

was of the opinion that in most cases the proper motivation was lacking." Forgive me if I fail to discern how this statement can be used as proof that I (or Rav Feinstein) approved the practice.

Furthermore, I take umbrage at your referring to those who are interested in holding such groups as having "corrupted anti-Torah ways" or as "people seeking to right the injustice they have suffered in past generations." Rav Moshe Feinstein carefully stayed away from that kind of rhetoric, and I think it would be very constructive if we all followed his example. You may be right – but, on the other hand, you may not. In general, I believe that judging other people's motivations and weighing their sincerity is best left to the *Ribono Shel Olam*.

As for Rabbi Bess's comment on *parshat Zachor*, I am curious to know how you can be so certain that the women who come to shul for that *kriah* do mean it *le'shem shamayim*. Since Rav Moshe rules that they can discharge this obligation by reading at home from a printed *chumash*, why do they choose instead to come to shul? We all seem to agree that Rav Moshe was opposed to the practice of taking a *Sefer Torah* out to read *parshat Zachor* for women only – nevertheless, it is a fairly widespread practice. How come Rabbi Bess is not disturbed by that? If he finds it acceptable because, in his judgment, the women who come to hear a special reading of *parshat Zachor* do it "for the right reasons", it would seem proper to entertain the notion that perhaps other women could also be similarly motivated in other circumstances.

RABBI ALFRED COHEN

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Rabbi Rabinowitz responds:

Rabbi Bess takes issue with the comparison of a

crockpot to a hot plate. I definitely think that his arguments are valid, as I myself make the same arguments in the article (p. 111). I clearly state that the *issur of sh'heah* would be circumvented if a crockpot had the same halachic status as a hot plate. I then went on to argue that a crockpot may not be similar to a hot plate as it is *derech bishul* (the ordinary method of cooking) which is not true with regard to a hot plate. Rabbi Bess also thinks that since the crockpot has an adjustable temperature it would not fit the criteria to be classified as a hot plate. I also brought up this objection in my article (p. 111) and had a possible solution of covering the temperature knob. Rabbi Bess takes further issue using this comparison to exempt a crockpot from the prohibition of *chazarah*.

I am not sure on which point he thought I erred. With regard to the comparison of a crockpot to a hot plate, I already stated the objections to that (p. 111). Perhaps Rabbi Bess feels that with regard to a hot plate, though there is no prohibition of *sh'heah*, there is still a problem of *chazarah*. He would not be alone in thinking this, as in footnote 53 I quote Rabbi Tzvi Pesach Frank ruling the same way. In conclusion, all of Rabbi Bess's points are valid, as a closer perusal of the article will reveal.

RABBI DANIEL RABINOWITZ

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To The Editor:

I found the article "Identifying the Chilazon" (JHCS XXXIV Fall 1997) truly amazing. Contemporary research has discovered a method to produce the dye, indigo, from a mucus found in the snail, *Murex Trunculus*. Indigo, by the author's own admission, is the dye *Chazal* called *k'la ilan*, specifically identified as *possul* for *techelet*. Yet the article contends to

have established an *umdanah d'muchach* – a proven assumption – that this dye is in fact *techelet*.

The article mentions two serious disputes among the *Rishonim* concerning the identity of the chilazon. Rabbenu Bachya is quoted as implying the chilazon is a *kosher* species while Rashi in *Sanhedrin* describes it as a worm. The article also quotes the Rambam's statement that the chilazon has black "blood" while Rashi and Tosafot imply that the "blood" is blue (frankly, I will admit that I fail to follow the author's argument concerning the position of Rashi and Tosafot). This, in and of itself, should preclude the possibility of anyone from recent generations making a definitive identification. To quote the author, "In matters of fact ... both cannot be correct." If I understand the thesis he presents correctly, it contends that both Rambam and Rashi are wrong regarding the color of the "blood", the dye itself being first colorless and then purple, the blue color appearing only after the dyed fabric is exposed to oxygen.

But there are more fundamental textual problems with identifying the chilazon. As the article states, Rashi in *Sanhedrin* describes it as a *tola'at*, a worm. But the Rambam quite clearly identifies it as a fish (*Hilchot Tzitzit* 2:2). Furthermore, Rashi in *Menachot* 24a interprets the statement "*Bri'ato* is like a fish" (curiously translated in the article as "its creation") as "*tavnit di'yiukno*" – its physical form is like a fish (see gloss *za 'yin* in the *Shita Mekubetzet*; see also the commentary of Rabenu Gershom ad. loc.). This statement also appears to be the source of the aforementioned Rambam.

The author brings impressive evidence to show that the chilazon is a mollusk. His explanation of "*ha-potzeiah chilazon*" is ingenious but at variance with Rashi's interpretation. Rashi (*Shabbat* 75a) explains "*ha'potzeiah*" as one who "squeezes it [the chilazon] with his hand so that the blood comes out." Rashi's explanation implies more a soft-skinned

creature than a hard-shelled mollusk. Tosafot and other *Rishonim* seem to accept Rashi's interpretation.

The article also quotes the *Beraita* of R. Yosef in *Megillah* 6a which identifies "*sfunei tmunei chol* – treasures buried in the sand" with the chilazon. This, it is claimed, fits the *Murex* which burrows into the sand. In fact, though, the *Beraita* splits up the *possuk* and only the word "*sfunei*" – "treasures" is considered an allusion to the chilazon. The word "*tmunei*" is explained as a reference to the fish *tarif*, apparently a *kosher* species. Rashi ad. loc. identifies it as the tunny fish. Therefore there is no implication that the chilazon itself is to be found in the sand.

Of course, if we could positively identify the chilazon, we would have to reinterpret the various statements of *Chazal* in light of that identification. We could perhaps disregard the descriptions of the *Rishonim* inconsistent with our identification on the basis that they were unfamiliar with the chilazon. But in fact, how can we identify the chilazon on the basis of "history, chemistry and archaeology" and ignore the statements of the Talmud and the *Rishonim*?

I believe the identification of the chilazon with the *Murex Trunculus* is a valid scientific hypothesis. The circumstantial historical evidence that the article brings is formidable. And the discovery of a blue dye naturally produced from a Mediterranean sea creature is, in and of itself, significant. But the true issue facing *poskim* today is whether it is *halachically* significant enough to override the ruling of the *Shulchan Aruch* (*Orach Chaim* 9:5) that the *tzitzit* should be the color of the *talit* (for Sephardim) or the ruling of the *Ramo* (*ibid*) to use only white *tzitzit* (for Ashkenazim).

No one with even rudimentary familiarity with the halachic process would expect to find certainty. But *mesorah*, in the broader sense of the word, can provide a framework that enables us to deal with the uncertainty that exists.

Without a *mesorah*, we are left fishing in the murky waters of historical supposition.

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Rabbi Twerski responds:

I thank Rabbi Goldstein for his careful study of my article and for bringing some valid points to light. I am thankful to him as well for bringing his issues to print in a public forum, for I have been made aware that Rabbi Reisman has issued a taped lecture that focused on much of these same issues. Consequently, this forum allows me the opportunity to reply to these questions. After due consideration, I find that none of the points raised, nor even the sum of all of them, are significant enough to discredit the thesis of the article.

I shall respond in order of his questions.

A) The first point he raises (if I understand him correctly) is that the fact that dye produced by *k'la ilan*, (indigo) is the same as produced by *murex*, disfavors the identification of *murex* as the *chilazon*, for if the dye chemical of *murex* is identical, why should one be valid and the other not valid?

From my perspective, if we accept the evidence that *chilazon* is a mollusk, then the most powerful evidence in favor of identification of *murex* as *chilazon* is the fact that the chemical dye, indigotin, is the same. It therefore amazes me that the same fact that is seen by me to be the most convincing evidence in favor of identification with *murex*, is seen by Rabbi Goldstein as a point against identification.

כשם שאין פרצופיהן שווין כך אין דעתן שווה.

To answer to Rabbi Goldstein's question: Although the chemical dye from indigo and *murex* is one and the same, the source is different. One comes from the *chilazon* and the other comes from the indigo plant. There need be nothing more to distinguish between the two. By analogy, there is no question that artificial parchment, if ever invented, would be totally invalid for the *mitzvah* of *t'fillin* and *mezuzot* even if, in fact, it would be chemically identical to and indistinguishable from parchment made from the hide of an animal. The identity in color is a point in favor, not against, identification with *murex*.

B) Rabbi Goldstein writes "frankly, I will admit that I fail to follow the author's argument concerning the position of Rashi and Tosafot" regarding the blue color of the dye.

Rabbi Goldstein is correct; I was not clear enough. The argument can be found in the Radziner's *Sefer, Ein Ha'techelet* § 22, and I shall elaborate.

The strongest argument in favor of the Radziner's identification with *sepia* is the statement of the Rambam, that the color of the dye is black before introducing chemicals to alter the color. One of his opponents pointed out that Rashi and Tosafot both seem to hold that the color of the "blood" of the *chilazon* is the color of *techelet* (i.e. blue). Rashi states that the chemicals introduced into the dye were introduced only to fix the dye into the fabric and Tosafot *ad loc*, ask (seemingly accepting Rashi) that if chemicals are introduced into the dye, then the purity of the *techelet* would be compromised.

The one who asked the question, as well as the Radziner who accepted the question, reasoned thus: we have two

choices 1) the color of the "blood" itself is blue or 2) it is some other color and chemicals were added to change the color to blue. Since Rashi states that the chemicals are added only to fix the dye, we may infer that the purpose was not to alter the color as it comes from the *chilazon*. Since the dye color is blue, then the "blood" itself must therefore also be blue.

Tosafot ask on the *Baraita*: if chemicals (to fix the dye to the fabric) are introduced into the process, then the purity of the *techelet* is compromised. The questioner asks that if the color of the dye would be black, then Tosafot's question would have no validity, since it would be obvious that something must be added to the "blood" of the *chilazon* to change the color from black to blue. Tosafot's answer, that it is with the added chemicals that we have the color of *techelet*, did not seem to him to be a total retreat from the assumptions taken in the question (though one could argue that it is).

The Radziner's solution to this problem, that these *Rishonim* were merely surmising what the color of the dye was, since they did not have the *chilazon* in hand, for it had been in disuse for about 400 years by the time Rashi and Tosafot were dealing with the question, is certainly a valid argument.

Now, assuming that *murex* is the *chilazon*, the color of the dye, after going through several stages, is known to be purple, not blue. What is important, however, are two points, 1) chemicals needed for the *techelet* dyeing process are, as Rashi assumed, for the sake of fixing the dye to the fabric (though not exactly as Rashi assumed that the chemicals were added to the wool as a mordant, but rather in order to make the dye water soluble, which then allows the dye to saturate the wool); and 2) it is not the chemicals that create the change in color, but sunlight. Thus, neither

Rashi nor Tosafot stated explicitly that the color of the dye as it was extracted from the *chilazon* was blue, only that the chemicals introduced into the dye were not for the sake of changing the color. This in fact is so. Chemicals are added to make the dye water soluble, and in the process the color is changed by the sunlight, not by the chemicals per se. Nothing that Rashi or Tosafot say here is inconsistent with identification with *murex*.

At this point, I would like to address what seems to be an incorrect implication in the first paragraph of Rabbi Goldstein's letter. He states (paraphrasing the article) "Contemporary research has discovered a method to produce the dye, indigo, from a mucus found in the snail, *Murex Trunculus*." Implied by this is that this discovery is only of recent origin and it is quite likely that the ancients knew nothing of it.

In a footnote of my article, I noted that Otto Elsner made the discovery that if the reduced solution containing dibromoindigo is exposed to sunlight, the ultraviolet rays of the sun will detach the bromine atoms from the indigo and these would be replaced by hydrogen atoms, yielding indigotin. It would be of interest to the reader to know how the secret of obtaining *techelet* out of dibromoindigo was discovered by Otto Elsner. As anyone who has witnessed the dyeing process with *murex* will attest, the vat solution of dibromoindigo emits a strong, offensive odor (a fact noted by Pliny as well). Elsner did much of his research in his home. Mrs. Elsner had just about as much as she could tolerate and asked her husband to conduct future experiments out of doors. He complied, and then, to his surprise, noticed that the resultant dye was no longer deep purple but sky-blue. It did not take very long to realize that this was the result of the exposure to sunlight. This being the case, it would hardly be conceivable that those who worked with dyes in the ancient

world would not come to the same discovery due to the very same circumstances the led Elsner to his discovery.

C) As Rabbi Goldstein says, the Rambam identifies the *chilazon* as a fish. However, I cannot agree with him that the source of this identification is the *Beraitha* that describes the *chilazon* as ברייתו דומה לדג. When attempting to describe something, one will never use the object itself as a means of comparative identification. If the *chilazon* is indeed a fish, in the same sense that trout, salmon or cuttlefish are fish, then it would not be said that the *chilazon* is like or similar to a fish, for then it is a fish. To describe a creature that is a fish by stating that it is *like* a fish would be a meaningless description. The only way to make sense of the Rambam in light of the *Beraitha* is to say that the Rambam means by "fish" that it is a creature of the sea, but not a fish in the common sense of the word. If so, the Rambam is not saying anything about its form.

It was acknowledged in the article that the meaning of the *Beraitha's* statement, that ברייתו דומה לדג, is somewhat difficult to explain. The suggested answer (that this means, in a literal sense, "its creation", - its way of coming into existence) was not meant to be the simplest and obvious interpretation. (At the same time, I don't consider this a far fetched or extremely forced interpretation, either.) Perhaps there are better solutions as to how to reconcile this statement with *murex*. Had the *Beraitha* itself used the word חבורו or חבורו, I would have to agree that this would be a strong argument, perhaps even a conclusive argument, against identification with *murex*, but, as the Radziner said with regard to the color of the mucus, the interpretation of the term ברייתו by Rashi and other *Rishonim*, even if in total variance with identification with *murex*, could nevertheless not be considered as strong evidence against such identification, since the *Rishonim*

lived long after the *chilazon* had disappeared from the scene.

The assertion that *chilazon* is a mollusk comes from a number of sources. Foremost of these is the fact that the word is still extant in several Semitic languages and means 'snail' in each one. Rav Herzog (*The Royal Purple and the Biblical Blue*, Ehud Spanier ed., Keter Publishing, page 57) says,

*Chilazon* of the Talmudim, the Midrashim, and Targum Jonathan is the Syriac Helzuna and the Arabic Halazun. In these languages the word denotes: (1) the land shell-snail, French limacon (as distinct from limace, naked snail); (2) the sea shell-snail (limacon de mer). It doubtless has the same meaning in the Jewish sources. The shell of the *chilazon* is called נרתיק, case: מלבוש garment, cloak. The verb פצע employed of the crushing of the *chilazon* has reference in Tanaitic [usage] to some hard crustaceous substance. An allusion to the shell seems to be contained in *Megillah* 7: ושפוני טמוני חול: תנא רב יוסף שפוני זה חלזון טמוני זו טרית חול זו זכוכית לבנה. Rashi annotates: שפוני הוא דבר חשוב בלשון ברייתא. More probably, I think שפוני is interpreted in its biblical significance of something hidden from view, concealed, treasured; the shell snail or rather the particular species yielding the precious purple dye.

We add to the list of linguistic identifications that the word for snail in Assyrian, the spoken language which is the direct descendent of Aramaic (as much as Spanish and French are descendants of Latin), is also *chilazon*.

I would venture to say that this alone would be sufficient for positive identification of *chilazon* as "snail". The *Beraitha* that states the shell of the *chilazon* grows along with it adds powerful support to this identification. Any proofs beyond this are merely "icing on the cake."

In my mind, there can be no doubt whatsoever that the *chilazon* is a snail. The question is only which snail.

I do not agree that Rashi's statement about פציעת *chilazon* is at variance with the assertion that the *chilazon* is a mollusk. Rashi states merely that one would פוצע a *chilazon* to squeeze out its blood. I think that Rashi would also agree that the term פוצע means to crack open. However, that itself (the cracking of the snail's shell) is not a *melacha* to which the Gemara could refer to in employing this term. The Gemara is referring to the *melacha* of *dosh* which involves extracting one matter from another. It is therefore squeezing the blood out of the *chilazon* that is meant by the Gemara. This is why Rashi stresses the squeezing, rather than the cracking, of the *chilazon*. It is therefore quite possible for Rashi to state that one squeezes the *chilazon* to extract the dye, even if he agrees that it has a hard shell that will be cracked in the process, which is the source of the term פציעה.

D) The objection to the article's employment of the above quoted *Beraitha* in *Megillah* has merit. I could explain my position, that the *Derasha* relies on the end of the phrase for identification with *chilazon*, but, instead, I concede this point. It is of no great significance. The identification of *chilazon* as "snail" stands rock solid with all the other proofs, as stated above.

E) The final objection with regard to the identification of *murex* as *chilazon*, is the main thrust of Rabbi Goldstein's argument. There are statements in the *Rishonim* that are not consistent with *murex* being the *chilazon* of *techelet*. There are also some statements of *chazal* that would require at least some interpretation. The arguments in favor come from archeology, history, and chemistry along with a few supporting statements from *chazal*. Is this sufficient, without a *mesorah*, to identify *murex* as *chilazon*?

Let's take what is known. I would consider the

identification of *chilazon* as a mollusk as a certainty based on linguistic comparisons and the statement of *chazal* that the *chilazon* has a shell. Add to this 1) the fact that the *murex* was known was known to be used in the ancient world for dyes, as archeology has established beyond any doubt, 2) the fact that *techelet* was used by the royalty in ancient times, as is evident from several references in *Nevi'im* and *Ketuvim* 3) that the color of *murex* is known to be the color of *techelet*, 4) that the *murex* is found where the *chilazon* of *techelet* was known to be found, off the coast of ancient Phoenicia, 5) the *murex*-based dye is permanent, a feature *techelet* has in common with *murex* dyes and what was uncommon in ancient dyes, 6) the identification of *techelet* as *purpura* by the Ra'avya, 7) that there is no Mishnah or *Beraitha* that warns against the use of an indigo type dye of any other mollusk source, as it did warn against the use of plant indigo, which is a clear indication that there was no mollusk existent in ancient times that would be invalid for *techelet*. Now, weigh all these points of evidence in favor of identification with *murex* against the few points raised in opposition. In my opinion the weight of the evidence goes far beyond being a mere "scientific hypothesis" or "murky historical speculation." I would consider this identification of *murex* as *chilazon* as proven well beyond a reasonable doubt.

F) The last point of Rabbi Goldstein does not concern the issue of whether *murex* identifies with *chilazon*, but regards a secondary issue, whether there is any harm in wearing the blue dyed strings if it turns out that this is not *techelet*. The article quoted the Radziner Rebbe's position that there is no harm whatever. Rabbi Goldstein dissents by saying that we do indeed lose if we are not correct in the identification, for there is a custom quoted in the *Ramo*, that only white colored strings should be used for *tzitzit*.

The *Mechaber* writes (*Hilchot tzitzit* 9:5) "Some say that the *tzitzit* should be the same color of the garment. Those who are exacting in the fulfillment of mitzvot conduct themselves this way." The *Ramo* adds to this: "the Ashkenazim make the *tzitzit* only out of white material even if the garment is colored, and one should not alter this."

The source of this *Ramo* is the *Terumat Hadeshen* 46. The question discussed in that response is whether one may sew a torn corner with colored silken thread. We would normally be concerned lest the leftover thread be used for the *tzitzit* which would, of course, be *passul*. In the statement where the *Terumat Hadeshen* states the custom to make the *tzitzit* only with white threads, he states, "I have never seen anyone wear anything but white *tzitzit*, although it makes no difference what color the *tzitzit* are. Nevertheless, since it is not the custom [to make *tzitzit* out of colored threads] it would appear to me that we should not be concerned [that the colored silken threads would be used for *tzitzit* and it should be permitted to allow the sewing of the corners with colored silk thread]."

It is apparent from the source of the *Ramo* that the custom to have white thread is a not built upon a concern for an halachic opinion. It is certainly unreasonable to assume that the *Ramo* meant to forbid the use of blue colored threads if this would be a serious attempt to fulfill the *din Torah* of wearing *techelet*.

Moreover, the *Radziner* (*Ein Hachelet* §40) in addressing this issue, concludes, with cogent arguments based on the *Gemara* in *Menachot*, that the rule of the *Ramo* applies only to the three threads of *lavan*, not to the white replacement thread of *techelet*, which can be of any color, even in absence of *techelet*.

I would think that the question that *poskim* face is not

whether this *minhag* of wearing only white threads should be upheld in face of wearing "questionable" *techelet*. The question will be whether or not to establish *techelet* as a rediscovered mitzvah or not, and resistance to change and concern for tradition for tradition's sake will be the most important negative factor. The concept of *chadash assur min hatorah* will be employed by those who find comfort in maintaining exactness in keeping with the traditions of Judaism as practiced in Europe. The question is more one of attitude than of halacha.

As I stated in the article, we have no continuous *mesorah* with regard to *techelet*. The existence of a *mesorah* in any mitzvah, is, of course, the most reliable source of knowledge for the fulfillment of mitzvot. How else do we fulfill the mitzvah of *arba minim* or *t'fillin*? However, I know of no source in the Talmud or in the *Poskim* that indicates that in absence of a *mesorah* we are obligated to push aside a mitzvah that has, beyond a reasonable doubt, been identified. The light of *mesorah* is indeed bright. However, in its absence, the light of reason and understanding should be sufficient to dispel the murky darkness of our ignorance.

CHAIM TWERSKI