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The Hillazon and the Principle of “Muttar be-Fikha”

Following the vast amount of evidence supporting the identification of the Murex trunculus snail as the *hillazon shel tekhelet*,¹ the question has been raised as to whether a mollusk could be considered the ancient source of *tekhelet*, given that it is not kosher to eat. This question is motivated by the principle that religious articles must be made from sources which are *muttar be-fikha* (literally: permissible in your mouth). In order to address this question, an in-depth analysis of the *muttar be-fikha* principle is necessary to determine the breadth of its application.

Introduction to Muttar be-Fikha

The source of this principle is introduced in the *gemara* by way of the following *baraita*:

R. Yosef stated [*baraita*]: For the sacred service (*melekhet shamayim*), none but the skin of a clean (*tahor*) animal is considered fit. (*Shabbat* 28b).

R. Yosef attempts to apply the *baraita* to the *Mishkan*; however the *gemara* rejects this application. The *gemara* then investigates the application of the *baraita* to *tefillin*. It is explained that the *baraita* cannot be teaching that *tefillin* parchments must be made from a kosher source, since this is learned explicitly from the Torah itself, from the verse, “So

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that the law of the Lord be in your mouth” (Ex. 13:9).² The *gemara* then goes on to explain that the *baraita* cannot be teaching that the boxes, hairs and sinews used for *tefillin* must be made from a kosher source, since this is known from a “*halakhah le-Mosheh mi-Sinai*.” The *gemara* concludes that R. Yosef’s statement comes to teach that the straps of the *tefillin* must come from a kosher animal. The upshot of the *gemara*’s discussion is that the principle which requires the use of a kosher animal applies to all aspects of *tefillin*—nothing more, nothing less.³

The Mishnah in *Megillah* 8b states that there are no differences among *tefillin*, *mezuzah* and sacred scrolls (except that sacred scrolls can be written in other languages).⁴ As such, the rule of “*muttar be-fikha*” is broadened to apply not only to *tefillin* but to *mezuzah* and sacred scrolls as well. This is stated explicitly in *Masekhet Soferim* (1:1): “It is not permitted to write sacred scrolls, *tefillin* or *mezuzot* on skins of *tame* [non-kosher] animals nor on skins of *tame* beasts; nor may they be sewn with their sinews, nor wound with their hair.”⁵

At this point, *muttar be-fikha* would seem to apply *only* to *tefillin*, *mezuzah*, and sacred scrolls.

However, in two places (*Kiddushin* 35a, *Makkot* 11a), the *gemara* applies laws that pertain to *tefillin* to the rest of the Torah—“*hukshah kol ha-Torah kulah li-tefillin*.” The *gemara* in *Makkot* 11a concludes that the analogy of *tefillin* to the Torah applies only to the requirement that the parchment of a Torah scroll be *muttar be-fikha*. The *gemara* in *Kiddushin* 35a also applies the principle, yet in a different capacity. There, the *gemara* applies the rule concerning *tefillin*, that women are exempt from time-bound positive *mizvot* (*mizvot aseh she-ha-zeman gerama*), to all *mizvot*. Based on this latter *gemara*, *Magen Avraham*⁶ (*Orah Hayyim* 586:3) writes that the law of *tefillin* which enjoins the use of a kosher animal is to be applied to all *mizvot*.⁷

At this point *muttar be-fikha* is understood to apply to *all mizvot*.

Hence, at the outset it appears that all ritual objects must come from kosher (*tahor*) sources. Since the *Murex trunculus* is not a kosher animal, it would seem to be disqualified as a candidate for the source of *tekhelet*.⁸

Definition of *Muttar be-Fikha*

The following general principle is found in *Shulhan Arukh*:

The skins for scriptural texts are to be from *tahor* animals, beasts and birds, and even from their *nevelot* and *terefot*; however, they are not to be from *tame* [i.e., non-kosher] animals, beasts and birds; as it is written, “In order that the law of the Lord be in your mouth” (Ex. 13:9)—from a

species that is permissible in your mouth (*muttar be-fikha*). (*Shulhan Arukh, Oraḥ Ḥayyim 32:12*)

It is thus clear that the rule of *muttar be-fikha* requires the use of a kosher (*tahor*) species; nonetheless, some contend that the definition of *muttar be-fikha* should also permit substances derived from non-kosher (*tame*) sources if they are *afra be-alma* (i.e., mere dust): That is, since mere dust is inedible, it is not considered non-kosher to eat. There are two categories of such substances: things that are inedible from their inception and things that over time, or after processing, become inedible.

Pirsha be-Alma

The Mishnah makes the following generalization: “That which goes forth (*yoze*) from the *tame* is *tame*” (*Bekhorot 5b*). But the *gemara* (*Bekhorot 7b*) exempts a “mere excretion” (*pirsha be-alma*) from this principle. R. J. David Bleich summarizes as follows:

. . . a substance is not forbidden as “*yoze*” unless it is edible at the time it is secreted; a secreted substance that is inedible at the time of its secretion, or becomes inedible thereafter, remains permissible even if its nature is such that it will develop naturally into, or be used in conjunction with, a proper foodstuff.⁹

Based on the principle that an inedible secretion (*pirsha be-alma*) is kosher, it is argued that the rule of *muttar be-fikha* should permit substances which are *pirsha be-alma*. *Ginnat Veradim*¹⁰ finds the ruling of Rosh,¹¹ that torn Torah scrolls may be sewn with silk threads, as paradigmatic of this permission. Since Torah scrolls are the primary application of the *muttar be-fikha* law, the permissibility of using silk, which comes from a non-kosher creature, must be explained. *Ginnat Veradim* argues that silk is actually kosher in that it is merely the inedible tasteless excretion of the worm—*pirsha be-alma*. Furthermore, silk is not similar to sinews, which are explicitly required to be from a kosher species. Sinews are initially edible and, as such, forbidden if from a non-kosher species, whereas silk is a *pirsha be-alma* and never forbidden for consumption.

This argument is rejected by *Shivat Ziyon* (#3) who explains that *pirsha be-alma* simply cannot be included in the definition of *muttar be-fikha*. He reasons that animal hairs are clearly *pirsha be-alma*, yet the *gemara* explicitly demands that they be from kosher species.¹² As for the permissibility of silk threads to mend torn scrolls, *Darkhei Noam* (14:1) explains that silk is only permissible in places not fundamentally essential to the scroll and its writing.¹³

At this point, then, the definition of *muttar be-fikha* is understood to require a kosher species; and *pirsha be-alma* is of no consequence.

Afra be-Alma Final Product

The *gemara* (*Avodah Zarah* 67b) discusses the concept of non-kosher substances that become permitted to eat if they become unfit for human consumption (*nifsal me-akhilat adam*). R. Shimon, whom the normative halakhah follows, rules that something which is *nifsal me-akhilat adam* is permissible since it is no longer considered “food.” The opposing view, held by R. Meir, maintains that only substances which had been inedible from their inception are permitted. R. Yehezkel Landau in his *Noda bi-Yehudah* elaborates, explaining that the *gemara* (*Bekhorot* 23b) distinguishes between substances that are no longer fit for human consumption and substances that are no longer fit for consumption by a dog (*nifsal me-akhilat kelev*), applying greater leniency to the latter.¹⁴ Based on this, *Noda bi-Yehudah* explains that even according to R. Meir, once a substance has reached the stage of *nifsal me-akhilat kelev*, it is simply *afra be-alma* and permitted. The rule is best summarized as follows:

A substance which has become inedible for a dog (*nifsal me-akhilat kelev*), according to all authorities, no longer retains any prohibition, even if it became inedible only following its being forbidden.¹⁵

Kesef Mishnah (Rambam, *Hilkhot Kelei Mikdash* 1:3) employs this principle to defend Rambam’s permitting use of an apparently non-kosher animal¹⁶ to produce the *mor* used for the anointing oil and incense in the Temple, since the *mor* is *afra be-alma* in its final form. R. S. Landau, writing on his father’s *Noda bi-Yehudah*, takes issue.¹⁷ He explains that if it were the final substance that is the object of the *muttar be-fikha* rule, then the hairs and skins used for *tefillin*, *Sefer Torah*, and *mezuzah* should not be required to be from a kosher animal; they too are *afra be-alma* in their final form. Since they are required to be from a kosher animal, the application of *afra be-alma* to the final product is an unwarranted exemption from the *muttar be-fikha* rule.¹⁸

Furthermore, the *gemara* itself states: “*Tefillin* are to be written only on the skin of a *behemah tehorah* and the skin of *ḥayyah tehorah*, and upon the skins of their *nevelot* and *terefot*, but not on the skins of a *behemah teme’ah*” (*Shabbat* 108a). Given that the processed skins of non-kosher animals are considered permitted to eat in that they are *afra be-alma*,¹⁹ the *gemara*’s ruling that parchment may not come from the skins of a *behemah teme’ah* includes a rejection of the exemption of *afra*

be-alma. Stated in the positive, the law of *muttar be-fikha* enjoins that even though skins are processed, and as such are really allowed for eating, only skins from a kosher species are permitted.²⁰

The definition of *muttar be-fikha* requires a kosher species; and neither *pirsha be-alma* nor *afra be-alma* in final form is of any consequence.

Two More Approaches

Kosher foodstuff from non-kosher fish

R. Gershon Hanokh Leiner (the Radzyner Rebbe) also encountered the issue of *muttar be-fikha* when he proposed his non-kosher cuttlefish (*Sepia officinalis*) as the possible source of *tekhelet*.²¹ He asserted that, while the condition of *afra be-alma* is not sufficient to permit use of a substance from a non-kosher animal, if the substance was kosher (not merely inedible) from its outset, it would be acceptable as *muttar be-fikha*.²² He then argues that the blood of non-kosher fish is biblically permissible to eat, and as such its dye is *muttar be-fikha*.

The first postulate, that a kosher substance from any non-kosher creature is acceptable, is dismissed by *Shivat Ziyon's* (#2) explanation that when actual kosher substances are required there is a separate rule to apply—*mashkeh Yisrael*—which is distinct from the rule of *muttar be-fikha*. The rule of *muttar be-fikha* demands a kosher species, period. Furthermore, the second contention, that the blood of non-kosher sea creatures is biblically permitted, is—by R. Leiner's own admission—fraught with opposition.²³

As another line of defense, the Rebbe proposed that the dyestuff of the *hillazon* was kosher in that it is like a bee's honey.²⁴ Bee's honey is deemed kosher because it is an exudation of the creature having nothing to do with the actual organism itself (Rambam, *Hilkhhot Ma'akhalot Asurot*, 3:3). This description is inapplicable to the *Murex trunculus*, whose dyestuff is found in its hypobranchial gland, which serves for several indispensable bodily functions.²⁵

Human-made changes

Hatam Sofer (1:39), in examining the permission to use silk, offers the possibility that dyed silk is acceptable since a fundamental change is effected by dying (as demonstrated by the laws of ownership—wherein dying changes an object's status). However, such a change is not effective in all cases, since wool from sheep which have been worshipped as the object of idolatry is forbidden for ritual use, even after being spun and dyed.²⁶ *Hatam Sofer* has a novel response to this case, but it is not the normative understanding. Furthermore, *Noda bi-Yehudah* altogeth-

er rejects the notion that any change can make a substance from a non-kosher species admissible as *muttar be-fikha*. He explains that a fundamental transformation is made by animal skins to become parchment, yet the *gemara*²⁷ explicitly requires that they come from a kosher species.²⁸ Indeed, *Ḥatam Sofer* himself leaves the issue as one which requires further investigation. In a related responsum on the subject (2:276), written some ten years later, he permits silk only in places where its use is not essential to the *mizvah* object (*eino me'akev*).

Consequently, the argument that the law of *muttar be-fikha* applies to the final product, without concern for the source species, is dismissed. The law of *muttar be-fikha* requires ritual objects to be made from a kosher species, without regard for the permissibility of the final substance.

The definition of *muttar be-fikha* requires a kosher species—without exception.

Application of *Muttar be-Fikha*

Given the definition of *muttar be-fikha*, one is left in a quandary, upon learning that the *gemara* (*Sukkah* 23a) permits, without reservation, the use of a tied elephant as a *sukkah* wall. Because of this *gemara*, *Noda bi-Yehudah*²⁹ contests *Magen Avraham's* claim that *muttar be-fikha* applies to all the *mizvot* stating: “Behold, an elephant is not *muttar be-fikha*, yet it is permitted for the performance of a *mizvah*.”

Tashmishei Mizvah

*Noda bi-Yehudah*³⁰ brings the *shofar* as yet another example of a *mizvah* object which is permissible from a non-kosher animal. He explains that the similarity between *shofar* and *sukkah* is that they are both *tashmishei mizvah*³¹—objects used to perform *mizvot*, yet do not have inherent *kedushah* (holiness).

At this point, *muttar be-fikha* is understood as not applying to *tashmishei mizvah*.

Though there is support for the idea that a *shofar* from a non-kosher animal is permissible,³² there are those who hold that this is simply not so.³³ To maintain the latter opinion, the unique quality of the *sukkah*, which allows for the use of a non-kosher animal, must be distinguished from the *shofar*. *Har Zevi* (*Orah Ḥayyim* 1:39) explains that the law of *muttar be-fikha* applies specifically to *mizvot* which by definition require the use of materials from animals (*ba'alei ḥayyim*).³⁴ If the *mizvah* does not, by definition, stipulate such a requirement, such that

the ritual object could be produced from vegetable or inanimate substances, then one could even use non-kosher animals. The elephant, therefore, is acceptable despite the fact that it is not kosher, since the *mizvah* of *sukkah* does not inherently require an animal source for its fulfillment; a *sukkah* wall can be made from anything (e.g., metal, wood, stone). In contrast, the *shofar* must come from an animal; as such, it is argued that it must come from a kosher animal.

At this point, *muttar be-fikha* is understood to apply to all *mizvot* that require an animal source.

Tekhelet, by definition, must come from an animal source, as the Tosefta (*Menahot* 9:6) states: “*Tekhelet* is valid only from the *hillazon*; if *tekhelet* was produced from other than the *hillazon*, it is invalid.”³⁵ According to this last definition of the application of the *muttar be-fikha* rule, the *hillazon* must be a kosher animal.

But this last definition is undermined by the example of silk *zizit* brought by *Peri Megadim*³⁶ and *Hatam Sofer*.³⁷ *Shulhan Arukh* (*Orah Hayyim* 9:3), as per the *gemara* (*Menahot* 39b), legislates that “*zizit* of materials [other than wool or linen] fulfill the *mizvah* of garments made of that same material, such as silk [*zizit*] for a silk garment. . . .” Given that silk is the product of a non-kosher creature (i.e., a worm), this is a *mizvah*³⁸ which by definition requires the use of an animal, yet its species is non-kosher.³⁹ As such, *muttar be-fikha* cannot apply to all *mizvot* that inherently require an animal source. Given that *zizit* are a *tashmish mizvah*, the definition of *muttar be-fikha* reverts to being inapplicable to *tashmishei mizvah*.

In response to the silk *zizit* example, one could argue that since the *mizvah* of *zizit* can be fulfilled using materials that are not of animal or food sources (e.g., linen), *zizit* are not, in an absolute sense, required to be from a kosher animal source. Consequently, the example of silk *zizit* reduces the scope of *Magen Avraham’s* statement, but it may not necessarily exempt all *tashmishei mizvah* from *muttar be-fikha*.

At this point, it is instructive to revisit the *shofar* example. Rama (*Orah Hayyim* 586:1), based on Ran,⁴⁰ prohibits the use of a non-kosher animal for a *shofar*. Ran reasons that a *shofar* cannot be of a non-kosher animal because the *shofar* is considered to be akin to God’s inner chamber (“*ke-lifnim dami*”). Thus, the demand that the *shofar* be from a kosher animal does not ensue from the application of *muttar be-fikha* to all *mizvot*. Rather, it stems from the unique significance of the *shofar*.⁴¹ With this understanding, the *shofar* proves that *muttar be-fikha* cannot apply to all *mizvot* that inherently require an animal source. Given that

a *shofar* is a *tashmish mizvah*, the definition of *muttar be-fikha* reverts to being inapplicable to *tashmishei mizvah*.

There is, however, a *mizvah* which seems to limit the generalization that *muttar be-fikha* is inapplicable to all *tashmishei mizvah: halizah*—which some claim requires the use of a leather shoe.⁴² Though the *Ba' alei ha-Tosafot* (*Yevamot* 102b, s. v. *ve-anelekha*) hold that the leather need not be of a kosher animal, Rabbenu Tam (*ibid.*) does require the shoe to be from the skin of a kosher animal.⁴³ His reason, however, is because of the verse, “And I placed on you a shoe of *tahash* [a kosher animal]. . . .” (*Ezek. 16:10*). Thus, even according to Rabbenu Tam, the requirement of kosher leather is not due to the application of *muttar be-fikha*, but because of a specific inference from Scripture.⁴⁴ Thus, the definition, that *muttar be-fikha* is inapplicable to *tashmishei mizvah*, still holds.

At this point, *muttar be-fikha* is understood as not applying to *tashmishei mizvah*.

Applying this new definition of *muttar be-fikha* to the case under discussion, *tekhelet* as used in *zizit* is perfectly acceptable from a non-kosher animal, since *zizit* is a *tashmish mizvah*.⁴⁵ However, *tekhelet* is also prescribed for use in the *Mikdash*,⁴⁶ wherein everything is considered *tashmish kedushah*.⁴⁷ Given that there is no reason to believe that the *tekhelet* for *zizit* is of a different origin than the *tekhelet* of the *Mikdash*,⁴⁸ the question of *muttar be-fikha* must be understood in relation to *tashmishei kedushah*⁴⁹—ritual objects which have *kedushah* (holiness).

Tashmishei Kedushah

R. Beḥayyei (*Ex. 25:3*) infers that since silk is not used in the *Mishkan*, all the appurtenances of the *Mishkan* must be *muttar be-fikha*. *Torah Temimah* (*Ex. 25:4*, n.4) does not find R. Beḥayyei's inference valid. Rather, he explains that one cannot infer anything from the fact that silk was not used in the *Mishkan*, since everything was a matter of “*ha-dibbur ve-hora'at ha-sha'ah*” (immediate circumstances). It is worth noting that silk was not available outside of China at the time of the Exodus (*circa* 1300 B.C.E.). For though the Chinese are known to have used silk since the third millennium B.C.E., Aristotle (384-322 B.C.E.) is the first Westerner to mention silkworms.⁵⁰ Indeed the “Silk Road”, carrying silk from China to India, did not come into existence until 300 B.C.E., and did not connect to the West until 200 B.C.E.⁵¹ Of course, a miracle could have been wrought to provide silk, but concluding that silk is forbidden based on the absence of a miracle seems excessive.

Returning to the *gemara* (*Shabbat* 28a) wherein R. Yosef's original statement is made, the *gemara* attempts to deduce which objects are susceptible to ritual defilement of a tent (*tum'at ohel*) through formal comparison (*gezerah shavah*) with the *Mishkan*—the paradigmatic tent (*ohel*).⁵² The *gemara* reasons that since all the coverings used in the *Mishkan* are in some way referred to as “*ohel*,” any of the materials used in those coverings are susceptible to *tum'at ohel*. In trying to determine whether skins of non-kosher animals acquire *tum'at ohel*, R. Elazar inquires as to the origin of the *tahash* skins used in the *Mishkan* (i.e., were they from a non-kosher animal?).⁵³ The *gemara* goes on to prove that the susceptibility of non-kosher skins to *tum'at ohel* is not determined by their inclusion in, or exclusion from, the *Mishkan*. Rather, the ruling is deduced by an *a fortiori* inference (*kal va-ḥomer*) from goatskins. After dismissing the use of the *tahash* skins in the *gezerah shavah*, the *gemara* teaches that the various components of *tefillin* must be of kosher animal material. The *gemara* then goes on to conclude that the *tahash* was a kosher species.

Rashba quotes R. Hai Gaon who derives from this *gemara* the scope of *muttar be-fikha*.⁵⁴ He explains that just as the *gemara* derived, by formally comparing a “*Mishkan* tent” to a “corpse tent” (*gezerah shavah ohel Mishkan ohel met*), which materials are susceptible to *tum'at ohel* from the materials used in the *Mishkan* (i.e., wool and linen), so too the reverse comparison can be applied. That is to say, those materials that are susceptible to *tum'at ohel* are acceptable for use in the *Mishkan*. Given that non-kosher animal skins are susceptible to *tum'at ohel*,⁵⁵ non-kosher animal skins must also be acceptable for use in the *Mishkan*. Therefore, concludes R. Hai Gaon, the requirement to use a kosher animal applies not to the *Mishkan*, but only to *tefillin*.⁵⁶

As explained above, there are no differences among *tefillin*, *mezuzah* and sacred scrolls, so *muttar be-fikha* applies equally to all of these objects. Another *mizvah* object similar to these—in that it is writing on parchment—is *megillat sotah* (the scroll of curses written in the case of an unfaithful woman [Num. 5:23]). *Sedei Hemed*,⁵⁷ in analyzing the *mizvah* of *Sotah*, concludes that *megillat sotah* requires kosher parchment specifically because it has “writing.”⁵⁸ As such, the application of *muttar be-fikha* is broadened to include all *mizvot* which entail writing.

At this point, then, *muttar be-fikha* is understood to apply to *mizvot* with writing.

This definition is called into question by the *mizvah* of *get*. The *get* is a *mizvah* object composed of writing; however, the mishnah itself

permits a *get* to be written on anything (*Gittin* 19a).⁵⁹ *Sedei Hemed*⁶⁰ quotes *Bikkurei Shelomoh*, who explains that a *get* does not require *muttar be-fikha* because the *mizvah* does not inherently require an animal source. Thus, he would refine our application of *muttar be-fikha* to *mizvot* with writing which also require animal sources.

At this point, *muttar be-fikha* is understood to apply to *mizvot* involving writing that *inherently require* an animal source.

This last definition is a refinement based on R. Hai Gaon's conclusion that *muttar be-fikha* applies to *tefillin* and not the *Mishkan*. However, *Noda bi-Yehudah* rejects R. Hai Gaon's application of the *gezerah shavah* (learning *ohel Mishkan* from *ohel met*).⁶¹ He reasons that the *gemara* questioned whether the susceptibility of a non-kosher animal to *tum'ah* could be learned from the example of the *tahash* in the *Mishkan*, since the *tahash* is not necessarily considered the actual *Mishkan* (but rather a functional covering). As such, the *gezerah shavah* does not apply, since the *tahash* was not formally part of the *Mishkan* "tent." Furthermore, since the *gemara* concludes that the *tahash* was indeed kosher, the *gezerah shavah*, maintains *Noda bi-Yehudah*, is simply inapplicable.

This rejection of R. Hai Gaon's position by *Noda bi-Yehudah* is weak for two reasons: 1) though the *gemara* was initially in doubt whether the *tahash* was part of the *Mishkan*, it concludes that the *tahash* was indeed considered part of the *Mishkan* (*mah tahton karui ohel, af elyon karui ohel*); 2) the fact that the *gemara* concludes that the *tahash* was kosher, does not break the *gezerah shavah* between *ohel met* and *ohel Mishkan*.⁶² Indeed, following the *gemara's* discussion of whether a non-kosher animal skin contracts *tum'ah*, the question is raised: "And what about the status of the *tahash*?" This question clearly implies that non-kosher skins were permitted in the *Mishkan*.⁶³ Be that as it may, we will continue with *Noda bi-Yehudah's* discussion since it is the more stringent approach.

After much deliberation, *Noda bi-Yehudah*⁶⁴ explains that though he had propounded that the reason *muttar be-fikha* applied to *tefillin* straps was their being connected to sacred writing, there is room to disagree with his reasoning. One may claim that *muttar be-fikha* applies to *tefillin* straps because they are *tashmishei kedushah* (as explained by *Tosafot Menahot* 35b, s. v. *elu tefillin*).⁶⁵ As such, the definition of *muttar be-fikha* again applies to *tashmishei kedushah*.

At this point, *muttar be-fikha* is understood to apply to all *tashmishei kedushah*.

Nevertheless, one who accepts this definition is confronted with the three dyes used in the *Mishkan*: *tekhelet*, *argaman*, and *tola'at shani*.

Noda bi-Yehudah expresses uncertainty as to whether the sources of these dyes were kosher. He posits that, assuming the dyes were from non-kosher creatures, *muttar be-fikha* has a new condition: “everything that is for appearances has no requirement of *muttar be-fikha*.” At this point, an investigation of the sources of these dyes is essential.

Dyes in the Mikdash

Tola'at Shani

Rambam (*Hilkhot Parah Adumah* 3:2) explains that the *tola'at shani* (crimson) dye comes from a “*gargir*,” a grain-like object, within which lives a *tola'at* (insect).⁶⁶ R. Beḥayyei (Ex. 25:3) interprets Rambam’s description to the effect that the dye is from a kosher source (i.e., the *gargir*) and not the actual insect. This explanation is difficult for the following reasons:

First, it comes in stark contradiction to the statement of the Yerushalmi: “Just as *tola'at shani* is something that has the spirit of life in it, so too everything [i.e., *tekhelet*, *argaman*] has the spirit of life in it” (*Kil'ayim* 9:1).⁶⁷ This clearly implies that the *tola'at shani* dye comes from a living *tola'at*. The Tosefta (*Menahot* 9:6) corroborates: “*Sheni tola'at* is from the *tola'ah* in the hills; if it is not made from the *tola'ah* in the hills, it is invalid.” Similarly states the Sifra: “*Sheni tola'at*, the color that is in the *tola'at*.”⁶⁸ So too the Sifrei: “The color is from the *tola'at*, and not from anything else.”⁶⁹ Accordingly, *Torah Temimah* quotes Rambam (i.e., that the dye is from the “*gargir*”) and says in amazement: “I have not found any source for this idea, and behold it is stated explicitly that the *tola'at* is an actual living insect!”⁷⁰

Second, it is well known that the ancients used crimson dye from an insect known as the *Coccus (kermes) ilicis* which lives on the red oak tree (*Quercus coccifera*) and holly oak (*Quercus ilex*).⁷¹ Archaeological evidence indicates that it is the oldest red dye, used by the Egyptians and Phoenicians.⁷² The Septuagint (Ex. 25:4-7, 26:1) translates *tola'at shani* as “*kokkinon*”—the Greek word used to refer to *Kermes* dye, and Pliny refers to its widespread use.⁷³ R. Sa'adyah Gaon (Ex. 25:4) agrees, explaining the words *tola'at shani* as “the color *Kermes*.”

As for the “*gargir*” in which the insect is found, this may refer to either the egg or cocoon, in which the insect grows—both of which also contain the dye.⁷⁴ If so, Rambam is not implying that the dye must come from a kosher source; rather, he is merely explaining a specific instance of where the dye—from its non-kosher source—is found.

The fact that the *tola'at shani* dye came from an insect has been recognized by *posekim* and applied halakhically. *Hatam Sofer* (Responsa, 2:#276) states that “the crimson dye of *tola'at shani* is wool dyed from insect extract.” Similarly, *Minhat Yizhak* (3:#96) writes, “as I have seen in one of the writings of the *soferim ha-ḥaredim*, the dye was produced from the *tola'at*.”

Argaman

R. Isaac Herzog, as part of his doctoral thesis *Hebrew Porphyrology*, discusses the source of the *argaman* dyestuff. He explains that the Septuagint translates every instance of the word *argaman* as *porphyra* (or a derivative thereof).⁷⁵ *Porphyra* is the Greek name used to refer to the snails used for Tyrian Purple—the purple dye made famous by the Phoenicians and later monopolized by the Romans.⁷⁶ R. Herzog brings evidence from the writings of Philo and Josephus, both of whom expressly state that the Temple's *argaman* dye was of sea-snail origin.⁷⁷ This is most convincing testimony, given that both Philo and Josephus lived during the Second Temple period; moreover, Josephus himself officiated in the Temple.

R. Herzog then goes on to explain the reason for the lack of a formal declaration in Judaic literature to specify the source of *argaman*:

There was no necessity for formulating a law in rejection of non-conchylian dyestuffs for *argaman*, simply because the word *argaman* itself denoted nothing but purple dye or purple stuff, being the equivalent of the Greek or Latin *purpura*: *argaman* also designated the species of sea-snail productive of the dye which, when applied to clothing gave to the latter the name *argaman*. To have said that the stuff dyed with the vegetable pigment is not *argaman*, however close its color to the latter might be, would have been like saying, for instance, that counterfeit gold might not do when the Law required gold.⁷⁸

The point is that the very name *argaman* indicates the sea-snail source which produces purple dye, just as the name “gold” indicates that well-known precious metal.

Tekhelet

The intention of this paper has been to ascertain whether *tekhelet* dye could halakhically come from a non-kosher source. The most direct method to establish the validity of such a claim is to demonstrate that the very creature mandated is nothing other than a non-kosher animal.

The *gemara* describes the nature of the *hillazon* stating: “its creation (*beri'ato*) is similar to that of a fish” (*Menahot* 44b). This identification

is no more precise than saying that the *hillazon* lives in the sea.⁷⁹ Indeed, Shemuel ben Hofni Gaon, in chapter 9 of his “Book of the Laws of *zizit*,” writes that *tekhelet* “is dyed with the blood of a sea creature.” Rambam (*Hilkhot Zizit* 2:2) states that the *hillazon* is simply “a fish” (i.e., not “similar to a fish”). One may therefore conclude only that the *hillazon* is a sea creature, and not necessarily a kosher fish. For as R. Herzog explains,⁸⁰ Rambam distinguishes only between fish and *sheraẓei ha-mayim*, and as such he would include Gastropods (of which snails are a member) in his categorization of “fish.”

The Midrash describes the *hillazon* as follows: “Go and learn [about the clothes of the Jews in the desert] from the *hillazon*: all the time that it grows, its shell (*nartiko*) grows with it” (*Shir ha-Shirim Rabbah* 4:11).⁸¹ The *gemara* states, “One who traps and breaks open (*pozea*) a *hillazon* . . .” (*Shabbat* 75a). R. Herzog explains that the verb *pozea* means “break open”—that is, something hard, like a nut.⁸² These sources indicate that the *hillazon* is a hard-shelled creature.⁸³ Given that the only kosher sea creatures are those with fins and scales, which excludes all hard-shelled crustaceans, the *hillazon*, as described by the Midrash and *gemara*, cannot be a kosher fish.⁸⁴

Finally, there is the statement of Ravva (*Berakhot* 9:25), who quotes the Yerushalmi identifying *tekhelet* with the Greek word *porphyra*.⁸⁵ Again, *porphyra* is the Greek word used to refer to snails, more specifically the *Murex* snails, which have been shown to produce both purple (*argaman*) and blue (*tekhelet*), depending on processing.⁸⁶

Given the overwhelming evidence in support of the fact that non-kosher species were used as the dye sources of the *Mikdash*, *Noda bi-Yehudah*'s uncertainty as to the dye origins is removed. Consequently, his hypothesis that “appearances don't count,” is affirmed. Indeed, *Hatam Sofer*⁸⁷ maintains that the dyes are obtained from non-kosher substances and thus concludes that “coloring is of no consequence.” R. Elyashiv is more conservative, explaining that though *tekhelet* is acceptable from a non-kosher animal, it is so by definition, and one cannot extrapolate from this to general halakhah.⁸⁸

At this point, *muttar be-fikha* is understood to apply to all *tash-mishei kedushah* with the exception of dyes—at least for the *Mikdash*.

Conclusion

In conclusion, we have seen the spectrum of opinions regarding the definition and application of the principle *muttar be-fikha*. It has been demonstrated that this principle, by definition, requires that the raw

material for ritual objects come from kosher species without exception. It has been shown decisively that *muttar be-fikha* cannot be applied to all the *mizvot*; for any one of the counter-examples (*sukkah*, using an elephant; *shofar*, from *tame*; *zizit*, from silk) is alone adequate to dislodge the broad application of *muttar be-fikha* as initially understood by *Magen Avraham*. Indeed, *Peri Megadim* explains that the *hekesh* (inference) of *Magen Avraham* is not a *hekesh gamur* (inference without exceptions).⁸⁹ Through the examples, we learned that *muttar be-fikha* is simply not applicable to *tashmishi mizvah*. And following the analysis which established the *hillazon* as a non-kosher animal, we can now add *zizit* of *tekhelet* to the list of *mizvot* which inherently require a non-kosher animal foodstuff for its fulfillment.

R. Hai Gaon's analysis brought by Rashba indicated that *muttar be-fikha* is in fact very limited in scope, applying only to *tefillin*—and by extension, to sacred writings. By distinguishing the requirements of *gittin*, we further refined the application of *muttar be-fikha* to objects with writing that require animal material as their substrate by definition. R. Hai Gaon's understanding was called into question by *Noda bi-Yehudah*, so we returned to the notion that the principle of *muttar be-fikha* applies to all *tashmishi kedushah*.⁹⁰ Nevertheless, even allowing for this broader approach to *muttar be-fikha*, it was demonstrated that *muttar be-fikha* simply cannot apply to the dyes used in the *tashmishi kedushah* of the *Mikdash*—either because “appearances don't count” or simply by way of specific dispensation.

With this deeper understanding of the parameters pertaining to the principle of *muttar be-fikha*, another obstacle has been removed from the path to accepting the *Murex trunculus* snail as the *hillazon shel tekhelet*. May yet more Jews find in this the power to fulfill the *mizvah* of *zizit bi-shelemutah* (in its full definition), and thus merit God's very presence, as it says: “He who is careful in the *mizvah* of *zizit* merits to receive the face of the *Shekhinah*” (*Menahot* 43b).

Notes

1. Chief Rabbi Dr. Isaac Herzog, “Hebrew Porphyrology”, *The Royal Purple and The Biblical Blue* ed. Ehud Spanier (Jerusalem, 1987), 17-145; Menahem Borstein, *Ha-Tekhelet* (Jerusalem, 1988); Yisrael Ziderman, “Reinstitution of the *Mizvah* of *Tekhelet* in *Zizit*” (Hebrew), *Tehumin* 9 (1988): 423-46; Yehuda Rock, “Renewal of *Tekhelet* and Issues of *Zizit* and *Tekhelet*” (Hebrew), *Tehumin* 16 (website expanded version www.tekhelet.com); Eliyahu Tavger, “*Ma'amar ha-Tekhelet*,” *Kelil Tekhelet* (Jerusalem, 1993):

- 312-34; Baruch Sterman, "The Science of *Tekhelet*," *Tekhelet: Renaissance of a Mitzvah* (New York, 1996): 63-78; Rabbi Chaim E. Twerski, "Identifying the Chilazon," *Journal of Halacha and Contemporary Society* XXXIV (Fall 1997): 77-102.
2. The statement is part of a verse describing *tefillin*. The Talmud interprets the words "in your mouth" as "permissible in your mouth" (*muttar be-fikha*), meaning that the parchments must be *muttar be-fikha*.
 3. The principle is interchangeably referred to as *muttar be-fikha* or a variation of *lo hukhshar li-melekhet Shamayim ela davar tahor*." (For example, see: R. Beḥayyei, Ex. 25:3; R. S. Landau, Responsa *Noda bi-Yehudah, Mahadura Tanina, Oraḥ Ḥayyim*, 3; R. S. Landau, *Haggahot to Doresh le-Ziyon*, ch. 11; Responsa *Torat Hesed, Oraḥ Ḥayyim*, 60:3).
 4. The statement of the Mishnah is made with regard to parchments; the *gemara* (*Megillah* 8b) then infers the rule to apply to the stitching as well.
 5. See also *Beit Yosef, Yoreh De'ah*, 271:1. See note 8 below for an explanation of why the terms *tame* and *tahor* should be translated as "kosher" and "non-kosher".
 6. Responsa *Sedei Hemed (Aseifat Dinim, Ma'arekhet Hanukkah*, 14) explains that the opinion of *Magen Avraham* is also held by *Eliyahu Rabbah, Semag, Mikra'ei Kodesh, Birkei Yosef*, and *Batei Kenesiyot*.
 7. See *Peri Megadim: Eshel Avraham (Oraḥ Ḥayyim*, 586:3). (See also *Mahazazit ha-Shekel* 586:3 for an alternate explanation of *Magen Avraham*).
 8. For the sake of clarification, it is instructive to prove the following argument fallacious: Given that (a) the *hillazon* is a sea creature and (b) the mishnah (*Kelim* 17:13) states, "everything in the sea is *tahor*, except for the seal," the *hillazon* satisfies the requirement of being *tahor*. This argument is untenable for the simple reason that the *gemara's* requirement that a ritual object be of a *tahor* substance means "kosher" (i.e., halakhically permissible for consumption). The usage of the terms *tahor* and *tame* to refer to kosher and non-kosher animals is taken from the Torah, when it refers to *behemot teme'ot*, meaning animals non-kosher to eat (Lev. 7:21, 20:25, :25, 27:11, 27; Num. 18:15). Though the Torah itself does not employ the terms "*dag tahor*" and "*dag tame*," the *gemara* (*Hullin* 66b, *Niddah* 51b; also *Shabbat* 108a, *Bava Mez'ia* 61b, *Avodah Zarah* 40a, *Hullin* 67b, *Hullin* 113a, *Bekhorot* 7b) uses the terms extensively to distinguish between sea creatures that have the signs of fins-and-scales and those that do not. Since the *hillazon* does not have fins and scales, it is non-kosher (i.e., not permitted for consumption)—and in the words of *Hazal: tame*. The intent of the mishnah (*Kelim* 17:13) is not that all sea creatures are kosher, but that vessels made of the skins or bones of sea creatures do not receive *tum'ah* (are not *mekabbel tum'ah*) (*Kehati*, ad loc.).
 9. J. David Bleich, *Contemporary Halakhic Problems*, vol. III (Hoboken, NJ, 1989), 80.
 10. *Oraḥ Ḥayyim*, 2:16, s. v. *akh mah*.
 11. "Silk is acceptable to sew tears in scrolls" (*Rosh, Teshuvot, Kelal* 3).
 12. *Shabbat* 28b.
 13. So too Responsa *Hatam Sofer* (2:276, s. v. *ve-haynu tama*).
 14. *Noda bi-Yehudah, Mahadura Kamma, Yoreh De'ah*, 26.
 15. *Enziklopedyah Talmudit*, vol. II, 91
 16. Rambam explained that the *mor* spice was obtained from an Indian animal

which is used the world over for perfume. The animal referred to is held to be the Musk Deer (*Moschus Moschiferus*), used ubiquitously for its powerful scent (see *Encyclopaedia Britannica*, s. v. "Musk"). According to *Noda bi-Yehudah*, Ravad (*Hassagot, Hilkhoh Kelei Mikdash* 1:3) was of the opinion that Rambam was referring to a non-kosher animal, and thus questioned the acceptability of using a non-kosher animal in the Temple service. (See note 18 for a discussion of the alternate interpretations of Ravad). As an aside, the Musk Deer is known to be kosher and would thus conform to the requirement of *muttar be-fikha* (See R. Kapaḥ, *Perush ha-Mishnah, Kereitot* 1:1).

17. *Mahadura Tanina (Orah Ḥayyim, 3)*, s. v. *od re'ayah*.
18. *Ḥatam Sofer* (1:39, s. v. *le-zeh*) finds Ravad's point about the *mor* not to be concerned with *muttar be-fikha* at all. According to *Ḥatam Sofer*, it is obvious that *muttar be-fikha* requires a kosher species, and as such, the blood of a kosher species (though not kosher to eat) would be acceptable. Rather, through an exacting analysis of Ravad's words, *Ḥatam Sofer* explains that Ravad's point pertains to *mashkeh Yisrael*. The rule of *mashkeh Yisrael*, which applies to *korbanot* (such as the incense), specifies that a substance actually be kosher to eat, though not necessarily from a kosher species.
R. Elyashiv explains that: "Ravad was not arguing against Rambam based on either *muttar be-fikha* or *mashkeh Yisrael* but simply on *sevarah*. . . . And to this, *Kesef Mishneh* responded that since the *mor* became *afra be-alma* there can be no reason to prohibit its use. Accordingly, the words of *Kesef Mishneh* do not disagree with the understanding of *Noda bi-Yehudah* that there is no difference in the law of *muttar be-fikha* whether the object changed" (*Ha-Yozei min ha-Tame bi-Tefillin u-bi-Tekhelet*, *Zohar, ḥelek* 3, 51, s. v. *ve-omnam* [ed. R. E. Devorkas, 5758]).
In any case, whether the issue of Ravad is over *muttar be-fikha* (as per *Noda bi-Yehudah*) or over *mashkeh Yisrael* (as per *Ḥatam Sofer*) or over *sevarah* (as per R. Elyashiv), all agree that the demands of *muttar be-fikha* are not mitigated by a substance becoming *afra be-alma* in its final form.
19. *Mahadura Tanina (Orah Ḥayyim, 3)*, s. v. *od re'ayah*.
20. *Yerushalmi Megillah* (1:9, 12a); *Tosafot (Shabbat 108a, s. v. eizeh)*; *Shivat Ziyon* (#2, s. v. *ve-ein lomar*); *Ḥatam Sofer* (1:39, s.v. *le-zeh yesh*). See also *Ginnat Veradim (Orah Ḥayyim, 2:16)*.
21. *Ma'amar Petil Tekhelet, Sifrei ha-Tekhelet Radzin* (Benei Berak, 1990), *ot* 5, 51.
22. See note 45 for an explanation of why the Rabbi felt compelled to argue as such.
23. *Ein ha-Tekhelet, Sifrei ha-Tekhelet Radzin* (Benei Berak, 1990), *ot* 16, 268.
24. *Ibid.*, *ot* 9, 348.
25. E. Spanier and N. Karmon, "Mucrid Snails and the Ancient Dye Industries," *The Royal Purple and the Biblical Blue*, 183.
26. Rambam, *Hilkhoh Issurei Mizbeah* 4:7; *Kesef Mishneh* ad loc.; *Mishnah Berurah, Orah Ḥayyim* (11:8:35). *Sha'ar ha-Ziyun, Orah Ḥayyim* (11:8:25). Responsa *She'elat David, Orah Ḥayyim*, 3.
27. *Shabbat 108a*.
28. *Mahadura Tanina (Orah Ḥayyim, 3)*, s. v. *amar Shemuel*.
29. *Ibid.*, s. v. *omnam yesh li-dehot*.
30. *Ibid.*
31. "These are *tashmishi mizvah: sukkah, lulav, shofar, zizit*" (*Megillah* 26b).
32. Responsa *Olat Shabbat (Orah Ḥayyim 586:1)*. See further, note 41.

33. Rama (*Orah Hayyim* 586:1). *Magen Avraham* (*Orah Hayyim* 586:3).
34. So too *Torah Temimah* (Ex. 13:9, n.47; Ex. 25:4, n. 4). R. G. H. Leiner similarly explained that *muttar be-fikha* applies only to objects that inherently are required to be from a food source (*Petil Tekhelet, Sifrei ha-Tekhelet Radzin, ot* 5, 51, s. v. *u-mahar she-nityashev*); *Ein ha-Tekhelet, Sifrei ha-Tekhelet Radzin, ot* 11, 250, s. v. *u-ke-fi mah.*) Similarly, *Torat Hesed* (*Orah Hayyim*, 60:3), though he disagrees with *Magen Avraham* in general, tries to explain how, according to *Magen Avraham*, a *sukkah* can be made from an elephant.
35. Though there are some few who hold that *tekhelet* may come from sources other than the *hillazon*, the overwhelming majority opinion is that it must come from the *hillazon*. See R. Bezalel Naor "Substituting Synthetic Dye for *Hilazon*," *Journal of Halacha and Contemporary Society*, 24(1992), 97-107; Yehuda Rock, "Renewal of *Tekhelet* . . .," website expanded version, 12-13; Borstein, *Ha-Tekhelet*, 25-27.
36. *Mishbeẓot Zahav* 32:28.
37. 1:39, s. v. *ve-ha lo kashyah*.
38. A *mizvah de-oraita* according to those who rule according to the opinion of Rabbah in *Menahot* 39b (e.g., Rama, *Orah Hayyim* 9:1). Even according to those who hold that the *mizvah* is *de-rabbanan*, its parameters must be seen as being shaped by *de-oraita* principles, since *de-rabbanan mizvot* based on *de-oraita mizvot* "*ke-ein de-oraita tikkun*"—the rabbis defined *mizvot* like *de-oraita mizvot* (*Gittin* 65a).
39. Though the garment can use wool or linen *zizit*, this is a special dispensation. The specific ruling that silk *zizit* fulfills the *mizvah* for a silk garment is a unanimously held decision in the *gemara*, regardless of whether one holds that a silk garment is *de-oraita* or *de-rabbanan* (*Mishnah Berurah, Orah Hayyim* 9:3:9).
40. *Rosh ha-Shanah, Resh Perek Ra'uhu Bet Din* 212b.
41. "The words of *Olat Shabbat* are correct to allow a *shofar* from a non-kosher animal, . . . and from the words of Ran in the case of the *shofar*, there is room to be strict since it is likened to God's inner chamber" (*Shivat Ziyon*, #2, s. v. *gam yafeh*).
 "From the words of Ran, only *divrei kedushah* . . . but not other *mizvot* [require *muttar be-fikha*] . . . for if the *shofar* were not likened to God's inner chamber, he would have no doubts [that it could be of non-kosher material]" (*Hatam Sofer*, 1:39, s. v. *ve-ha lo kashyah*).
 "Rama [who stated (*Orah Hayyim* 586:1) that a *shofar* from a *tame* animal is invalid], himself writes in his *Darkhei Mosheh* that 'it is good to be strict [and use a *tahor* animal].' Obviously this [ruling to use a kosher animal for a *shofar*] is not based on the law but is merely a stricture (*humrah be-alma*)" (*Sedei Hemed, Aseifat Dinim, Ma'arekhet Hanukkah*, 14, 215, s. v. *ve-im*).
 See also *Torat Hesed* (*Orah Hayyim*, 60:4, s. v. *ve-yesh litmoah*), *Sha'ar ha-Ziyun* (*Orah Hayyim*, 586:1:14), *Responsa Avnei Nezer* (*Orah Hayyim*, 15, ot 9).
42. See *Enziklopedyah Talmudit* (vol. 15, 722) for a discussion of the *mahloket tannaim* over whether leather is required.
43. See *Enziklopedyah Talmudit* (vol. 15, 726).
44. R. G. H. Leiner, *Ein ha-Tekhelet, Sifrei ha-Tekhelet Radzin (Benei Berak*: 1990), ot 11, 252, s. v. *u-meyushav*.
45. On a historical note, the Radziner Rebbe did not adopt the opinion that *muttar be-fikha* was inapplicable to *zizit*. He held that just as the *shofar* is

accorded a special status, in that it is likened to God's inner chamber, so too *tekhelet* should be accorded the same status, in that it is likened to God's throne (*Ein ha-Tekhelet, Sifrei ha-Tekhelet Radzin, ot 9, 248*). Nevertheless, even by according special status to *tekhelet*, one must say that just as the *shofar* could be (*me-ikkar ha-din*) from a non-kosher animal, so too could *tekhelet*. The Rebbe was not of this opinion and so felt compelled to develop the unconventional interpretation that the blood of non-kosher fish satisfied the requirements of *muttar be-fikha*. He proposed primarily two possible means to accept the dye as kosher: either because the blood of non-kosher fish is biblically permitted (*Ein ha-Tekhelet, Sifrei ha-Tekhelet Radzin, ot 16, 267*) or because the dyestuff is like bee's honey (*Ibid., ot 9, 348*). Both of these solutions are problematic, as was previously discussed.

46. *Tekhelet*, as it is related to the *Mishkan*, appears in the Torah as: donations (Ex. 25:4; 35:6, 23, 25); *yeri'ot* (26:1); *lula'ot* (26:4; 36:11); *parokhet* (26:31; 36:35); *masakh petah ha-ohel* (26:36; 36:37); *masakh sha'ar he-ḥazer* (27:16; 38:18); *efod* (28:6, 8; 39:3, 5); *hoshen* (28:15; 39:8); *hoshen to efod petil* (28:28; 39:21); *me'il* (28:31, 33; 39:22, 24); *avnet* (39:29); *ziz petil* (28:37; 39:31); clothing (39:1); travel covers (Num. 4:6, 7, 9, 11, 12).
47. *Noda bi-Yehudah (Mahadura Tanina [Orah Hayyim, 3], s. v. omnam yesh li-dehot): Mishkan, Mikdash, and bigdei kehunah (priestly clothing) are tashmishi kedushah.* (Similarly *Ḥatam Sofer, 1:39, s. v. ve-ha lo kashyah*).
48. Though some exempt *tekhelet* in the *Mikdash* from the requirement to be of *hillazon* origin (R. Tuckachinsky, *Ir Ha-Kodesh ve-ha-Mikdash; Avnei Nezer, Orah Hayyim 16: 8-9*), *Mishneh le-Melekh* states explicitly that, according to Rambam (*Hilkhot Kelei Mikdash 8:13*), the requirement for *tekhelet* from the *hillazon* applies equally to both *zizit* and the Temple. Similarly, R. Herzog maintains that there is not the "flimsiest ground for drawing a distinction" between *tekhelet* in *zizit* and *tekhelet* in the Temple. He explains that the Talmud, in various places, discusses the *tekhelet* of *zizit* and that of the *Mishkan* together and without distinction ("Hebrew Porphyrology," *The Royal Purple and the Biblical Blue*, 55).
49. "These are *tashmishi kedushah*: sacks for keeping scrolls of Scripture, *tefillin*, *mezuzot*, a mantle for a *Sefer Torah*, a *tefillin* bag and *tefillin* straps" (*Megillah 26b*).
50. See Aristotle's "History of Animals." "Textiles in Biblical Times," *CIBA Review* (1968/2), 11.
51. *Encyclopaedia Britannica*, s. v. "Roads and Highways"; see also s. v. "Silk."
52. *Gezerah Shavah "ohel [Mishkan] [to] ohel [met]."*
53. The reasoning being that if the *taḥash* is a non-kosher animal, then given that its skins were used in the *Mishkan* (the definitive *ohel*), non-kosher animal skins similarly acquire *tum'at ohel* (determined via the *gezerah shavah* which indicates that what applies to the *Mishkan* applies to the corpse tent).
54. *Hiddushei ha-Rashba, Shabbat 28, s. v. ela ha de-tani.*
55. From the *kal va-homer* of R. Huna mi-Barnish (*Shabbat 28a-b*).
56. *Ḥatam Sofer* agrees with R. Hai Gaon's analysis (1:39, s. v. *ve-ulai*).
57. *Aseifat Dinim, Ma'arekhet Ḥanukkah, 14: 212, 215.*
58. *Sedei Hemed (Aseifat Dinim, Ma'arekhet Ḥanukkah 14: 206-07)* explains that *Rashash*, *Ritva*, and *Besamim Rosh* also hold that *muttar be-fikha* applies only to things with writing—*Torah azmah*.
59. And so follows the halakhah (*Enziklopedyah Talmudit, vol. 5, 586*). *Sedei*

Hemed (*Aseifat Dinim, Ma'arekhet Hanukkah*, 14: 213, s. v. *be-ot dalet*) cites *Beit Yizhak*, who uses the *mizvah* of *get* to prove that *muttar be-fikha* does not apply to all *mizvot*.

60. *Aseifat Dinim, Ma'arekhet Hanukkah*, 14: 216, s. v. *ve-al ha-re'ayah*.
61. *Mahadura Tanina (Orah Hayyim*, 3), s. v. *ve-gam yesh lomar*.
62. See *Hatam Sofer* (1:39, s. v. *ve-ulai*).
63. See *Torat Hesed, Orah Hayyim* 60:4.
64. *Mahadura Tanina (Orah Hayyim*, 3), s. v. *u-bar min dein*.
65. He then quotes *Maginei Shelomoh*, who explains that the reason the status of the *tahash* was questioned by the *gemara* (*mah havi alah de-tahash*) is that it was unclear whether these skins are considered *tashmish kedushah* (part of the *Mishkan* and as such would have to be kosher) or *tashmish mizvah* (not part of the *Mishkan* proper, but simply protect the *Mishkan* from the rain).
66. Similarly Rashi on Is. 1:18.
67. The first half of the statement is unequivocal that *tola'at shani* comes from a living creature. The second half of the statement *af kol davar she-yesh bo ruah hayyim* is ambiguous; the translation provided is interpretive, based on the commentary of Elijah of Fulda. For a discussion of the interpretation of the second half of the Yerushalmi see R. M. Margoliot (*Penei Mosheh and Mar'eh Panim*), loc. cit. Also Isaac Herzog, "*Ha-Tekhelet be-Yisrael*," (printed in Borstein, *Ha-Tekhelet*), 382. *Sedei Hemed (Aseifat Dinim, Ma'arekhet Hanukkah*, 14: 203, s. v. *hen emet*).
68. *Sifra Mezora, parashah aleph*, s. v. *Torat ha-Mezora*.
69. *Sifrei Be-Midbar, piska 124*, s. v. *Ezov ve-lo*.
70. *Torah Temimah* (Ex. 25:4, n. 4) does try to justify Rambam, explaining that one could interpret *tola'at* to mean the grain in which the insect is found. Nevertheless this is clearly a forced interpretation, inconsistent with the Yerushalmi (as well as with scientific evidence). Indeed, *Sedei Hemed* quotes the interpretation and states, "and this is a forced (*dohak*) interpretation of the language of the Yerushalmi" (*Aseifat Dinim, Ma'arekhet Hanukkah*, 14: 203, s. v. *hen emet*).
71. R.D. Lillie, "The Red Dyes Used by the Ancient Dyers: Their Probable Identity," *JSDC* (Feb. 1979), 60.
 "Kermes dye is obtained from the female *Kermococcus vermilis* which lives in the *Quercus coccifera* oaks found in the Mediterranean and Near East. Northern Israel harbours two of the species—*K. biblicus* which lives on a *Qu. Calliprinos* subspecies and *K. spatulatus* which lives on *Qu. Ithaburensis*—which were probably exploited in biblical times also" (I. Ziderman, "Biblical Dyes of Animal Origin," *Chemistry in Britain* 22, 5 [1986]: 419-22). Though there is some question as to which particular species was used for *tola'at shani*—there is no doubt that the source of the ancient crimson dye was from an insect—i.e., non-kosher.
72. R.D. Lillie, "The Red Dyes Used by the Ancient Dyers: Their Probable Identity," *JSDC* (Feb. 1979), 58.
73. *Ibid.*
74. *Encyclopedia Britannica* (Edition 15, 1985), vol.16, 645. "Textiles in Biblical Times," *CIBA Review*, (1968/2), 19.
 R. Aryeh Kaplan writes "From the context and from what is known of the dye, however, it appears that the 'pods' [*gargir*] are the mature insects, and the 'worms' [*tola'at*] are the eggs found inside. Crimson is obtained by

- crushing the eggs in mature female insects" (*Me-am Lo'ez*, Exodus VI, 358, n. 37). Also Eliyahu Tavger, "Ma'amar ha-Tekhelet," *Kelil Tekhelet* (Jerusalem, 1993), 327. See also R. M. A. Kaz, *Kiyyum Mizvat Tekhelet Zizit be-Yameinu, Kovez Or Yisrael, Gilyon* 10, n. 66.
75. Isaac Herzog, "Hebrew Porphyrology," 54.
 76. Aristotle, "History of Animals", ch.15; Herzog, "Hebrew Porphyrology", 20. The snails have been shown to be of the *Murex* family (*ibid.*, 20-34); J.T. Baker, "Tyrian Purple: An Ancient Dye, a Modern Problem," *Endeavour* 32 (1974):11-17; R.J.H. Clark, "Indigo, Woad, and Tyrian Purple: Important Vat Dyes from Antiquity to the Present," *Endeavour*, New Series, 1993, 191-99. See also *Encyclopedia Britannica*, s. v. "Indigo," "Dress," "Phoenicia."
 77. "Hebrew Porphyrology," 55.
 78. *Ibid.* 56.
 79. Y. Rock (15, n.57) explains that the "similarity" between the *hillazon* and fish is simply that they occupy the same habitat—the sea. He arrives at this conclusion by noting that this description (i.e., "similar to fish") is one of several in the *baraita* which concludes "consequently the dye is expensive." He reasons that all the preceding descriptions come to account for the expense. Living with fish (i.e., in the ocean) makes the *hillazon* difficult to obtain. This characteristic thus serves, along with the others listed, to justify the conclusion that its dye is expensive. See also Isaac Herzog, "Hebrew Porphyrology," 68, who explains that "from the sporadic allusion to the nature and characteristics of fishes" in the *gemara* no precise taxonomy can be inferred.
 80. "Hebrew Porphyrology," 68.
 81. *Pesikta de-Rav Kehana*, ch.11; *Midrash Tehillim, Mizmor* 23. The *hillazon* of the midrash is the *hillazon shel tekhelet* (*Ba'al Musaf he-Arukh, hillazon d'*).
 82. "Hebrew Porphyrology," 57. Also see R. Herzog, "*Ha-Tekhelet be-Yisrael*," in Borstein, 371; R. Isaac Herzog, *Ha-Hed* (Av 5692), quoted in Dr. Yisrael Ziderman, "Reinstitution of the *Mizvah* of *Tekhelet* in *Zizit*" (Hebrew), *Tehumin* 9 (1988), 430. Also R. Avraham ben ha-Rambam, Responsa *Birkat Avraham*, 19.
 83. A variant *midrash* (*Devarim Rabbah* 7:11) states, ". . . all the time it grows, its clothing (*malbusho*) grows with it." Though the *gemara* (*Niddah* 51b) refers to the scales (*kaskeset*) of a fish as its "clothing" (*levush*), the *gemara's* (*Shabbat* 75a) use of the verb *pozea* (break open) does not easily apply to the cutting opening of a scaly fish. Indeed the *gemara* (*Hullin* 21a) uses the term "tear" to refer to the opening of a fish. (See Twerski [above, n. 1], 84). The verb *pozea* is employed throughout the *gemara* with various meanings, primarily: 1) bruising—as in olives (*Shabbat* 50b); 2) breaking open—as in nuts (*Shabbat* 115a). Since the object of the *pezi'ah* as related to the *hillazon* is not to bruise it, but rather to reach its innards and extract the dyestuff, the usage implies the breaking open of something hard.
 84. In fact, though it is impossible to prove a negative, there are no ancient dyes known to have been produced from kosher fish (personal conversation with Prof. Yehuda Felix).
 85. ". . . between *tekhelet* and *karti*—between *porphyra* and *prifinin*. . ."
 86. Otto Elsner, "The Past, Present and Future of *Tekhelet*," *The Royal Purple and The Biblical Blue*, 175.
 87. 2:276, s. v. *ve-hineh*.

88. R. Elyashiv, “*Ha-Yozei min ha-Tame bi-Tefillin u-bi-Tekhelet*,” *Zohar* 3 (5758): 51, s. v. *u-be-ezem*.
89. *Mishbeẓot Zahav* 32:28
90. As an aside, R. S. Landau in a later responsum in his own *Shivat Ziyon* (#2, s. v. *u-mah she-amad*) limits the application of *muttar be-fikha* only to things which have actual writing—“*Torah aẓmah*.” (See also his *Haggahot to Doresh le-Ziyon*, ch. 11, s.v. *ve-hinei al mizvot aseh*).