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## Threads of Reason

*A Collection of Essays on Tekhelet*

by Rabbi Mois Navon

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About the Book

This collection of essays is the result of research spanning more than a decade, motivated by nothing more than the desire to reach a clear understanding of the issues surrounding the rediscovery of *tebbelet* through the *Murex trunculus*. Is it possible to renew a biblical commandment without a *mesorah* (tradition)? Must religious objects, like *tzitzit*, be made from kosher substances? Does one violate the *melakbab* (Shabbat labor) of trapping when obtaining a snail on Shabbat? Bringing together biology and halakhah, chemistry and *aggadah*, archeology and theology – and applying careful consideration and logical reason – these essays seek to address the numerous questions that arise in the endeavor to revive this unique commandment. And as *tebbelet* is a commandment that has been forgotten for over 1300 years, each essay is colored with the marvel of a lost biblical commandment returned anew to the Jewish people. This collection of essays, then, can be seen as a group of threads – threads of reason – spun into a cord strong enough to bind a new generation in the fulfillment of an ancient commandment.

On History, *Mesorah*, and *Nignaz*

History

Archeological evidence now available suggests that the origins of the purple and blue dye industry can be traced to Crete, dating as far back as 1750 BCE.¹ And on a tablet from Tel el-Amarna, dating to 1500 BCE, the phrase *subatu sa takilti* – a garment of *tekhelet* – is listed as one of the precious articles sent to Egypt by Dusratta, King of the Mittani, as dowry to the Egyptian prince who was about to marry his daughter.² These finds, among others, indicate that mollusk-based dyeing was in place long before the Jews came out of Egypt (c. 1312 BCE), and that the dyes were very precious, being used to denote royalty.³

A great number of archeological sites along the northern coast of Israel and extending up to the port city of Sidon attest to a well-developed *Murex*-based dyeing industry in the region.⁴ Fittingly, this region is precisely where the Gemara states that the *hillazon* fisherman were located – “from the Ladders of Tyre to Haifa” (Shab. 26a). One of the more telling finds from this region is that of a vat, found at Tel Shikmona (just outside of the modern city of Haifa), stained with dyestuff shown to be molecularly equivalent to the dye produced from *Murex* snails. The finds at these sites date from 1300 BCE to 900 BCE, corresponding to the time Joshua conquered the land from the Canaanites.

Now, the Jews wore *tekhelet* from the time they were commanded to do so on Mount Sinai until foreign rulers became zealous for the royal color and restricted its production and use to the ruling class.⁵ Various decrees were promulgated by the Romans, some providing exemption for ritual use, others strictly prohibiting Jewish use (e.g., Constantius 337-362). Documenting life during this period, the

Gemara contains numerous references to the ritual use of *tebbelet*, the latest of which tells of *tebbelet* being brought from Israel to Babylon in the days of R. Ahai (c. 506). This statement denotes the last positive mention of the use of *tebbelet* and, as no reference to its discontinuance is recorded, it is safe to assume that *tebbelet* was available until the redaction of the Gemara (c. 550-570). Chronologically, the next mention of *tebbelet* in Judaic literature is found in the Midrash Tanhuma (c. 750) which laments, “and now we have no *tebbelet*, only white.”⁶ R. Herzog surmises that it was the Arab conquest of Israel (c. 639) that brought an end to the snail-based dyeing industry among the Jews.

R. Herzog’s estimation notwithstanding, R. Gershon Hanokh Leiner, the Radzyner Rebbe, reasons that *tebbelet* was in use during the times of R. Natronai Gaon (c. 853) and R. Shmuel Hofni Gaon (d. 1013), as they wrote of *tebbelet* and, according to the Radzyner, they only concerned themselves with rulings that were of practical consequence (*balakhab lema’aseh*). The Radzyner also makes an argument that perhaps even the Rambam (1135-1204) had *tebbelet*. This is difficult to accept, however, considering that the Rambam himself states explicitly, “We have no *tebbelet* at the present day.”⁷ The Radzyner does acknowledge that his proposition is only speculation, based on an idea that is not without weakness.⁸ Accordingly, he places the last use of *tebbelet* among the Jews at the end of the Gaonic period (1038).⁹

Now while the Radzyner Rebbe provides the latest date for *tebbelet* usage among the Jewish people,¹⁰ R. Yehoshua MiKutna, in his work Yeshuot Malko (Orah Hayyim 2), puts forth the earliest date for the loss of *tebbelet*. He estimates that *tebbelet* was lost toward the end of the Amoraic period (c. 474), based on the fact that the Amoraim came to the conclusion that *tebbelet* was not a *sine qua non* for the fulfillment of the mitzvah of *tzitzit*.¹¹

The importance of this discussion, it should be noted, is not academic but has significant halakhic ramifications concerning the issues of *mesorah* and *nignaz*.

Mesorah

With regard to the issue of *mesorah* (tradition), the Beit HaLevi wrote responsum on the subject to the Radzyner Rebbe upon the Rebbe’s proposal that he had found the ancient source of *tebbelet* in a cuttlefish known as *Sepia officinalis*.¹² There are actually two records of their correspondence: one recorded by the Beit

HaLevi's grandson (R. Joseph B. Soloveitchik) and the other recorded by the Radzyner himself.¹³ The responsum as recorded by R. Soloveitchik indicates that the Beit HaLevi was of the opinion that a *mesorah* is essential; however, perhaps more telling is the responsum recorded by the Radzyner which reveals *why* the Beit HaLevi felt a *mesorah* was necessary. This version of the responsum reads:

After he [the Radzyner] has clarified that something had been lost and he rediscovered it, will we be obligated to listen to him and wear it. However, if we say that the fish was in existence, and the [manner of] extracting its dye was known during all the time that has passed since *tekbelet* stopped [being used] in Israel, and yet our fathers and our forefathers did not wear it, then it is as if we have a tradition and a transmission from our ancestors that this fish and its dye are not the *hillaẓon* and the *tekbelet*, despite its having all the signs which our sages have designated. Only after it has become clear to us that this fish or the dyeing process ceased and was forgotten at any time during all this time, and therefore that the transmission was interrupted, only then will the halakhic evidence serve as proof.¹⁴

From this quote, it is clear that the mitzvah of *tzitzit* is not in some unique category that demands *mesorah*, and only *mesorah*, for its determination – something that would constitute an unparalleled halakhic anomaly.¹⁵ Rather, the Beit HaLevi simply said to the Radzyner, in effect, if this “*hillaẓon*” was known to my father and to my grandfather, etc., and yet they didn't have any *mesorah* attached to it, why should I now accept it as the genuine *hillaẓon* of *tekbelet*? That is to say, since the *Sepia officinalis* proposed by the Radzyner has always been known,¹⁶ it comes with a known *mesorah*, albeit a negative one.

However, when it comes to the *Murex trunculus* now being proposed as the *hillaẓon*, the words of the Beit HaLevi argue in its favor. According to all accounts, the *Murex trunculus* had been lost to the Jewish people from sometime between the years 474 and 1038 (and lost to the non-Jewish world since 1453).¹⁷ It was only rediscovered by the French zoologist Henri de Lacaze-Duthiers in 1857,¹⁸ and only reintroduced to the Jewish world in the 1980s.¹⁹ This being the case, the Beit HaLevi would obligate the use of halakhic evidence in the face of a broken *mesorah* – a break ranging from at least 400 years within the non-Jewish world to more than 1500 years among the Jewish people.²⁰

Nignaz

In explaining that *tekebelet* is no longer available, the Midrash, in two distinct places, uses the expression – *nignaz* – stored away.²¹ Some have interpreted this to mean “hidden” to the extent that the mitzvah is simply unattainable by any natural means. Rabbi Yitzhak Luria, the Arizal, mentions the time of this “storing away” in connection with the destruction of the Second Temple (70 CE): “For the truth is that at this time, after the destruction of the Temple, we do not have the power to wear *tekebelet*.”²² However, by all accounts *tekebelet* was still in use following the destruction of the Temple, the earliest date given for its loss being 474. Commenting on this conflict, R. Tuckachinsky explains, “Therefore, it is understood that only during the time of the Temple was it found in abundance, following which it was *nignaz*, not that it was stored away completely, but that it was found less frequently.”²³ In a similar vein the Radvaz explains that “it is possible that the *hillazon* exists but we do not recognize it or how to trap it.”²⁴

Given this understanding, it is reasonable to adopt a more interpretative definition of the term *nignaz* than first supposed. Indeed, the term is translated by the Arukh to mean stored for safekeeping, and not that the item in question had been abolished or vanished.²⁵ R. Eliyahu Tavger, in his article, “The Meaning of Nignaz in the Writings of the Sages,” brings Talmudic sources that employ the word to refer to a ruler’s storing away of precious items for exclusive royal use.²⁶ He surmises that the Midrashic statements declaring *tekebelet* to be *nignaz*, refer to royal edicts, like those promulgated by the Romans, prohibiting anyone but the royal court from wearing *tekebelet*. Indeed, the Ramban writes, “Today, no one but kings dares to wear *tekebelet*” (on Ex. 28:2), thus supporting the notion that kings zealously guarded the use of *tekebelet*, keeping it as the symbol of royalty – *nignaz* for the king, but not *nignaz* out of existence.²⁷

Conclusion

In conclusion, we have seen that the mitzvah of *tekebelet* has been lost to the Jewish world for anywhere from 900 to 1500 years.²⁸ This complete break in continuity provides an opening through which halakhah can then accept evidence to fill the void left by the lack of *mesorah*. In addition, we learned that *tekebelet* was still in use even after the term *nignaz* was employed and therefore, we can rest assured that there is no prohibition, mystical or otherwise, that would prevent us from fulfilling this precious mitzvah, one which the Gemara teaches is “equal to all the mitzvot” (Men. 43b).²⁹

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- ¹ Baruch Stermán, “The Science of *Tekhelet*,” in *Tekhelet: Renaissance of a Mitzvah* (New York: YU Press, 1996), p. 64.
- ² R. Isaac Herzog, “Hebrew Porphyrology,” in *The Royal Purple and The Biblical Blue* (Jerusalem: Keter, 1987), p. 44.
- ³ Appropriately, just as the nations of the world used *tekhelet* to signify royalty (*malkhut*), so too did the Jews; but in the case of the Jews, it was – and still is – to signify *malkhut shamayim*, the Kingship of Heaven. See, for example, Megillat Ester (8:15), Rashi (Shabbat 26a, s.v. *uleyogvim*), Ramban (Ex. 28:2).
- ⁴ R. Herzog, p. 24. Nina Karmon and Ehud Spanier, “Archaeological Evidence of the Purple Dye Industry from Israel,” in *The Royal Purple and The Biblical Blue* (Jerusalem: Keter, 1987), pp. 149-157. Israel Ziderman, “Reinstitution of the Mitzvah of Tekhelet in Tzitzit,” *Techumin* 9 (1988), p. 438.
- ⁵ The history provided in this paragraph is from R. Herzog, pp. 110-112.
- ⁶ Midrash Tanhuma (Shelah 28); Bamidbar Rabbah (17:5).
- ⁷ Responsa v. 1, #138; also comm. on Mishnah Menahot 4; Rambam (Hil. Tz. 2:9).
- ⁸ “Ein HaTekhelet,” in *Sifrei ha-Tekhelet Radzryn* (Benei Berak: Mishor, 1990), p. 286.
- ⁹ “Sefunei Temunei Hol,” in *Sifrei ha-Tekhelet Radzryn* (Benei Berak: Mishor, 1990), pp. 5-7. It should be noted that R. Herzog rejects the notion that the Gaonim had *tekhelet*; as part of his proof, he brings the words of Mar Sar Shalom Gaon (d. 859) who speaks of *tekhelet* as a thing of the past (p. 113).
- ¹⁰ It is noteworthy that the absolute latest date given for *Murex*-based dyeing in the non-Jewish world is 1453 upon the fall of Constantinople (R. Herzog, p. 114; Gosta Sandberg, *The Red Dyes* [NC: Lark Books, 1997], p. 30).
- ¹¹ R. Menachem Burstein, *Ha-Tekhelet* (Jerusalem: Sifriyati, 1988), p. 135.
- ¹² Historical background: In 1887, R. Gershon Hanokh Leiner, the Radzyner Rebbe, pioneered a quest for *tekhelet* that led to the isolation of a cuttlefish (*Sepia officinalis*) as the dye’s source. Within a year he had thousands of his Hasidim wearing the new blue, though he faced great opposition from all other quarters of the Jewish world. Subsequent chemical analysis, initiated by R. Herzog, identified the dye as Prussian blue, the color of which derives from the *Ferric ferrocyanide* added to the mixture, and not from the *Sepia officinalis* extract (R. Herzog, p. 117). This is something the Rebbe himself would not have

countenanced, as he writes that the color comes exclusively from the *hillaẓon* (“Ein HaTekhelet,” 1:22, p. 288; “Ptil Tekhelet,” p. 168). Nevertheless, though his *hillaẓon* was rejected, his three books on the subject (*Sefunei Temunei Hol*, *Ptil Tekhelet*, *Ein HaTekhelet*) still serve as a basis for the halakhic investigation of this subject.

¹³ Both are quoted in R. Moshe Tendler, “Identifying Tekhelet: Masoret and Yediyah,” in *Tekhelet: Renaissance of a Mitzvah* (New York: YU Press, 1996), p. 49. See also R. Burstein, p. 133.

¹⁴ Ibid.

¹⁵ See R. Chaim Twerski, “Identifying the Chilazon,” *Journal of Halacha and Contemporary Society* XXXIV (Fall 1997). See also R. Tendler, pp. 47-48.

¹⁶ “Cuttlefish (*Sepia officinalis*) has been caught there from ancient times on and holds an important seasonal artisanal fishery in the Balearic Islands (western Mediterranean)” (Keller, S; Valls, M; Quetglas, A; “Life-History, Ecology and Fishery of *Sepia officinalis* in the Western Mediterranean” – see: http://www.ciac2012brazil.com.br/trabalhos/trabalho_aprovado.php?id_trabalho=9598&ev=1).

¹⁷ See fn. 10.

¹⁸ R. Herzog, p. 24.

¹⁹ In 1913, R. Isaac Herzog, named the *Murex trunculus* as the most likely candidate as the *hillaẓon* of *tekhelet* (pp. 64, 65, 70). He was, however, prevented from coming out in favor of the *Murex* due to concerns regarding its physical characteristics in comparison with the description in the *hillaẓon baraita* (Men. 44a), and more critically, due to the color of the dye which was not pure blue. Regarding the *hillaẓon baraita*, the points were not insurmountable, as explained in my essay, “The *Hillaẓon Baraita*” (herein, p. 25). Regarding the final color not being pure blue, this concern would have to wait several decades before a solution would be found.

In 1980, Prof. Otto Elsner of the Shenkar College of Fibers in Israel rediscovered the secret of producing a pure blue color from the *Murex trunculus* snail, thus solving R. Herzog’s most compelling difficulty. Together with Ehud Spanier of Haifa University, he investigated the photo-chemical properties of the *Murex trunculus* dye and found that when the dye is in a reduced state (the essential stage of vat dyeing), exposure to ultraviolet light transforms the blue-purple colorant (i.e., dibromoindigo) to unadulterated blue (i.e., indigo) – see Otto Elsner and Ehud Spanier, “The Past, Present and Future of *Tekhelet*,” in *The Royal Purple and The Biblical Blue* (Jerusalem: Keter, 1987).

In 1985, while writing a book about *tzitzit* entitled *Kelil Tekhelet*, R. Eliyahu Tavger became convinced that the source of authentic *tekhelet* had been found. Determined to actualize his newfound knowledge, and after much trial and error, he succeeded in applying the process,

according to halakhah, from beginning to end. He thus became the first person, since the loss of the *hillazon*, to dye *tekhelet* for the purpose of *tzitzit*. In 1991, together with R. Tavger, Ptil Tekhelet was formed to produce and distribute *tekhelet* strings for *tzitzit*.

²⁰ That is, there are 404 years from the latest date given for the snail/dye being lost in 1453 to its rediscovery in by Lacaze-Duthiers in 1857, and there are 1511 years from the earliest date given for its loss in 474 to the Jewish world and its rediscovery by R. Tavger in 1985.

²¹ See fn. 6. Also Sifri Devarim (VeZot Habrakha 354).

²² See Arizal, *Pri Eitz Hayim* (Shaar HaTzitzit, ch. 5). There are some who have seen in these words a nullification of the mitzvah of *tekhelet* in the present day (see R. Burstein, p. 138, n. 35) and there are those who have understood them as merely a statement on the spiritual status of the Jewish people, but not as an abrogation of the mitzvah (see R. Burstein, p. 139, n. 36). R. Shlomoh Taitelbaum explains that it is preposterous to suppose that the Arizal would nullify a biblical command (*Lulaot Tekhelet* [Jerusalem: Ptil Tekhelet, 2000], p. 40). In support of his position, he brings the letter of the Lubavitcher Rebbe Rashab who, while interpreting the Ari's words to imply that we do not wear *tekhelet* now, nevertheless writes, "the mitzvah is an eternal one, and when we will be able to fulfill it, so we must do." (p. 52).

²³ R. Tuckachinsky, *Ir HaKodesh VeHamikdash*, vol.5, p. 50. See also R. Taitelbaum (p. 20) for a similar argument.

²⁴ Radvaz (Responsa 2:265).

²⁵ R. Taitelbaum, p. 19.

²⁶ Mishnah (Me'ilah 17:2), Tosefta (Pe'ah 4:18), Gemara (San. 104a).

²⁷ It should be noted that at the time of the Ramban (1194-1270) the Jews had long since ceased from wearing *tekhelet*, though it did continue to be used by the non-Jewish world until 1453. R. Tavger conjectures that the Ramban was referring to the Pope who held himself as the "king of the Gentiles" and who acquired *Murex*-based blue from Constantinople. Alternatively, the kings and popes used a vegetable based-dye that, nevertheless, symbolized the royal court and was held as the exclusive symbol of royalty.

²⁸ That is, there are 974 years from the latest date given for the snail/dye being lost to the Jewish world in 1038 to its rediscovery by R. Tavger in 1985, and there are 1511 years from the earliest date given for its loss in 474 to the Jewish world and its rediscovery by R. Tavger in 1985.

²⁹ For an in-depth discussion on this expression, see my essay, "Equal to All the Mitzvot in the Torah", *Chidushei Torah Journal* (5770), <http://www.divreinavon.com/pdf/EqualToAll.pdf>.