

According to this version, it is clear that the Beit HaLevi conceded that if the "fish" (i.e., the *hillazon*) was not available (and it was not), and for that reason the great Torah leaders never discussed it and decided not to use it, but rather—and this is what actually did happen—that "it became clear to us that this fish or the dyeing process did cease and the method was forgotten . . . thereby causing a break in the transmission [and for that reason use of *tekhelet* ceased]—at that point, the halakhic arguments could and do serve as proof."

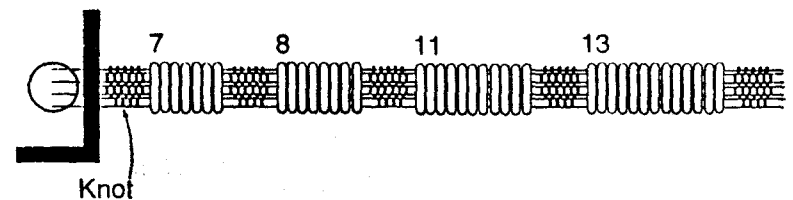
With the help of the Almighty and His creations, the transmission and the halakhah have been renewed once again, and it is possible to observe the mitzvah of wearing a thread of *tekhelet*, as in days of old.

Rabbi Hershel Schachter

Using *Tekhelet* in *Tzitzit*

INTRODUCTION

The *tzitzit* which are attached to each corner of the *tallit* are tied in a precise manner. Through a hole in each corner, four strings are inserted halfway along their length to produce eight *semi*-strings. The semi-strings are knotted together at a position close to the garment. One of the semi-strings is then wound around the others to produce a coil of seven turns. This coil ends with a knot, which is followed by a coil of eight turns and a knot, followed by a coil of eleven turns, a knot, and finally a coil of thirteen turns and a knot. This process results in a tassel of four coiled sections (each section of coils is called a *hulya*) delineated by knots, and ending in eight hanging strings.



This method of tying *tzitzit* has been extant for hundreds of years. However, the Torah describes the *tzitzit* as having a *petil tekhelet* (blue string). When *tekhelet* was available, how did the *tzitzit* look? With the loss of the *tekhelet*, were changes in the method of tying

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the *tzitzit* introduced? Recent efforts to rediscover the *tekhelet* take these questions out of the theoretical realm and thrust them squarely into the realm of the practical and relevant.

ROLE OF THE *TEKHELET* STRINGS

The Gemara rules that four strings are to be inserted into each corner of the *tallit* to produce eight semi-strings (Menahot 41). Of these, some are to be white, and the others *tekhelet*.¹ Left unclear, however, is the distribution between the white and *tekhelet* strings.

Tosafot write that the mitzvah of *tzitzit* requires that two *tekhelet* strings and two white strings be inserted into the *tallit* to produce four white semi-strings and four *tekhelet* semi-strings (Menahot 38, s.v. *ha-tekhelet*).

The Ra'avad writes that only one of the four strings is *tekhelet*, and three are white, which produces six white semi-strings and two *tekhelet* semi-strings (Hilkhos Tzitzit, chap. 1).

The Rambam, restricting the *tekhelet* even more, writes that all of the strings are white except for one semi-string of *tekhelet* (Hilkhos

1. The Torah does not prescribe any specific color for the *tzitzit* strings, except that there be a *petil tekhelet*. The Mishnah, however, refers to the ordinary strings with the description "white" (Menahot 38). The Rambam writes that this is because there is no obligation to dye them, implying that any color is acceptable for the "white" strings (Hilkhos Tzitzit 1:1). In this essay we will conform to this convention, so the *tzitzit* can be said to have two components—white strings and *tekhelet* strings.

Rashi (s.v. *min kanaf*) writes that the reason the Mishnah chose the color white is because the *tallit* is usually white, so the *tzitzit* are also to be white. Thus, if the *tallit* is gray, then the "white" strings of the *tzitzit* should also be gray. The Rambam appears to concur (2:8); see *Bet Yosef* 9 for a discussion of the Rambam's opinion. The *Shulhan Arukh* refers to this opinion, although the Rema writes that we insist on white strings for *tzitzit* regardless of the color of the *tallit* (9:5). The *Ateret Zekenim* and the *Responsa Bach* 24 say that the prophecy of Daniel, who described the image of Hashem as wearing "snow-white clothing" (Dan. 7:9), refers to the *tallit* and the *tzitzit*. The *Mishnah Berurah* thus recommends to have a white *tallit* with white strings to avoid controversy, and to emulate the "garb" of Hashem.

Tzitzit, loc. cit.). This means that one string is dyed halfway; thus, when folded there are seven white semi-strings and only one *tekhelet* semi-string.

Although this dispute may appear to be about subtle details only, the Netziv suggests that the very nature of the role of *tekhelet* is at issue (*Ha'amek She'elah*, She'elta 127:11). He claims that the Rambam and the Ra'avad share a similar view that is fundamentally different from that of Tosafot. The Rambam and the Ra'avad understand that when the Torah speaks of *tzitzit* it means the white strings, and not the *tekhelet*. This position reflects the simple understanding of the *pasuk*: "They shall make *tzitzit* upon the corners of their garments forever. They shall place on the *tzitzit* of the corners a string of *tekhelet*" (Numbers 15:38). The implication is that the *petil tekhelet* is attached to the *tzitzit*, but is not a component of the *tzitzit* per se.²

On the other hand, Tosafot write: "How do we know that two white strings and two *tekhelet* strings are required? Perhaps the Torah only required *tekhelet* for the wrappings, in which case we would have one *tekhelet* string and three white strings. The answer is that since the Torah mandates both components, logically they should be equal [in proportion]" (Menahot 38, s.v. *ha-tekhelet*).

From this argument it appears that Tosafot view the role of the *tekhelet* strings as the same as the role of the white strings. In other words, Tosafot hold that the *tzitzit* are composed of two *equivalent* components: white and *tekhelet*. They derive this understanding from their interpretation of the Gemara, which we will mention below.

The Netziv notes that these conflicting positions—that of Tosafot, who view the *tekhelet* as a component of the *tzitzit*, and that of the Rambam and the Ra'avad, who view the *tekhelet* as separate from the *tzitzit*—have their roots in a *mahaloket tannaim* between the Sifrei in parshat Shelah and the Sifrei in parshat Ki Tetze. In Shelah,

2. See Rashi, Deuteronomy 32:5, who explains that the word *petil* connotes winding.

the passage reads “three of wool and the fourth of *tekhelet*,” which corresponds to the opinion of the Ra’avad, and the Netziv considers this in line with the Rambam’s view as well. In *Ki Tetze*, the passage reads, “four strings of *tekhelet* and four strings of white,” in accord with Tosafot.³

SUPPORT FOR TOSAFOT’S VIEW

Structure of the Mishnah

The Mishnah states: “The *tekhelet* is not indispensable for the white, and the white is not indispensable for the *tekhelet*. The *tefillin* on the arm is not indispensable for the *tefillin* on the head, and the *tefillin* on the head is not indispensable for the *tefillin* on the arm” (Menahot 4:1).

The Mishnah refers to two mitzvot, *tzitzit* and *tefillin*. In both cases, the Mishnah rules that each of the two components of the mitzvah is independent of the other. Thus, regarding the *tefillin*, the Mishnah teaches that one who puts on just the *shel rosh* and not the *shel yad* has still fulfilled the mitzvah of the *shel rosh*. Likewise, one who puts on only the *shel yad* fulfills the mitzvah of the *shel yad*.

However, regarding the *tzitzit*, the explanation of this halakhah is not as clear. Ostensibly, the most obvious explanation is as presented by Tosafot: “If one attached two strings of one type [*tekhelet* or white], he has fulfilled [his obligation], just as [the Mishnah] writes regarding the *tefillin* that [the absence of] the *shel yad* does not preclude putting on the *shel rosh*” (Menahot, loc. cit., s.v. *ha-tekhelet*).

Preserving the parallelism of the Mishnah, Tosafot explain that the Mishnah refers to one who ties only the white strings or only the *tekhelet* strings. Since Tosafot understand that each part of the *tzitzit*

3. There are questions of *girsā* in this passage; however, our *girsā* reads as presented.

exists independently, and both parts perform the same function, it is physically possible to do what the Mishnah describes, and attach only the white portion of the *tzitzit* or only the *tekhelet* portion of the *tzitzit*.

However, the Rambam does not, and cannot, explain the Mishnah this way (Hilkhos Tzitzit 1:4). According to the Rambam the *tzitzit* is all white, and the *tekhelet* is wound around it. So without any white one cannot attach the *tekhelet* alone. There is nothing for it to wind around! Thus, the Rambam is forced to give a more complicated explanation of the Mishnah, which forfeits its parallel structure.⁴

The Gemara’s Presumption

The Netziv (loc. cit.) offers a more compelling support for Tosafot, which further refutes the Rambam, from the opening passage of the Gemara that comments upon this same Mishnah. The Gemara remarks that the Mishnah appears incompatible with the position of Rabbi, who rules that without *tekhelet* the *tzitzit* is invalid, and without the white strings the *tzitzit* are invalid (Menahot 38). By suggesting this, the Gemara was taking for granted an interpretation in the Mishnah in which the *tzitzit* are valid even though no white was attached.⁵ In fact, the Gemara continues by quoting a Beraita in which the opinion contrary to Rabbi’s is phrased: “[The Torah] implies [that] each one [is valid] by itself.” Since this position is possible only according to Tosafot, and not according to the Rambam,

4. The Rambam’s explanation will be discussed further on.

5. Consider the *lulav* and *etrog* on Sukkot. All four *minim* are necessary, so even with only one *min* missing there is no partial fulfillment by taking the others. Contrasting the four components of the four *minim* with the two components of the *tzitzit*, our Mishnah comes to state that neither of the two components of the *tzitzit*—two white strings and two *tekhelet* strings—depends on the presence of the other to be meaningful.

the Netziv demonstrates that the opinion of Tosafot emerges from the Gemara.⁶

Gardumi Tzitzit

Although the *Shulhan Arukh* does not directly address the matter of *tekhelet*, and so perforce does not render a decision on the dispute of the Rambam and the Ra'avad with Tosafot, we may be able to infer indirectly what its decision would have been.

The Gemara records a tradition that in some circumstances we allow *gardumi tzitzit* (Menaḥot 38). This is the term for *tzitzit* that

6. To reconcile the Mishnah with Rabbi, the Gemara suggests that perhaps the Mishnah does not mean what we thought; rather it refers specifically to one case: *gardumi*. This is the term for *tzitzit* which were attached properly but later ripped. The Gemara records a tradition that in some circumstances we allow *gardumi*. Based on this halakhah, the Amoraim suggest that Rabbi (who edited the *mishnayot*) intended the Mishnah to mean that if the *tzitzit* had been *kasher* at one time, but now some strings have ripped—whether the white ones or the *tekhelet* ones—it is still *kasher*. If this is actually the explanation of the Mishnah, then it can be consistent with the opinion of Rabbi, as well as the *hakhamim*. However, since the halakhah is against Rabbi, there is no need to understand the Mishnah in this way; rather the simpler, more straightforward way presented above. Therefore, practically speaking, the interpretation of the Mishnah which we accept is, loosely expressed: white strings or *tekhelet* strings are each adequate to partially fulfill the mitzvah of *tzitzit*. As mentioned above, the Rambam (Hilkhot Tzitzit 1:4) does not explain the Mishnah this way, even when presenting the normative halakhah. Quoting the Mishnah, he explains *ha-tekhelet einah ma'akhevet et ha-lavan* as meaning that without *tekhelet*, the white strings are sufficient (exactly as Tosafot would explain), and *ve-ha-lavan eino ma'akhevet et ha-tekhelet* as meaning that if the white strings tear off, then the *tzitzit* remain valid (which is the rule of *gardumi*). Note that the Rambam explains the second part of the Mishnah as Rabbi does, even though he rejects Rabbi's position! He was forced to this because there is no way to attach only *tekhelet* the way he describes. In any event, it is clear that the flow of the Gemara is smoother if we understand the functions of *tekhelet* and white strings as Tosafot do.

The Netziv attempts to defend the Rambam based on the two passages in the Sifrei mentioned above.

were attached properly but later ripped. Although many of the debates surrounding this halakhah are narrow in scope, and find relevance only within the area of *gardumin*, one prominent dispute among the Rishonim relates to our discussion. Tosafot write that the *tzitzit* remain *kasher*, based on the rule of *gardumi*, only if both white strings or both *tekhelet* strings are intact (ibid., s.v. *ele le-gardumin*). Clearly, this is based on their position regarding the mitzvah of *tzitzit* as described above; namely, that the *tekhelet* is an independent half of the *tzitzit* just as the white is an independent half. Thus, the rule of *gardumi* implies that as long as both halves were initially attached properly and at least one complete half of the *tzitzit* remains intact, the whole is completely valid.

The other opinion quoted in the *Shulhan Arukh* is that the rule of *gardumi* applies to all of the *tzitzit* strings equally (Orah Hayyim 12:1). This view does not indicate anything about the role of *tekhelet*, so one can side with either the Rambam or Tosafot and still accept this opinion.

Although the *meḥaber* quotes both opinions in the *Shulhan Arukh*, he accepts the latter opinion, *le-ma'aseh*. Thus, we cannot determine what his position is regarding the number of *tekhelet* strings. However, the Rema writes that we follow Tosafot, indicating that he accepts their position regarding the number of *tekhelet* strings as well.

Material Valid for Tzitzit Strings

Regarding the material of the white strings, the Gemara refers to two *derashot* (Menaḥot 39). From one we learn that strings of wool or linen are always acceptable, and from the other we learn that strings of the same material as the *tallit* are acceptable. Thus, for a silk *tallit* one can use wool, linen, or silk strings.⁷ The *meḥaber*

7. Regarding attaching linen strings to a silk *tallit*, there is some controversy as to whether this is proper, but the Gemara does not mention any objection. See Orah Hayyim 9:2 and *Mishnah Berurah* 108 about this.

writes in the *Shulhan Arukh* that he is unsure whether one may mix strings of wool and silk on a garment of silk (Orah Hayyim 9:4). The *Mishnah Berurah* quotes from the *Artzot ha-Hayyim* that the *mehaber* can have no doubts about a case in which two strings on each corner are silk and two are wool, because this could have been the composition if *tekhelet* were used.⁸ The *Mishnah Berurah* concurs with this argument, indicating that he rules in accord with Tosafot regarding the number of *tekhelet* strings.

Typically, in a *mahaloket* such as this, in which the disputants are Hakhmei Ashkenaz (as represented by Tosafot) against Hakhmei Sefarad (Rambam and Ra'avad), Ashkenazim follow their tradition, and Sefardim theirs. Curiously, the Gra is quoted as siding with the Hakhmei Sefarad, although unconvinced whether to follow the Rambam or Ra'avad. Practically, *halakhah le-ma'aseh*, unless one consistently follows the opinions of the Gra, Ashkenazim ought to maintain the tradition of Tosafot to tie two white strings and two *tekhelet* strings on each corner.

WINDING THE TEKHELET

Nowadays, our custom of winding the longer white string around the other white strings is a remembrance of the original halakhah of *tekhelet*, so we do not necessarily conform to the instructions found in the Gemara, as mentioned below (Rambam, Hil. Tzitzit 1:10; Tosafot, Menahot 39, s.v. *lo yifhot*). However, when using actual *tekhelet*, one ought to be particular to follow the rules as they appear in the Gemara and Rishonim.

Regarding the method of tying the *tzitzit*, the Gemara (loc. cit.) states:

8. *Ha-Me'ir la-Aretz* 27. However, see also 24. The *Artzot ha-Hayyim* writes quite a few times that there were two strings of *tekhelet* (see his *Lev ha-Aretz* on 2,3). Perhaps one may infer that the *mehaber* does not hold with Tosafot from the fact that he does not mention the exclusion of the *Artzot ha-Hayyim*.

What is the size of *hulya*? A Beraita records: Rabbi says, "Such that he can wind, double and triple." A Beraita records: One who [is about to] minimize should not [stop with] less than seven, and one who [is about to] maximize should not exceed thirteen: no less than seven, corresponding to the seven strata of Heaven, and no more than thirteen, corresponding to the seven strata of Heaven plus the six regions between.

Further, the Gemara states: "Rava said that we can deduce from that [Beraita mentioned in the passage] that one must make a knot upon [completing] each *hulya*" (Menahot 38). However, the Gemara rejects the proof from the Beraita.

These two passages contain most of the rules for making *tzitzit*. Each *hulya* must have at least three coils, and there is an ambiguous reference to a minimum of seven and maximum of thirteen. Additionally, it is not conclusive whether one must tie a knot after each *hulya*.

Some Rishonim (Ra'avad 1:7, and end of Tosafot 39, s.v. *lo yifhot*) understand the numerical limits of seven and thirteen to apply to the number of coils per section (*hulya*),⁹ and this is our custom without *tekhelet*.¹⁰ However, most Rishonim (Rashi, Tosafot, Rambam) understand the limits to refer to the number of *hulyot*, not to

9. The Ra'avad reconciles the statement mandating three coils per *hulya* with the statement requiring between seven and thirteen coils per *hulya*. He writes that the three coils refer to the *tekhelet*, and the seven, to the total number of strings. This is in accordance with his method of winding the strings.

10. This is the basis of our current practice of having four sections of coils numbering seven, eight, eleven, thirteen—no less than seven and no more than thirteen. The Gemara does not necessarily prescribe four sections; this figure is based on Rashi's comment to the Torah in parshat Shelah (Numbers 15:39). He writes that the *tzitzit* remind us of the 613 mitzvot as follows: the word *tzitzit* has a numerical value of 600, plus 8 semi-strings, plus 5 knots, equals 613. Thus, in order to allow for five knots, we choose to have four sections of coils surrounded by the five knots. Tosafot write that they have no explicit Talmudic source for this remark of Rashi's (Menahot 39, s.v. *lo yifhot*), but we maintain the practice anyway.

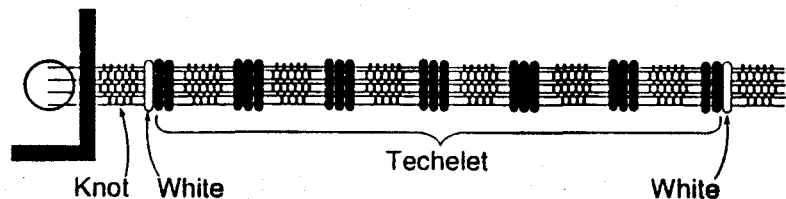
the number of coils per *hulya*. Regarding each *hulya*, these Rishonim relate the other passage in the Gemara which mandates three coils in each *hulya*. Thus, the majority of Rishonim prescribe between seven and thirteen *hulyot*, each of which has three coils. Although there is no clear consensus about whether knots are required on each *hulya*,¹¹ our practice currently is to require knots, so presumably we would maintain this insistence even with *tekhelet*.

An additional passage of Gemara (Menahot 39) relates specifically to winding *tekhelet*:

The Beraita records: When one begins, he begins with white, [as the Torah states,] “*ha-kanaf [tzitzit]*” [implying that the *tzitzit* must correspond to the] nature of the *kanaf [tallit]*. When one concludes, he finishes with white, [because of the rule] “We prefer to increase [things] in degrees of holiness, and not reduce [them].”

In other words, we begin to wind the coils with a white string rather than a *tekhelet* string, and we end the windings with a white string. However, more details are not explicit, and are subject to a *mahaloket rishonim*.

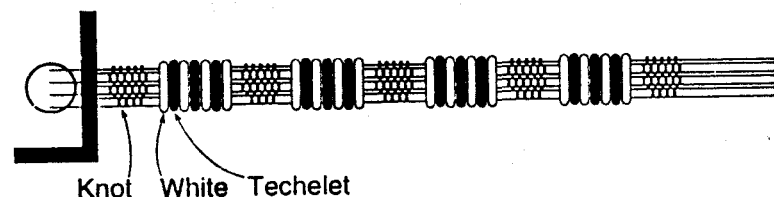
The Rambam writes that just the first coil and the last coils are white; all of the rest of the coils are *tekhelet* (Hilkhos Tzitzit 1:7).¹²



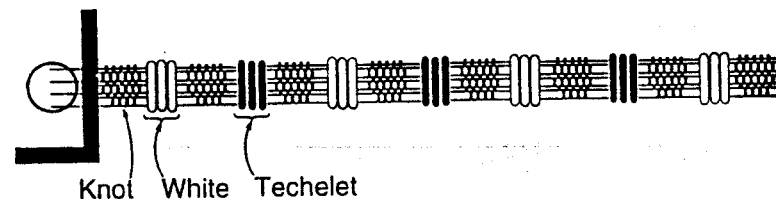
11. Tosafot (ibid.) require knots, but suggest that they may only be required between pairs of *hulyot*. The Rambam's opinion (Hilkhos Tzitzit 1:7) is unclear on this issue. The Ra'avad requires knots, but not the way we make them.

12. See above, n. 11.

The Ra'avad agrees with the Rambam that “first” and “last” refer to the coils (Hilkhos Tzitzit 1:7). However, he understands that *each hulya* begins and ends with a coil of white, and the coils in between alternate such that there are at least three coils of *tekhelet* separated by coils of white. So, according to the Ra'avad, each *hulya* will consist of white, *tekhelet*, white, *tekhelet*, . . . white, totaling at least seven coils. The Ra'avad adds that there are four *hulyot* in each *tzitzit*.¹³



Tosafot write that each *hulya* consists of three uniform coils, either white or *tekhelet* (Menahot 39, s.v. *lo yifhot*). So the first *entire hulya* is white and the last *entire hulya* is white, and the others alternate. Thus, according to Tosafot, the first three coils are white, then the next three coils are *tekhelet*, then three coils of white, and so on, concluding with a *hulya* of white.¹⁴



Practically, since this is not an issue on which there is a decision of halakhah, we ought to follow the most ancient tradition. The *Kesef Mishneh* (loc. cit.) quotes from the *Teshuvot ha-Rambam* that the

13. See above, n. 11.

14. See above, n. 11.

Rabbis of Lunel asked the Rambam how he developed his opinion. He replied that his method was the one described by R. Shmuel ben Hofni Gaon. As such, it seems to be perhaps the most ancient tradition, and therefore the one we should adopt.

CONCLUSION

In general, Ashkenazi traditions rely heavily on Tosafot. Therefore we ought to use two long strings of *tekhelet* and two long white ones. The *tzitzit* should be wound following the method of R. Shmuel ben Hofni Gaon: tie a knot and wind one white coil and two *tekhelet* coils, tie a knot, wind three *tekhelet* coils, tie another knot, wind three more *tekhelet* coils, tie another knot, continuing in this fashion until the twenty-first coil, which is white, and end the tassel in a knot.*

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