Lekha*, 141–142.
143. The two Hasidic groups that adopted tekhelet were the Radzin and Bratslav Hasidism; see Chap. 5 below.
144. *Limudei atsilut* (Munkacs, 1897), 30b. Reference by Gershom Scholem, “Mekorotav shel ‘Ma’ase rabbi gadriel ha-tinok’ be-sifrut ha-kabbalah” [The sources of the ‘Story of Rabbi Gadriel the Infant’ in kabbalistic literature], repr. in the collection of his studies: *Devotum be-go* [Explications and implications] (Tel Aviv: Am Oved, 1975), 277.

CHAPTER 4

1. John Baines, “Color Terminology and Color Classification: Ancient Egyptian Color Terminology and Polychromy,” *American Anthropologist* 87, n.s. (1985): 282–297. See, esp., 288–289; Gay Robins, “Color Symbolism,” in *The Oxford Encyclopedia of Ancient Egypt* (Oxford: Oxford University Press, 2001), 1:291–294.
2. François Delamare, “The Rediscovery of Egyptian Blue,” in *Blue Pigments: 5000 Years of Art and Industry*, trans. Yves Rouchaleau (London: Archetype, 2013), 269–294; Amalie Skovmøller, Cecilie Brøns, and Maria Louise Sargent, “Egyptian Blue: Modern Myths, Ancient Realities,” *Journal of Roman Archaeology* 29 (2016): 371–387.
3. Some of the topics of this chapter and Chap. 5 below were discussed in Gadi Sagiv, “Deep Blue: Notes on the Jewish Snail Fight,” *Contemporary Jewry* 35 (2015): 285–313; idem, “A New Perspective on the Tekhelet Controversy of the Late Nineteenth Century,” *Zion* 82 (2017): 59–95 (Hebrew). In addition to updates on the research of these topics since their publication, these two chapters include several topics that were not discussed in those articles.
4. I will use the Polish spelling “Radzyń” when I refer to the locality. When I refer to the group of Hasidim or to the dye, I will use the spelling “Radzin.” I will refer to the dye as Leiner’s tekhelet or, to conform to contemporary Jewish parlance, Radzin tekhelet.
5. I initiated correspondence or conducted interviews with (in alphabetical order): Zvi C. Koren, Mendel Singer, Ehud Spanier, Assaf Stein, Baruch Sterman, Eliyahu Tavger, and Israel I. Ziderman. Shlomo Englard, the rebbe of Radzin, declined my request to speak or correspond.
6. On Newton’s *Opticks*, see, e.g., John Gage, *Color and Culture: Practice and Meaning from Antiquity to Abstraction* (Berkeley: University of California Press, 1993), 153–176.
7. Paul D. Sherman, *Colour Vision in the Nineteenth Century: The Young-Helmholtz-Maxwell Theory* (Bristol: Adam Hilger, 1981); Robert A. Crone, *A History of Color: The Evolution of Theories of Lights and Color* (Dordrecht: Kluwer, 1999). On Goethe’s theory see, e.g., Dennis L. Sepper, *Goethe Contra Newton: Polemics and the Project for a New Science of Colour* (Cambridge: Cambridge University Press, 1988). On Dalton’s work see, e.g., Crone, *A History of Color*, 127–130.

8. Laura Anne Kalba, *Color in the Age of Impressionism: Commerce, Technology, and Art* (University Park: Pennsylvania State University Press, 2017). On Chevreul, see *ibid.*, 15–40.

9. See Chap. 1 above.

10. A. Abel, “The History of Dyes and Pigments: From Natural Dyes to High Performance Pigments,” in *Colour Design: Theories and Applications*, ed. Janet Best (Cambridge: Woodhead, 2012), 433–470; Regina Lee Blaszczyk, *The Color Revolution* (Cambridge, MA: MIT Press, 2012).

11. Simon Garfield, *Mauve: How One Man Invented a Colour That Changed the World* (London: Faber and Faber, 2000).

12. See, e.g., Alexander Kraft, “On the Discovery and History of Prussian Blue,” *Bulletin for the History of Chemistry* 33, no. 2 (2008): 61–67.

13. Rutherford J. Gettens and Elisabeth West FitzHugh, “Azurite and Blue Verditer,” in *Artists’ Pigments: A Handbook of Their History and Characteristics*, ed. Ashok Roy (Washington, DC: National Gallery of Art, 1993), 2:23–35.

14. Abel, “The History of Dyes and Pigments,” 453.

15. For an example of the use of that pigment by the Impressionist painter Berthe Morisot, see David Bomford et al., *Art in the Making: Impressionism* (London: National Gallery Publications, 1990), 180–181.

16. On lapis lazuli, see “Blue Minerals, Stones, and Gems,” in Chap. 1 above.

17. Joyce Plesters, “Ultramarine Blue, Natural and Artificial,” in *Artists’ Pigments*, ed. Roy, 2:37–65; Joost Mertens, “The History of Artificial Ultramarine (1787–1844): Science, Industry and Secrecy,” *Ambix* 51, no. 3 (2004): 219–244; François Delamare, “Guimet Blue and Artificial Ultramarines: The Dream Comes True,” in *Blue Pigments*, trans. Rouchaleau, 207–260.

18. Herzog, “Hebrew Porphyrology,” in *The Royal Purple and the Biblical Blue (Argaman and Tekhelet): The Study of Chief Rabbi Dr. Isaac Herzog on the Dye Industries in Ancient Israel and Recent Scientific Contributions*, ed. Ehud Spanier (Jerusalem: Keter, 1987), 22–25. On Tyrian purple, see “Mollusk-Based Blue,” in Chap. 1 above.

19. William Cole, “A Letter from Mr. William Cole of Bristol, to the Phil. Society of Oxford; Containing His Observations on the Purple Fish,” *Philosophical Transactions* 15, no. 178 (1685): 1278–1286. On Cole as the one who rediscovered Tyrian purple, see, e.g., J. H. Clark et al., “Indigo, Woad and Tyrian Purple: Important Vat Dyes from Antiquity to the Present,” *Endeavour* 17, no. 4 (1993): 191–199.

20. Herzog, “Hebrew Porphyrology.”

21. *Murex trunculus* and *Murex brandaris* are not the names used today, but rather *Hexaplex trunculus* and *Bolinus brandaris*, respectively. I will use the name *Murex* because this is the common name in the Jewish discourse of tekhelet.

22. F. [Francesco] Ghiretti, “Bartolomeo Bizio and the Rediscovery of Tyrian Purple,” *Experientia* 50 (1994): 802–807.

23. Henri de Lacaze-Duthiers, “Mémoire de la Pourpre,” *Annales des Sciences Naturelles*, 4th series, *Zoologie* 12 (1859): 5–84.

24. On the disagreement between Lacaze-Duthiers and Bizio, see Herzog, “Hebrew Porphyrology,” 29; I. Irving Ziderman, “The Biblical Dye *Tekhelet* and Its Use in Jewish Textiles,” *Dyes in History and Archaeology* 21 (2008): 38.

25. Shaul Magid, “A Thread of Blue: Rabbi Gershon Henoch Leiner of Radzyń and His Search for Continuity in Response to Modernity,” *Polin* 11 (1998): 31–52.

26. E.g., Shlomo Zalman Shragai, *Bi-nivei ḥasidut izbica-radzin* (Jerusalem: Weiss, 1974), 2:161. For a description of Leiner's medical knowledge and prescriptions, see *ibid.*, 323–326.
27. Shimon Fogel, “The Literary Activity of Rabbi Gershon Henoḥ Leiner of Radzyń,” *Daat* 68–69 [=Alexander Safran Memorial Volume] (2010): 149–185 (Hebrew).
28. Gershon Henekh Leiner, *Sefunei temunei ḥol* (Warsaw: Ḥaim Kelter, 1887). This work was printed twice in the same year, 1887. The references to this work follow the more available 3d ed. (New York: Saphrograph, 1952), which is based on the 2d ed. (Lublin: Shneidmesser and Hershenhorn, 1903).
29. I will use the scientific name *Sepia officinalis* because this name appears more often in discussion of the Radzin *ḥillazon*.
30. On Leiner's understanding of these requirements, see below.
31. Gershon Henekh Leiner, *Petil tekhelet* (Warsaw: Ḥaim Kelter, 1888). The references to this work will be according to the more available 3d ed. (New York: Saphrograph, 1952), which is based on the 2d ed. (Lublin: Shneidmesser and Hershenhorn, 1903).
32. *Ibid.*, 166–168.
33. *Ibid.*, 119–166.
34. *Ibid.*, 3.
35. Bernd Brunner, *The Ocean at Home: An Illustrated History of the Aquarium* (New York: Princeton Architectural Press, 2005), 118–119; Baruch Sterman with Judy Taubes Sterman, *The Rarest Blue: The Remarkable Story of an Ancient Color Lost to History and Rediscovered* (Guilford, CT: Lyons, 2012), 13.
36. Yaakov Halevi Lipschits, *Zikbron yaakov* (Kovna: Yoselevich, 1927), 2:176.
37. On the controversies regarding Leiner's tekhelet, see Gadi Sagiv, “A New Perspective on the Tekhelet Controversy of the Late Nineteenth Century,” *Zion* 82 (2017): 59–95 (Hebrew). On the high prices, see *ibid.*, 65–66, 84; Ḥaim Karlinsky, *Ha-rishon le-shoshelet brisk* (Jerusalem: Makhon Yerushalayim, 1984), 266–267. On giving out tsitsit for free, see Sagiv, “A New Perspective,” 73–74. See also Chap. 5 below.
38. See “Reception and Rejection of Tekhelet by Orthodox Jews,” in Chap. 5 below.
39. Joseph Schönhak, *Sefer ha-masbbir o 'arukh be-ḥadash* (Warsaw: Nathan Schriftgisser, 1858), 1:85b.
40. Ḥaim Zelig Slonimski, *Hazefirah*, August 10, 1888: 3–4.
41. On Shaul Berlin and his book, see Talya Fishman, “Forging Jewish Memory: *Besamim Rosh* and the Invention of Pre-Emancipation Jewish Culture,” in *Jewish History and Jewish Memory: Essays in Honor of Yosef Hayim Yerushalmi*, ed. Elisheva Carlebach, John M. Efron, and David N. Myers (Hanover, NH: Brandeis University Press, 1998), 70–88.
42. *Besamim rosh*, sec. 244, 74b–75a.
43. Leiner, *Petil tekhelet*, 25–26.
44. Isaac Satanow, *Imrei bina* (Berlin: [n.p.], 1784). On Satanow, see Elke Morlok, *Kabbala und Haskala: Isaak Satanow (1732–1804) Zwischen Jüdischer Gelehrsamkeit, Moderner Physik und Berliner Aufklärungs* (Berlin: De Gruyter, 2022).
45. *Ibid.*, 15b–17a. On Satanow's approach to colors, see Morlok, *Kabbala und Haskala*, 247–284.
46. See his critique of the *maskil* Moshe Landa as one of the fools, in Gershon Henekh Leiner, *Eyn batekhelet* (Warsaw: Meir Yeḥiel Halter, 1891), 53, 115.
47. Leiner, *Petil tekhelet*, 4.
48. *Ibid.*, 4.

49. Ibid., 16.

50. Leiner, *Eyn batekhelet*, 53, 115. Leiner refers to Moshe Landa's 1819 edition of the *'Arukh*, printed in Prague.

51. Those texts may have been Haim Zelig Slonimski's books on science, or the articles on science that he published in *Hazefirah*, the popular Warsaw newspaper of which he was the editor; Radzin Hasidim were among its subscribers. Other possibilities include Joseph Schönhak's *Sefer toledot ba-arez* on natural history or his *Sefer ba-mashbir*, his edition of the *'Arukh*. On the popularization of scientific knowledge among nineteenth-century Eastern European Jews, see Mordechai Zalkin, "Scientific Literature and Cultural Transformation in Nineteenth-Century East European Jewish Society," *Aleph* 5 (2005): 249–271; Jehuda Reinharz and Yaacov Shavit, "*Ha-el ba-mada'i*": *Mada populari be-ivrit be-mizrah eiropa ba-mabatsit ha-shniya shel ha-mea ba-19* (Tel Aviv: Hakibbutz Hameuchad, 2011). On Radzin Hasidim as probable subscribers to *Hazefirah*, see Alexander Zederbaum, *Hamelitz*, June 24, 1879: 543.

52. Notably, Leiner states here that the body of the *hillazon* should resemble the sea, presumably in color. This statement is in addition to the demand that the dye made of the secretion of the *hillazon* should resemble the sea.

53. Leiner, *Sefunei temunei hol*, 29–36.

54. Leiner, *Petil tekhelet*, 9–27; the new criterion is introduced in 9–13. The alleged reference to Italy follows Ezek. 27:7: "tekhelet and *argaman* from the coasts of Elisha"; "Elisha" was translated as "Italy" in *Targum yonathan*.

55. See, e.g., Leiner's defense of his criteria in a response to the skeptic Rabbi Israel Eliyahu Yehoshua Trunk of Kutno: *Eyn batekhelet*, 231.

56. Magid, "A Thread of Blue," 48.

57. Ibid. On the messianic aspects of the renewal of tekhelet, see below.

58. Ibid., 49–52.

59. Herzog, "Hebrew Porphyrology," 17–131. A scan of the original dissertation with Herzog's comments is available at the Israeli State Archives: ISA-Privatecollections-RabbiHerzog-000a7jl. The references to the Israeli State Archives are based on new guidelines for digitized documents. I will refer to Herzog's dissertation according to the 1987 publication, which includes some standardization of spelling.

60. I elaborate on the science-and-religion aspect of the renewal of tekhelet in "Between Science and Religion," in Chap. 5 below.

61. The first three chapters of Herzog's dissertation provide this background: Herzog, "Hebrew Porphyrology," 18–57.

62. Ibid., 57–61.

63. Ibid., 61–78.

64. Ibid., 76–77.

65. Ibid., 63–65.

66. Ibid., 70. Herzog wrote that "if we had no traditional description of the tekhelet *hillazon*, we should not have hesitated for a moment to suggest [*Murex trunculus*] as the most probable identification."

67. See, e.g., *ibid.*, 63–65.

68. Guilielmi Gesenii, *Thesaurus Philologicus Criticus Linguae Hebraeae et Chaldaeae Veteris Testamenti* (Leipzig: F. C. G. Vogel, 1853), 3:1502–1503.

69. Herzog, "Hebrew Porphyrology," 71. Translation from the French is mine.

70. Ibid., 74.

71. On the debates about the hue of tekhelet, see below.
72. Herzog, “Hebrew Porphyrology,” 61–78.
73. Ibid., 78–97. On the question of the hue of tekhelet, see “Was Tekhelet Blue?,” in Chap. 1 above; and see below.
74. Herzog, “Hebrew Porphyrology,” 97–107.
75. Ibid., 114–118.
76. Ibid., 117–118.
77. See his letter to R. Shlomo Sasson.
78. *Ha-Hed* 7, no. 9 (1932): 20–22, 24; *ba-Hed* 7, no. 10 (1932): 26–27; *ba-Hed* 7, no. 11 (1932): 20–21; *ba-Hed* 7, no. 12 (1932): 30–31; *ba-Hed* 9, no. 9 (1934): 17–21, 32.
79. Avraham Shmuel Herszberg (1858–1940), an Eastern European scholar of Jewish material culture who had published a book on Jewish dress in 1924, criticized Herzog’s neglect of some sources—in particular, his own writings. For his arguments and Herzog’s response: *ba-Hed* 10, no. 6 (1935): 28–31. An unsigned (perhaps editorial) summary of Herszberg’s scholarly work appears in *ba-Hed* 11, no. 4 (1936): 30–31.
80. See a letter dated 17 Shevat 708 [January 28, 1948] in Herzog’s archive: Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 6.
81. Ibid.
82. Notably, Bodenheimer, in his memoirs, does not mention Herzog as one of his significant contacts. See F. S. Bodenheimer, *A Biologist in Israel: A Book of Reminiscences* (Jerusalem: Biological Studies, 1959).
83. Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 35–41.
84. Ibid., 15–20. On the Pfister discoveries, see Rolf Haubrichs, “L’étude de la pourpre: Histoire d’une couleur, chimie et expérimentations,” *Preistoria Alpina*, suppl. 1, 40 (2004): 147. The bio-bibliographical data about Pfister was taken from the database of the Bibliothèque nationale de France, https://data.bnf.fr/fr/12516187/rodolphe_pfister (accessed December 13, 2020).
85. See a letter to Mr. Wirshuvsky of the Haifa laboratory, dated September 26, 1949, in Herzog’s archive: Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 13.
86. Menachem Burstein, *Ha-tekhelet*, 2d ed. (Jerusalem: Sifriyati-Gitler, 1990), 415–416.
87. An announcement about the restoration: *Hazofeh*, February 1, 1951: 2.
88. Shlomo Zalman Shragai, *Bi-ntivei ḥasidut izbica-radzin* (Jerusalem: Weiss, 1972), 1:169.
89. Herzog’s archive, a letter from Rabbi Yeruḥam Leiner, dated the first day of Rosh Hodesh Adar 5712 [February 26, 1952]: See a letter dated 17 Shevat 708 [January 28, 1948] in Herzog’s archive: Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 30–31.
90. Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 54. The report sent by the Gobelins Manufactory does not seem to exist in the archive, but Herzog refers to it as expressing a contradictory opinion to its 1913 report. Notably, the archive contains a report from Gobelins (see Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 36–37) dated March 24, 1953; but the entire correspondence is from 1952. Therefore, I assume that that report was misplaced in the archive. One might say that there was a mistake in the date, but the content of the report does not conform to what Herzog understood of it. The report says that a reinspection was made, and the conclusions are

that the blue-dyed textile could not have been made of *Sepia officinalis*, of which only beige and brown colors can be obtained.

91. Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 43–47, 54–61, 88.

92. Ibid., 50–51.

93. Ibid., 44–45. On Bradley's change of opinion, see *ibid.*, 52. The events received some publicity. See "Science Probes Biblical Question," *Singapore Free Press*, September 3, 1952: 3.

94. Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 61.

95. See the report by Gobelins dated March 24, 1953, in Herzog's archive: Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 36–37.

96. Ibid., 34 (a letter to the chief archaeologist of the U.S. State Dept. from February 21, 1952).

97. Ibid., 80 (a letter to the rabbi of Munich from June 8, 1954).

98. Ibid., 89 (a letter to Israeli archaeologist Yigael Yadin from March 31, 1955).

99. Alexander Kaye, *The Invention of Jewish Theocracy: The Struggle for Legal Authority in Modern Israel* (New York: Oxford University Press, 2020), 52.

100. E.g., in 1991, Edelstein funded the establishment of the Edelstein Center for the Analysis of Ancient Artifacts at the Shenkar College of Engineering and Design and donated his book collection to the Hebrew University of Jerusalem. The Edelstein Center for the History and Philosophy of Science, Technology and Medicine at the Hebrew University of Jerusalem is supported by the Sidney and Mildred Edelstein Foundation.

101. Yigael Yadin, *The Finds from the Bar Kokhba Period in the Cave of Letters* (Jerusalem: Israel Exploration Society, 1963), 1:171–177 ("Woolen Textiles: General Remarks, the Dyes and Colours"), 270–279 (David H. Abrahams and Sidney M. Edelstein, "Appendix: A Study of the Textiles from the Color Standpoint"). Edelstein wrote about his involvement with tekhelet in his preface to the 1987 publication of Herzog's dissertation, which included new scientific contributions: *The Royal Purple and the Biblical Blue*, ed. Spanier.

102. Sydney M. Edelstein, "Preface," in *The Royal Purple and Biblical Blue*, ed. Spanier, 11–12.

103. Ibid., 12.

104. The *Talmudic Encyclopedia* has been a prominent research project conducted by religious Zionist Jews since the first decades of the State of Israel, parallel to the *Encyclopaedia Hebraica*. Unlike the latter, the former has not yet been completed.

105. See <https://www.tekhelet.info> (accessed January 17, 2021). A selection of Ziderman's major publications on tekhelet: Israel I. Ziderman, "Halakhic Aspects of Reviving the Ritual Tekhelet Dye in the Light of Modern Scientific Discoveries," in *The Royal Purple and Biblical Blue*, ed. Spanier, 207–220; "Contemporary Rediscovery of the Tekhelet Snail," *Hama'ayan* 34, no. 4 (2005): 27–39 (Hebrew). See also reference in n. 142 below.

106. On the contemporary debates about the hue, see below.

107. Otto Elsner and Ehud Spanier, "The Past, Present and Future of Tekhelet," in *The Royal Purple and Biblical Blue*, ed. Spanier, 167–177.

108. Dr. Ziderman told me this in a personal conversation on February 5, 2013, but to the best of my knowledge, these German scientists are not mentioned in Elsner's papers.

109. Burstein, *Ha-tekhelet*.

110. Zvi C. Koren, "New Chemical Insights into the Ancient Molluscan Purple Dyeing Process," in *Archaeological Chemistry* 8, ed. Ruth Ann Armitage and James H. Burton (Wash-

ington, DC: American Chemical Society, 2013), 43–67; Dina Kraft, “Rediscovered, Ancient Color Is Reclaiming Israeli Interest,” *New York Times*, February 27, 2011: <https://www.nytimes.com/2011/02/28/world/middleeast/28blue.html> (accessed April 28, 2022).

111. Naama Sukenik et al., “Purple-Dyed Textiles from Wadi Murabba’at: Historical, Archaeological and Chemical aspects,” *Archaeological Textiles Review* 55 (2013): 46–54.

112. For the library, see <https://www.tekhelet.com/library> (accessed December 13, 2020).

113. Sterman and Taubes Sterman, *The Rarest Blue*; Hebrew trans.: Baruch Sterman and Judy Taubes Sterman, *Lit’om me-ha-shamayim: Madua hipsu ba-yehudim et tseva ha-tekhelet*, trans. Tsur Ehrlich (Tel Aviv: Yedioth Ahronoth, 2014). For a review of the Hebrew trans.: Gadi Sagiv, *Haaretz Books Supplement*, March 28, 2014, 10–11 (Hebrew).

114. Zvi C. Koren, “Archaeo-Chemical Analysis of Royal Purple on a Darius I Stone Jar,” *Microchimica Acta* 162 (2008): 381–392.

115. Mendel E. Singer, “Understanding the Criteria for the Chilazon,” *Journal of Halacha and Contemporary Society* 42 (2001): 5–29; Baruch Sterman, “The Source of Techelet: A Response to Dr. Singer,” *Journal of Halacha and Contemporary Society* 43 (2002): 112–124; Mendel E. Singer, [A response to Sterman in the letters section], *Journal of Halacha and Contemporary Society* 44 (2002): 97–110.

116. Singer, “Understanding the Criteria for the Chilazon,” 8. On these descriptions, see also “Mollusk-Based Blue,” in Chap. 1 above.

117. *b. Menah. 44a*. Trans. Herzog, “Hebrew Porphyrology,” 65.

118. Sterman, “The Source of Techelet: A Response to Dr. Singer,” 122.

119. *b. Menah. 42b*.

120. Singer, “Understanding the Criteria for the Chilazon.”

121. Roald Hoffmann, “Blue as the Sea,” *American Scientist* 78 (1990): 308–309.

122. Sterman, “The Source of Techelet: A Response to Dr. Singer,” 117.

123. Singer, “A Response to Sterman,” 101.

124. He coauthored a book on the subject, including a chapter on tekhelet: Roald Hoffmann and Shira Leibowitz Schmidt, *Old Wine, New Flasks: Reflections on Science and Jewish Tradition* (New York: Freeman, 1997), 159–211, 327–332.

125. See “Was Tekhelet Blue?,” in Chap. 1 above.

126. See, e.g., the critique of Slonimski, editor of *Hazefirab*: Haim Zelig Slonimski, *Hazefirab*, August 10, 1888: 3–4.

127. Leiner, *Sefunei temunei hol*, chap. 3, 36–37.

128. Leiner, *Petil tekhelet*, chap. 2, 27–38.

129. To articulate the idea of the mixture, Leiner used the Hebrew verb *patukh*/פתוך, as did Maimonides.

130. Leiner, *Petil tekhelet*, 27–33.

131. See “Tekhelet Within the System of the *Sefirot*: Between Complexity and Nothingness,” in chap. 2 above.

132. Leiner, *Petil tekhelet*, 34–37.

133. Peter Pesic, *Music and the Making of Modern Science* (Cambridge, MA: MIT Press, 2014), 121–131.

134. See “A Few Notes on References to Colors in Medieval Judaism,” in Chap. 2 above.

135. See “Gershon Henekh Leiner and the Discovery of a New Tekhelet,” above.

136. I thank Prof. Yosef Verbin for clarifying this point.

137. The role of tekhelet in the Modern Orthodox discourse of religion and science (*Torah u-madda*) will be discussed in Chap. 5 below.

138. Leiner, *Petil tekhelet*, 5.

139. Additionally, I would like to make a far-fetched speculation that his possible awareness of the color-naming debate also contributed to his rather flexible approach toward the naming problem of tekhelet. As discussed above, Leiner was acquainted with *Hazefirah* newspaper, which popularized contemporaneous science and also published an article on this debate. See [Haim Zelig Slonimski,] *Hazefirah*, August 26, 1874: 61–62.

140. Ibid., 94–96. On indigo and *kala ilan*, see “Plant-Based Blue,” in Chap. 1 above.

141. Rabbi Eliyahu Tavger relayed this view to me in an in-person interview on March 7, 2013. In Edelstein’s preface to Herzog’s dissertation, he does not discuss the hue of tekhelet.

142. Israel I. Ziderman, “Renewal of the Mizvah of Tekhelet in Tsitsit,” *Tehumin* 9 (1988): 423–446 (Hebrew); “The Biblical Dye Tekhelet and Its Use in Jewish Textiles,” *Dyes in History and Archaeology* 21 (2008): 36–44.

143. Rabbi Yehuda Rock responded to Ziderman: Yehuda Rock, “Hidush hatekhelet veinyanei tzitzit vetekhelet,” <http://www.tekhelet.com/pdf/rak.pdf> (accessed November 17, 2017), 15–17. It is likely that after receiving this critical response, Ziderman clarified his argument. Although the Hebrew word *sagol*/סגול denotes both violet and purple, he claimed that tekhelet is violet, whereas *argaman* is purple. See <http://www.tekhelet.info/111037/Was-tekhelet-a-blue-colour> (accessed November 17, 2017).

144. Rabbi Eliyahu Tavger communicated this to me in an in-person interview on March 7, 2013.

145. Ziderman changed his opinion after discovering that when a purple *Murex* dye is heated, it can turn blue and perhaps constitute the hue of tekhelet.

146. See “Was Tekhelet Blue?,” in Chap. 1 above. The suggestion was made by Prof. Zohar Amar, a scholar of ancient Jewish material culture, who is also a supporter of the renewal of ancient Jewish dyes.

147. Kraft, “Rediscovered, Ancient Color Is Reclaiming Israeli Interest.”

148. For references to the various parts of the debate, see <http://www.biblicalarchaeology.org/daily/archaeology-today/biblical-archaeology-topics/scholars-study-the-great-tekhelet-debate> (accessed December 13, 2020).

149. Baruch Stermann and Judy Taubes Stermann, “Baruch and Judy Taubes Stermann Respond,” December 11, 2013, <http://www.biblicalarchaeology.org/daily/archaeology-today/biblical-archaeology-topics/baruch-and-judy-taubes-sterman-respond> (accessed December 17, 2017).

150. “It is troubling that the Stermans continue their distortions of facts, espousing misinformation and disinformation, even in their response to my criticism of their original article. To put words in my mouth, or in Rashi’s mouth, that were never said or written is misrepresentation”; “Zvi C. Koren’s Reply to the Stermans’ Response: Continuing the Tekhelet Debate,” January 2, 2014, <https://www.biblicalarchaeology.org/daily/biblical-artifacts/artifacts-and-the-bible/zvi-c-korens-reply-to-the-stermans-response> (accessed December 17, 2017).

151. E.g., Michael Hemphill, “A Note on Adults’ Color-Emotion Associations,” *Journal of Genetic Psychology* 157, no. 3 (1996): 275–280.

152. *Ma’anyanei ha-yeshuah* 85 (2003). The kabbalistic text was discussed in “Tekhelet Within the System of the *Sefirot*: Between Judgment and Mercy,” in Chap. 2 above.

153. I use a broad definition of “messianism” that includes a variety of expressions of redemption and eschatology, without necessarily including the figure of a savior, a “messiah.”

That sort of broad definition is congruent with the common scholarly discourse in Jewish studies.

154. Gershom Scholem, *The Messianic Idea in Judaism and Other Essays in Jewish Spirituality* (New York: Schocken, 1971), 1–36.

155. Magid, “A Thread of Blue,” 51; idem, *Hasidism on the Margin: Reconciliation, Antinomianism, and Messianism in Izbica/Radzin Hasidism* (Madison: University of Wisconsin Press, 2003), xiv (and throughout the book).

156. Israel State Archives, File ISA-Privatecollections-RabbiHerzog-000f684, 24.

157. Baruch Sterman emphasized this point to me in a private communication from 2021.

158. Baruch Sterman related this in a personal conversation on February 23, 2014.

159. See Alec Mishory, *Secularizing the Sacred: Aspects of Israeli Visual Culture* (Leiden: Brill, 2019), 116–136, and the references there.

160. Steven Fine, *The Menorah: From the Bible to Modern Israel* (Cambridge MA: Harvard University Press, 2016), 140–145.

161. Philip L. Kohl, Mara Kozelsky, and Nachman Ben-Yehuda, eds., *Selective Remembrances: Archaeology in the Construction, Commemoration, and Consecration of National Pasts* (Chicago: University of Chicago Press, 2007).

162. Israel Finkelstein and Neil Asher Silberman, *The Bible Unearthed: Archaeology's New Vision of Ancient Israel and the Origin of Its Sacred Texts* (New York: Free Press, 2001).

163. Yael Zerubavel, *Recovered Roots: Collective Memory and the Making of Israeli National Tradition* (Chicago: University of Chicago Press, 1995); Nachman Ben-Yehuda, *The Masada Myth: Collective Memory and Mytbmaking in Israel* (Madison: University of Wisconsin Press, 1995); idem, *Sacrificing Truth: Archaeology and the Myth of Masada* (Amherst, NY: Humanity, 2002); idem, “Excavating Masada: The Politics–Archaeology Connection at Work,” in *Selective Remembrances*, ed. Kohl, Kozelsky, and Ben-Yehuda, 247–276.

164. Gershom Scholem, “Toward an Understanding of the Messianic Idea in Judaism,” in *The Messianic Idea in Judaism*, 3.

165. Magid, “A Thread of Blue,” 46–48.

166. See Leiner’s support in an argument that tekhelet is a prerequisite to the Temple, which, in turn, is a prerequisite to the messiah (*Petil tekhelet*, 126), and his support of an argument that tekhelet is a prerequisite to the Temple, which, in turn, is a prerequisite to the performance of several other commandments, such as the sacrifices (*Eyn batekhelet*, 207).

167. For elaboration on these forms of messianism, see “Messianism and the Temple,” in Chap. 5 below.

168. See <http://tekhelet.com/programs> (accessed December 14, 2020).

169. Margaret Meek Lange, “Progress,” *The Stanford Encyclopedia of Philosophy* (Summer 2021), ed., Edward N. Zalta, <https://plato.stanford.edu/archives/sum2021/entries/progress> (accessed August 16, 2021).

170. This text accompanied the mass funding campaign for the conference. See <http://www.rootfunding.com/campaign/tekhelet-100> (accessed August 30, 2019). Similar texts appeared in other announcements.

171. See the conference talks: <https://www.tekhelet.com/conference> (accessed August 30, 2019).

172. See the links to the various media items: <https://www.tekhelet.com/100press> (accessed August 30, 2019).

173. On Maya blue, see Helmut Schweppe, “Indigo and Woad,” in *Artists’ Pigments: A Handbook of Their History and Characteristics*, ed. Elisabeth West FitzHugh (Washington, DC: National Gallery of Art, 1997), 3:84; François Delamare, “The Rediscovery of Yax, the Maya Blue,” in *Blue Pigments*, trans. Rouchaleau, 305–313. On Han blue, see Elisabeth West FitzHugh and Lynda A. Zycherman, “An Early Man-Made Blue Pigment from China Barium Copper Silicate,” *Studies in Conservation* 28, no. 1 (1983): 15–23; François Delamare, “The Rediscovery of Han Blue,” in *Blue Pigments*, trans. Rouchaleau, 295–303.

CHAPTER 5

1. *Kitvei Y. L. Peretz* (Tel Aviv: Dvir [1962]), 174–175.

2. The argument that the *Murex* tekhelet is the “real” tekhelet has been fostered primarily by the Ptil Tekhelet association. While it marginalized other views by not presenting them in public as real alternatives, Ptil Tekhelet did not ignore specific objections to its argument. The organization’s members responded to these objections, and even uploaded all the relevant documents to their website. In fact, the following discussion is based, to a large extent, on materials available on that website.

3. On the tekhelet debates of the nineteenth century, see Gadi Sagiv, “A New Perspective on the Tekhelet Controversy of the Late Nineteenth Century,” *Zion* 82 (2017): 59–95 (Hebrew).

4. E.g., Shalom Mordechai Shvadron (1835–1911) and the controversial Rabbi Akiva Yo-sef Schlesinger (1837–1922). In his will, Shvadron requested to be buried with his prayer shawl that had a tsitsit of tekhelet: *Tekhelet mordechai* (Sighet: Yerahmiel Roizenthal, 1913), introduction by the author’s son (unpaginated). On the support by Schlesinger, see Sagiv, “A New Perspective on the Tekhelet Controversy,” 87–90.

5. Yisrael Yehoshua Trunk, *Shut yeshuot malko* (Piotrków, 1927), responsa 1–3, pp. 1–2.

6. Naftali Herz Niemnowicz [under the pseudonym “Ha-Netz”], *Hazeftirah*, August 17, 1888: 2–3; June 21, 1889: 516; June 28, 1889: 540.

7. Sagiv, “A New Perspective on the Tekhelet Controversy,” 69–81.

8. *Ibid.*, 81–90.

9. There is relatively extensive research about Rabbi Mordecai Joseph and his thought. See, e.g., Morris M. Faierstein, *All Is in the Hands of Heaven: The Teachings of Rabbi Mordecai Joseph Leiner of Izbica* (Piscataway, NJ: Gorgias, 2005); Aviezer Cohen, “Self-Consciousness in *Mei ha-Shiloach* as the Nexus Between God and Man” (Ph.D. diss., Ben-Gurion University, 2006 [Hebrew]); Yehuda ben Dor, “A Study in Mordechai Yosef of Izbica’s *Mei Hashiloach*” (Ph.D. diss., Hebrew University, 2008 [Hebrew]). About the dispute between master and disciple at the basis of the split, see Morris M. Faierstein, “Kotsk–Izbica Dispute: Theological or Personal?,” *Kabbalah* 17 (2008): 75–79.

10. On the Radzin Hasidic group, see Yehudah Leib Levin, *Ha-admorim me-izbica* (Jerusalem: Nahliel, 1969); Shlomo Zalman Shragai, *Bi-nivei ḥasidut izbica-radzin* (Jerusalem, 1972–1974), vols. 1–2.

11. About tekhelet as a sign of piety and even pretentiousness, see below.

12. I would like to thank Batsheva Bertman for this observation.

13. Gershon Henekh Leiner, *Eyn hatekhelet* (Warsaw: Meir Yehiel Halter, 1891), 283.

14. See “Plant-Based Blue,” in Chap. 1 above.

15. Nathan Shapiro, *Sefer matzat shimurim* (Venice: Antonio Rezzini, 1660), 25b.

16. Hillel Moshe Meshl Gelbstein, *Mishkenot le-abir yaakov: Petil tekhelet* (Jerusalem: Frumkin, 1890), 3b (1st pagination).
17. Shalom Dovber Schneersohn, *Igrot kodesh* (New York: Kehot, 1982), 1:351–354 (letter no. 158 to Leiner's son from 1907); Menachem Mendel Schneerson, *Sifot kodesh* (New York: Kehot, 1974), 8:101. Both leaders presented another kabbalistic argument following Haim Vital, an argument that will be presented below.
18. Michael K. Silber, "Schlesinger, Akiva Yosef," *YIVO Encyclopedia of Jews in Eastern Europe* (New Haven, CT: Yale University Press, 2008), 2:1672–1674.
19. Sagiv, "A New Perspective on the Tekhelet Controversy," 81–90.
20. See "Herzog and the Beginning of Scientific Research of Tekhelet," in Chap. 4 above.
21. Leiner, *Eyn batekhelet*, 30.
22. Supporters of tekhelet note that Avraham Hāzan, a leader of the Bratslav Hasidim in the period before World War I, was the major supporter of Leiner's tekhelet among Bratslav Hasidim. On attitudes of Bratslav Hasidim toward Leiner's tekhelet, see Shragai, *Bi-nivei ḥasidut izbica-radzin*, 2:124–127. On Avraham Hāzan's support, see *Siaḥ sarfei kodesh* (Jerusalem: Meshekh ha-naḥal, 1991), 3:201–202. On Bratslav Hasidim who avoided tekhelet, see *Siaḥ sarfei kodesh*, 3:137.
23. David Assaf, *Untold Tales of the Hasidim: Crisis and Discontent in the History of Hasidism*, trans. Dena Ordan (Waltham, MA: Brandeis University Press, 2010), 120–153.
24. On the antinomianism of the Radzin Hasidism, see, e.g., Shaul Magid, *Hasidism on the Margin: Reconciliation, Antinomianism, and Messianism in Izbica/Radzin Hasidism* (Madison: University of Wisconsin Press, 2003), 205–248. On the controversies of the leaders of the Izbica-Radzin dynasty with other Hasidic groups, see, e.g., Yehiel Yeshaia Trunk, *Poyln: My Life Within Jewish Life in Poland*, trans. Anna Clarke, ed. Piotr Wróbel and Robert M. Shapiro (Toronto: University of Toronto Press, 2007), 77–91.
25. For a publication that reflects the reception of tekhelet in American Modern Orthodoxy, see *Tekhelet: The Renaissance of a Mitzvah*, ed. Alfred S. Cohen (New York: Yeshiva University Press, 1996). On the reception of tekhelet at the Rabbi Isaac Elchanan Theological Seminary (affiliated with Yeshiva University), see David J. Landes, "Traditional Struggles: Studying, Deciding, and Performing the Law at the Rabbi Isaac Elchanan Theological Seminary" (Ph.D. diss., Princeton University, 2010), 214–239.
26. The term is a portmanteau in Hebrew combining the words *ḥaredim* (ultra-Orthodox) and *leumiim* (national). On the Ḥardalim, see Yair Sheleg, *Ha-ḥardalim* (Jerusalem: Israel Democracy Institute, 2020).
27. *Out of the Blue* (exhibition catalog), ed. Oree Meiri, Yigal Bloch, and Yehudah Kaplan (Jerusalem: Bible Lands Museum, 2018).
28. For a review of the exhibit, see Gadi Sagiv, "Exhibit Review: *Out of the Blue*, The Bible Lands Museum, Jerusalem, Israel," *Images: A Journal of Jewish Art and Visual Culture* 13 (2020): 175–179.
29. See the recording of the lecture, "Techeles hachodosh," June 18, 2011, 50:25. The recording is accessible through the YUTorah app for smartphones, or via <https://www.tekhelet.com/MML/Techeles%20Hachodosh.MP3> (accessed January 18, 2021).
30. Leiner, *Eyn batekhelet*, 13.
31. Haim Karlinsky, *Ha-rishon le-shoshelet brisk* (Jerusalem: Makhon Yerushalayim, 1984), 266–267.
32. Leiner, *Eyn batekhelet*, 14.

33. Hershel Schachter, *Nefesh ba-rav* (Jerusalem: Flatbush Beth Hamedrosh, 1999), 53–54 (Hebrew); Yosef Dov Halevi Soloveitchik, *Shiurim le-zekher aba mari* (Jerusalem: Mosad Harav Kook, 2002), 1:249 (Hebrew).

34. Schachter, *Nefesh ba-rav*, n. 26.

35. See “The Fight Between the Squid and the Snail,” in Chap. 4 above.

36. Israel Zideman, “The Rediscovery of the Tekhelet *Ḥillazon* in Our Days,” *Hamaʿayan* 35 (1995): 29–32 (Hebrew).

37. See, e.g., Baruch Sterman, “The Science of Tekhelet,” in *Tekhelet: The Renaissance of a Mitzvah*, ed. A. S. Cohen (New York: Yeshiva University Press, 1996), 63–78.

38. Helen De Cruz, “Religion and Science,” *Stanford Encyclopedia of Philosophy* (Summer 2019), ed. Edward N. Zalta, <https://plato.stanford.edu/archives/sum2019/entries/religion-science> (accessed November 15, 2020). The growing interest in this topic is evident from the fact that several reference books on the subject have been published in recent decades. E.g., see Gary B. Ferngren, ed., *The History of Science and Religion in the Western Tradition: An Encyclopedia* (New York: Garland, 2000); *The Oxford Handbook of Religion and Science* (Oxford: Oxford University Press, 2006); Peter Harrison, ed., *The Cambridge Companion to Science and Religion* (Cambridge: Cambridge University Press, 2010).

39. David B. Wilson, “The Historiography of Science and Religion,” in *The History of Science and Religion in the Western Tradition*, ed. Ferngren, 2–11.

40. Ira Robinson, “Judaism Since 1700,” in *The History of Science and Religion in the Western Tradition*, ed. Ferngren, 329–332; Shalom Rosenberg, *Torah u-madda ba-hagut bayebudit ba-ḥadasha* (Jerusalem: Ministry of Culture and Education, 1988); David B. Ruderman, “Judaism to 1700,” in *The History of Science and Religion in the Western Tradition*, ed. Ferngren, 270–276.

41. Norman Lamm, *Torah Umadda: The Encounter of Religious Learning and Worldly Knowledge in the Jewish Tradition* (Northvale, NJ: Jason Aronson, 1990).

42. Zideman based himself on the halakhic opinion of Rabbi Levy Itzhak Halperin. See the references to Halperin on Zideman’s website: <https://www.tekhelet.info> (accessed February 21, 2021).

43. Yosef Shalom Eliashiv, “Tekhelet ba-tsitsit ba-zman ha-zeh,” *Halikhot sadeh* 109 (1998): 9–10 (Hebrew).

44. Menachem Mendel Adler, *Kuntres tekhelet ve-argaman* (Jerusalem: Hamosad Le’idud Limud Hatorah, 1999), 43–44.

45. Shlomo Aviner, “Brief Letters,” *Iturei kobanim* 140 (1996): 15–17 (Hebrew).

46. See n. 29 above.

47. *b. Šabb.* 26a.

48. Naama Sukenik et al., “Purple-Dyed Textiles from Wadi Murabbaʿat,” *Archaeological Textiles Review* 55 (2013): 46–54.

49. *y. Sanh.* 10:1, 50a; *Numbers Rabba* 18:4.

50. On the image of Korah in the midrash, in this context, see David Biale, “Korah in the Midrash: The Hairless Heretic as Hero,” *Jewish History* 30 (2016): 15–28.

51. *Ibid.*, 20.

52. See, e.g., David Hoffman, “Korah’s Rebellion in Blue and White,” <http://www.jtsa.edu/korahs-rebellion-in-blue-and-white> (accessed December 19, 2020); Ronen Neuwirth, “Tallit Entirely with Tekhelet,” <https://mikve.net/content/599> (accessed December 19, 2020).

53. *Ha-shalav ba-aharon: Mehkerei ha-ḥasidut shel gershom shalom*, ed. David Assaf and Esther Liebes (Jerusalem: Magnes, 2008), 71; see also 77, 92. Gershom Scholem speculated

that these polemics were directed toward the early circles of Eastern European Hasidim, whereas other scholars objected to his proposal. Scholem also wondered whether the early Hasidism used threads of tekhelet, which seems unlikely. On ben Pelet was mentioned in the Korah affair. It seems that he was mentioned in the polemical text because *pelet* rhymes with *tekhelet*.

54. See “Reception and Rejection of Tekhelet by Orthodox Jews,” above.

55. *Hamelitz*, April 4, 1890: 5.

56. Tekhelet and the Temple, as well as the messianic aspects of tekhelet, will be discussed in the next section.

57. On the messianic aspects of tekhelet, see “Messianic and National Sentiments,” in Chap. 4 above; and “Messianism and the Temple” below.

58. Magid, *Hasidism on the Margin*.

59. See n. 4 above.

60. See their debate in Shmuel Ariel, *Ma’amarim be-noseh tekhelet* (Otniel: Beit Vaad Har Hevron, 2005).

61. *Ibid.*, 89.

62. See “Reception and Rejection of Tekhelet by Orthodox Jews,” above.

63. Shlomo Fischer, “Fundamentalist or Romantic Nationalist? Israeli Modern Orthodoxy,” in *Dynamic Belonging: Contemporary Jewish Collective Identities*, ed. Harvey E. Goldberg, Steven M. Cohen, and Ezra Kopelowitz (New York: Berghahn, 2012), 91–111. It should be mentioned that this author is not Rabbi Shlomo Fischer, who opposes the renewal of tekhelet.

64. David C. Jacobson, *Beyond Political Messianism: The Poetry of Second-Generation Religious Zionist Settlers* (Brighton, MA: Academic Studies Press, 2011), 157–161.

65. Motti Inbari, *Jewish Fundamentalism and the Temple Mount: Who Will Build the Third Temple?*, trans. Shaul Vardi (Albany: SUNY Press, 2009); idem, *Messianic Religious Zionism Confronts Israeli Territorial Compromises* (Cambridge: Cambridge University Press, 2012).

66. See “Tekhelet in the Hebrew Bible,” in Chap. 1 above.

67. Haim Vital, *Pri etz haim* (Koretz: Johann Anton Krieger, 1785), *Sha’ar ha-tsitsit*, chaps. 4–5, 18a–19b.

68. Israel of Kozienice, *Avodat israel* (Warsaw, 1878), par. *Avot*, 76d.

69. The leaders of Ḥabad Hasidism presented those arguments concurrently. See n. 17 above.

70. Such hopes may have emerged following the approval to reconstruct the ruined synagogue of Yehudah he-Hasid in Jerusalem. See Arie Morgenstern, *Hastening Redemption: Messianism and the Resettlement of the Land of Israel*, trans. Joel A. Linsider (New York: Oxford University Press, 2006), 111–133.

71. On Lipschutz, see, e.g., Mordechai Mayer, “R. Yisrael Lipschuetz: His Biography, Writings and a Preliminary Examination of the Methodology in His Commentary to the Mishnah: *Tiferet Yisrael*” (Ph.D. diss., Bar-Ilan University, 2004; Hebrew); Shalom Rosenberg and Moshe Weinstock, “Forgotten Manuscripts of the Lipschutz Family,” *Daat* 61 (2007): 97–112 (Hebrew); for research on Rabbi Israel Lipschutz, see 97n2.

72. Israel Lipschitz, *Mishnayot seder moed im peirush tiferet israel*, pt. *Kupat rochlim* (Danzig: Rathke and Schroth, 1843), 101–108.

73. On Kalisher, see Jacob Katz, “Demuto ha-historit shel ha-rav tsevi hirsh kalisher,” in *Leumiyut yehudit* (Jerusalem: Zionist Library, 1979), 285–307; Jody E. Myers, *Seeking Zion:*

Modernism and Messianic Activism in the Writings of Tsevi Hirsch Kalischer (Oxford: Littman Library of Jewish Civilization, 2003). On his support of the opinion that the *hillazon* is not required for tekhelet-colored objects used in the Temple, see Tzvi Hirsch Kalisher, *Drishat tzion*, ed. Yehuda Etzion (Jerusalem: Mosad Harav Kook, 2002), 99–120, 161–163 (Hebrew).

74. Sagiv, “A New Perspective on the Tekhelet Controversy,” 81–90.

75. Gershon Henekh Leiner, *Sefunei temunei hol* (Warsaw: Haim Kelter, 1887), 12.

76. Gershon Henekh Leiner, *Petil tekhelet* (Warsaw: Haim Kelter, 1888), 96.

77. See n. 5 above.

78. Leiner, *Eyn batekhelet*, chap. 3, par. 1, 262–264.

79. This tradition was presented by Shragai, the internal historian of the Radzin group: Shragai, *Bi-ntivei hasidut izbica-radzin*, 2:104–106. However, the first citation of that tradition was done by Hillel Moshe Meshl Gelbstein, the nineteenth-century fierce opponent of tekhelet: Gelbstein, *Mishkenot le-abir yaakov: Petil tekhelet*, 11a (1st pagination). Both Shragai and Gelbstein note that the book is unavailable. For Gelbstein, that unavailability seems to raise doubts about this tradition.

80. Yechiel Michel Tukachinsky, *‘Ir ha-kodesh ve-ha-mikdash*, pt. 5 (Jerusalem: Salomon, 1970), 37–60 (Hebrew).

81. Ibid. The book was published posthumously by the author’s son. The discussion about the legal possibility of renewing the Temple liturgy is in vol. 5. The correspondence with Herzog is on pp. 55–60. Letters by Tukachinsky to Herzog appear in Herzog’s archive, pp. 62–65.

82. See “What Is the Hue of Tekhelet? Modern Debates,” in Chap. 4 above.

83. Inbari, *Jewish Fundamentalism and the Temple Mount*.

84. *Tsfia: Hikrey mikdash* 5 (1996).

85. Menachem Mendel Kasher, *Torah shlema* (Jerusalem: Machon Torah Shlema, 1967), vol. 25, addendum to par. *Truma*, 3–11.

86. *Tsfia: Hikrey mikdash* 5 (1996): 88.

87. Notably, a few years earlier, the Temple Institute also criticized Aviner for his passive stance regarding ascent to the Temple Mount: Israel Ariel, “When Will the Temple Be Rebuilt,” *Tsfia* 2 (1985): 49–58 (Hebrew).

88. See “Messianic and National Sentiments,” in Chap. 4 above.

CONCLUSION

1. Nathan Zach, “A Journey in Blue,” *Igra* 2 (1985/86): 309–324 (Hebrew).

2. Yosef Haim Brenner, “Bein mayim le-mayim” (Warsaw: Sifrut, 1909), 4.

3. Nurit Govrin suggested that Brenner directed his criticism to the Hebrew author Gershon Shofman: Nurit Govrin, *Brenner: “Oved etsot” u-moreh derekh* (Tel Aviv: MOD, 1991), 141.

4. Zach, “A Journey in Blue,” 313.

5. Ruth Kartun-Blum, “On the Significance of Color Descriptions in the Poetry of Yocheved Bat-Miriam,” in *Mehkerei sifrut mugashim le-shimeon halkin*, ed. Ezra Fleisher (Jerusalem: Magnes, 1973), 206–210 (Hebrew).

6. Lillian Debi-Guri, “The Metaphorical Value of Colors in the Poetry of Uri Zvi Greenberg: Notes on the Relation of His Poetry to Kabbalistic Sources,” in *Shira u-mistorin*:

Tyunim le-yovlo shel ha-meshorer sh. shalom, ed. Yoav Elstein and Haim Shoham (Ramat Gan: Bar-Ilan University Press, 1985), 73–87 (Hebrew).

7. Uri Zvi Greenberg, *Be'ovi ha-shir: Mivhar shirim*, selected and annotated by Dan Miron (Jerusalem: Mosad Bialik, 2007), 432.

8. Hillel Barzel, *Amir Gilboa: Monografia* (Tel Aviv: Sifriyat Poalim, 1984), 72–81; Haya Shaham, “Amir Gilboa’s Poetry in Confrontation with Alterman’s Poetics,” *Dapim le-Mehkar be-Sifrut* 7 (1990): 45–48 (Hebrew).

9. Gideon Ofrat, “Blood,” in *Im ha-gav la-yam: Dimuyei ha-makom ba-omanut ha-yisraelit uve-sifruta* (Tel Aviv: Omanut Israel, 1990), 167–212 (Hebrew).

10. Gideon Ofrat, “More on Blue,” *Ha-mahsan shel gideon ofrat*, April 2, 2016, <https://gideonofrat.wordpress.com/2016/04/02/%D7%A2%D7%95%D7%93-%D7%A2%D7%9C-%D7%94%D7%9B%D7%97%D7%95%D7%9C> (accessed January 24, 2021; Hebrew).

11. *Likutei moharan* (Jerusalem: Meshekh ha-naḥal, 2002), 25 (pt. 1, sec. 18, par. 7).

12. Aryeh Kaplan, *Jewish Meditation: A Practical Guide* (New York: Schocken, 1985), 71. When Kaplan discussed “blue,” he meant tekhelet.

13. *Gesammelte Schriften von Rabbiner Samson Raphael Hirsch*, ed. Naphtali Hirsch (Frankfurt am Main: J. Kauffmann, 1921), 3:332–337.

14. Haim Be’er, *Feathers*, trans. Hillel Halkin (Waltham, MA: Brandeis University Press, 2004), 111–122.

15. *Ibid.*, 111.

16. *Ibid.*, 117–118.

17. Itzik Manger, *Lid un Ballade* (New York: Marstin, 1952), 347–351; *idem*, *The World According to Itzik: Selected Poetry and Prose*, trans. and ed. Leonard Wolf (New Haven, CT: Yale University Press, 2002), 86–89. Notably, in the Yiddish original, the protagonist is “Yid,” which can be translated as either “man” or “Jew.” While the translation uses the words “man” or “traveler,” I chose the translation to “Jew” because it highlights my argument on the connection between Jews and blue. On the complex denotations of the word *yid*, see Cynthia M. Baker, *Jew* (New Brunswick, NJ: Rutgers University Press, 2017), 52–57.

18. Some of Manger’s readers noted the prominent role of blue in his poetry. See, e.g., M. Rabinowitz, “The Blue Crown of Yearnings,” *Al ha-mishmar*, June 9, 1961: 6 (Hebrew).

19. באפט דער שענקער און ס'נאפט זיין פרוי, / ווי ס'שפארט פון דעם ייד ארויס דאס בלוי // און פילט אן דאס צימער און
שפארט זיך ארויס / און הילט איין מיט בלאַקייט דאס גאנצע הויז

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