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Mav the studing of the Daf Notes be a zechus for their neshamot and mav their souls find peace in Gan Eden and be bound up in the Bond of life

***The Thirty-Nine Labors***

The *Mishna* had stated: Tearing in order to sew (*is one of the thirty-nine primary labors*).

The *Gemora* asks: Was there “tearing” in the Mishkan?

Rabbah and Rabbi Zeira both said: A curtain which a worm fell on it (*and caused a hole*) was torn (*around the hole*) and then sewn.

Rav Zutra bar Toviyah said in the name of Rav: He who pulls the thread of a stitch (*to draw the two pieces of the garment together*) on *Shabbos* is liable to a *chatas* (*for sewing*), and he who learns a single thing (*even Torah*) from a heretic is liable to death (*for it will draw him towards idolatry*), and he who is able to calculate the seasons and planetary courses but does not, one may not report words of Torah from him. [*The science of astronomy, and specifically the movements of the sun and the heavenly bodies, was necessary for the fixing of the calendar, upon which Jewish Festivals depended.*]

As to a “*magoshta*”, Rav and Shmuel (*disagree*): one maintains that it is a sorcerer; and the other maintains that it is a blasphemer.

The *Gemora* notes that it may be proven that it is Rav who maintains that it is a blasphemer, for Rav Zutra bar Toviyah said in the name of Rav: He who learns a single thing (*even Torah*) from a (*magush*) heretic is liable to death (*for it will draw him towards idolatry*). Now should you think that it is a sorcerer, surely it is written: you shall not learn to do (*acts of*

*sorcery*), which implies that you may learn in order to understand and rule (*on these matters*)! This indeed proves it.

Rabbi Shimon ben Pazi said in the name of Rabbi Yehoshua ben Levi in the name of Bar Kappara: He who knows how to calculate the cycles and planetary courses, but does not, of him Scripture says: *They do not regard the work of God, neither have they seen the action of His hands.*

Rabbi Shmuel bar Nachmeini said in the name of Rabbi Yonasan: How do we know that it is one’s obligation to calculate the cycles and planetary courses? It is because it is written: *You shall safeguard and perform them, for this is your wisdom and understanding in the eyes of the nations.* What wisdom and understanding is in the eyes of the nations? It is that of the science of cycles and constellations.

The *Mishna* had stated: Hunting a deer (*is one of the thirty-nine primary labors*).

The *Gemora* cites a *braisa*: He who captures a *chilazon* (*a kind of fish whose blood was used for dyeing the curtains of the Mishkan*) and squeezes it (*with his hands, in order to remove its blood*) is liable to one *chatas* (*for trapping, but not for squeezing*). Rabbi Yehudah said: He is liable to two, for Rabbi Yehudah maintained: Squeezing comes under the category of threshing (*and squeezing the blood from the fish is similar to removing grain from its husk*). They said to him: Squeezing does not come under the category of threshing.

Rava noted: What is the Rabbis’ reason? They hold that threshing is applicable only to produce that grows from the ground.

The *Gemora* asks: But let him be liable as well on the score of taking a life?

Rabbi Yochanan said: It is referring to a case where he squeezed it when it was already dead.

Rava said: You may even explain it that he squeezed it while it was alive (*and the reason he is not liable for "taking a life" is because*) in respect to the taking of life he was preoccupied (*for that was not his intention*).

The *Gemora* asks: But Abaye and Rava both said that Rabbi Shimon (*who, generally, exempts one from liability if he did not intend for that action*) admits in a case of an inevitable consequence!?! [*Literally defined as 'if the chicken's head is cut off, is it not certain that it will die? Rabbi Shimon holds that a labor performed unintentionally in the course of doing something that is permitted is itself permitted, unless it follows inevitably as a result of his action. Here as well, it must inevitably die when squeezed.'*]

The *Gemora* answers: Here it is different, because he is more pleased that it should be alive, so that the dye should be clearer. [*Therefore, its death is more than unintentional, but actually contrary to his desire. R' Shimon does not agree in such a case.*]

The *Mishna* had stated: And slaughters it (*is one of the thirty-nine primary labors*).

The *Gemora* asks: As for the slaughterer, on what score is he liable?

Rav said: It is on account of dyeing (*for the blood gushes forth from its cut throat and stains and dyes the flesh around it*), while Shmuel said: It is on account of taking a life.

The *Gemora* asks: It is on account of dyeing but not on account of taking a life!?

The *Gemora* answers: Say that Rav means that he is liable on account of dyeing as well.

Rav said: As to this opinion of mine, I will make a statement about it so that later generations should not come and ridicule me. Why is one pleased with the dyeing (*of the flesh when he is slaughtering the animal*)? One is pleased that the throat should be stained with blood, so that people may see it (*that it was recently slaughtered*) and come and buy from him.

The *Mishna* had stated: Salting it and tanning it (*are from the thirty-nine primary labors*).

The *Gemora* asks: But salting and tanning are identical (*for the salting of the hide is the beginning of the process of tanning; why list them both*)?

Rabbi Yochanan and Rish Lakish both said: Omit one of these and insert the tracing of lines (*as one of the thirty-nine; this was done by those working with leather in order to cut the hide to its desired size*).

Rabbah son of Rav Huna said: He who salts meat is liable on account of tanning (*for it hardens it*).

Rava said: Tanning does not apply to foods.

Rav Ashi noted: And even Rabbah son of Rav Huna ruled that it is tanning only when he requires it for a journey (*and he is salting it to preserve it*), but when he needs it for his house (*in order to eat*), one does not turn his food into wood (*and therefore, it is not similar to tanning at all*).

The *Mishna* had stated: Smoothing it and cutting it (*are from the thirty-nine primary labors*).

Rav Acha bar Chanina said: He who rubs (*smooths the ground*) between columns (*of a pavilion*) on *Shabbos* is liable on account of smoothing. [*This was done in order for it to be more pleasing for people to sit in the open spaces between the pillars.*]

Rabbi Chiya bar Abba said: Rabbi Ami told me three things in the name of Rabbi Yehoshua ben Levi: He who planes the

tops of beams on *Shabbos* (in order to level and sharpen them) is liable on account of cutting. He who spreads a dressing (evenly over a sore) on *Shabbos* is liable on the grounds of smoothing. And he who chisels around a stone on *Shabbos* (to polish it) is liable on account of “striking the final blow.”

Rabbi Shimon ben Kisma said in the name of Rabbi Shimon ben Lakish: He who engraves a figure on a utensil (which is typically beatified with such engravings), and he who blows in glassware, is liable on account of “striking the final blow.”

Rabbi Yehudah said: He who removes (extra) threads from garments on *Shabbos* is liable on account of “striking the final blow,” but that is only when he objects to them.

The *Mishna* had stated: Writing two letters (and erasing in order to write two letters are from the thirty-nine primary labors).

The *Gemora* cites a *braisa*: If one writes one large letter in the place of which there is room for writing two, he is not liable. If, however, he erases one large letter and there is room in its place for writing two, he is liable.

Rabbi Menachem the son of Rabbi Yosi said: And this is the greater stringency of erasing over writing.

The *Mishna* had stated: Building, demolishing, extinguishing, kindling, and striking the final blow (are from the thirty-nine primary labors).

Rabbah and Rabbi Zeira both said: Whatever comprises the finishing of the work imposes liability on account of “striking the final blow.”

The *Mishna* had stated: These are the primary labors.

The *Gemora* notes: The word “these” is to reject Rabbi Eliezer’s view, who imposes liability on account of a derivative labor (a *toladah* - when performed concurrently) with a primary labor (an *av melachah*). [R’ Eliezer holds that one is liable to one *chatas* for the *toladah* and one for the *av*;

therefore, the possibility exists that one can incur more than thirty-nine *chatas* offerings.]

The *Mishna* had stated: [Forty] minus one.

The *Gemora* notes: This is to reject Rabbi Yehudah’s view, for it was taught in a *braisa*: Rabbi Yehudah adds the lining up (of the warp threads) with a rod (to separate them from each other) and the beating (of the weft thread, so that it will lie tightly on the cloth). They said to him: Lining up with a rod is included in the mounting of the warp, and beating is included in weaving. (73b – 74b)

## INSIGHTS TO THE DAF

### *The Study of Astronomy and Astrology*

Those who are interested in the study of Astronomy will be happy to know that their interest is quite encouraged by our *Gemora*: Anyone who is able to calculate the cycles of the solar calendar and the constellations but does not do so, of him the *posuk* states, Upon the acts of G-d they do not gaze, and the works of His hands they do not see. Rebbe Shmuel bar Nachmeini taught in the name of Rebbe Yochanan: from where do we know that it is a mitzvah to calculate the solar cycle and that of the constellations? From the *posuk*, You must guard them and keep them, for they are your wisdom and understanding in the eyes of the nation. This refers to calculating the cycles of the sun and the constellations.

A perusal of the commentaries here reveals that the wisdom of studying the Heavens is divided into three categories: astronomy - studying the course of the planets and stars in their orbits; astrology - studying the influence that heavenly bodies exert upon human affairs; and the laws of *Kiddush HaChodesh* - determining when the new moon will be sighted, in order to calculate the beginning of the month.

Many commentaries agree that our *Gemora* refers specifically to astronomy. The Radak (Yeshaya 40:26) explains the importance of this study, that it draws a person to an awareness of Hashem, by contemplating His awesome works in the Heavens. Similarly, the *Chovos HaLevavos*



(Introduction, and Fifth Gate) and the Rambam (Teshuvos Pe'er HaDor, 53) explain that by contemplating Hashem's creations, we are inspired to love Him, and to recognize our own smallness in comparison to these wonders.

On the other hand, Rashi, Ramban (Teshuvos HaRashba, 283. This entire volume of Teshuvos was once attributed to the Ramban, until it was later revealed that the Rashba was its true author. Nevertheless, this specific Teshuva was indeed written by the Ramban, and cited here by his student, the Rashba. See also Ramban's commentary to Sefer HaMitzvos, 1, s.v. *Vehateshuva harivi'is*), Rav Y. Ibn Shuyav (Derashos R"Y Ibn Shuyav, parshas Devarim, s.v. *U'bezoas hadaas*), Tashbatz (Teshuvos I, 106) all explain that our *Gemora* refers to the wisdom of astrology - foreseeing the future, based on a knowledge of the stellar patterns. The debate among the Rishonim in regard to astrology was discussed at length in Meoros HaDaf HaYomi on Sanhedrin 65b.

An example of the wisdom that can be gleaned through astrology is found in the Maseches Eruvin (56a), where Shmuel taught, "Whenever *tekufas Nissan* (spring) begins under the influence of the star *Tzeddek* (Jupiter) the trees will be broken. Whenever *tekufas Teves* (winter) begins under the influence of *Tzeddek*, the seeds will wither."

Having established that there is in fact an obligation to study these areas of wisdom, we must now ask how to compare this with the ever-present obligation to toil in the study of the holy Torah, as the *possuk* says, "You will contemplate it day and night." All agree that studying the cycle of the sun and moon is itself a branch of Torah study. Only by understanding their paths can one predict the appearance of the new moon, and thus set the date of Rosh Chodesh (Tosefos Yom Yov, Avos ch. 3). Furthermore, the complicated laws of *Kiddush HaChodesh* are discussed at length in the Rambam. Studying his works is undeniably considered Torah study (See Teshuvos Radach 13; Teshuvos Chasam Sofer, Kobetz Teshuvos 26). Our question, instead, is pointed toward those aspects of astronomy that are irrelevant to *Kiddush HaChodesh*, and to the study of astrology.

This question was addressed by the Sefas Emes zt"l, the

Rebbe of Ger, in his commentary to our *mesechta*. He concluded that the obligation to study these matters is relevant only in times when it is impossible to learn Torah. The Sefas Emes' son-in-law, Rav Y.M. Biderman zt"l, brings a source for this conclusion from the Midrash (Devarim Rabbah, 8:6), which says: "Torah is not to be found among astrologers, whose occupation is in the Heavens." Shmuel was once asked, "You are an astrologer, and also a giant of Torah study?" "I only contemplate the Heavens when I am in the bath house, and cannot study Torah," answered Shmuel.

Alternatively, the Sefas Emes suggests that perhaps since the study of the stars is a mitzvah, it should be regarded like all other mitzvos. Although one must devote all his energies to studying Torah day and night, he must nevertheless find time to perform this mitzvah, as he would any other.

The Midrash cited by Rav Biderman, which discourages the study of the stars, seems to contradict our *Gemora*. The Maharal of Prague (Nesivos Olam, Nesiv HaTorah: 14) explains that we must distinguish between astrology, discouraged by the Midrash, and astronomy, which the *Gemora* encourages. By studying the orbits of the stars and constellations, we begin to recognize the greatness of the Creator. He concludes by writing, "Man is obligated to engage in any study that helps him understand the essence of the world - in order to recognize his Creator. However, he should not study these topics under a disreputable teacher."

In regard to the opinion of Rashi and other Rishonim, who hold that our *Gemora* does encourage astrology, the Ramban states an important disclaimer. "There is no obligation to study astrology. However, one who is knowledgeable in these matters, is obligated to use his skills to reveal future events to the nations of the world," (Sefer HaMitzvos, ibid). According to this, there is no contradiction between the Midrash and the *Gemora*. The *Gemora* did not mean to encourage the study of astrology. It merely meant to say that one who does have knowledge of the stars, should use his knowledge to bring honor to Hashem's Name. Many have pointed out that neither the Rambam nor the Shulchan Aruch make any mention of a mitzvah to engage in astrology or astronomy.

In conclusion, we cite the Shvus Yaakov (Teshuvos III, 20) who opposes these studies in our era. Since we have no authentic Torah tradition for these subjects, any study must necessarily be based on the questionable traditions of secular scholars. Therefore, one should only pursue these studies in as much as is necessary to calculate the calendar.

## DAILY MASHAL

### CHILAZON

The *Gemora* cites a *braisa*: He who captures a *chilazon* (a kind of fish whose blood was used for dyeing the curtains of the *Mishkan*) and squeezes it (with his hands, in order to remove its blood) is liable to one *chatas* (for trapping, but not for squeezing).

The *Gemora* asks: But let him be liable as well on the score of taking a life?

Rabbi Yochanan said: It is referring to a case where he squeezed it when it was already dead.

Rava said: You may even explain it that he squeezed it while it was alive (and the reason he is not liable for "taking a life" is because) in respect to the taking of life he was preoccupied (for that was not his intention).

The *Gemora* asks: But Abaye and Rava both said that Rabbi Shimon (who, generally, exempts one from liability if he did not intend for that action) admits in a case of an inevitable consequence!?! [Literally defined as 'if the chicken's head is cut off, is it not certain that it will die? Rabbi Shimon holds that a labor performed unintentionally in the course of doing something that is permitted is itself permitted, unless it follows inevitably as a result of his action. Here as well, it must inevitably die when squeezed.]

The *Gemora* answers: Here it is different, because he is more pleased that it should be alive, so that the dye should be clearer. [Therefore, its death is more than unintentional, but actually contrary to his desire. R' Shimon does not agree in such a case.]

Dr. Mendel Singer published a fascinating article regarding the identification of the chilazon. Here are several excerpts that pertain to our Gemora. Rav Shlomo Miller was asked whether the *murex trunculus* might be considered the chilazon for the purposes of *techeilis*.

1. The Gemara discusses the case of someone who extracts the dye from the chilazon on Shabbat. The verb used by the Gemara in describing the action of the person extracting the dye is *potzea*. *Potzea* is usually understood to mean to crush or crack open. This would imply that the chilazon has a hard shell, though this could be an external or an internal shell. Rashi says that the person squeezes (*docheik*) the chilazon in his hand to get out the blood (dye secretion). From Rashi's comment we can only infer that squeezing the chilazon can make the dye come out. Rashi's use of the word "squeeze" is difficult to understand since it seems to imply a soft substance, not a hard shell. This difficulty in understanding Rashi might be resolved if the chilazon, while being held in the hand, has a shell on one side, and flesh on the other. Thus, the person squeezes the fleshy side of the chilazon, and in the process may crack open, or crush, the hard shell on the other side. *Murex trunculus* has a hard, external shell that is cracked in order to get the dye out. The shell almost completely encloses the body. This would be consistent with the usual understanding of *potzea*, but not with Rashi's *docheik*.
2. Dye is better while chilazon is alive: We learn in the Gemara that people try not to kill the chilazon when extracting the dye because the dye is better if extracted while the chilazon is alive. From this Gemara we learn that there is a significant difference in the dye when extracted while the chilazon is alive and when it is extracted just moments after its death. Petil followers argue that the *murex* secretion (*mucus*) loses its dyeing power a few hours after the snail's death. This doesn't help since the Gemara is speaking not of a few hours, but mere moments after death. Another problem is Pliny's statement that the

murex discharges its dye upon death. If so, the reason not to kill the murex when removing the gland containing the dye is because otherwise the precious few drops of dye will be lost!

3. [Dr. Sterman's response:] Tekhelet comes from a live chilazon. This is one of the more powerful proofs supporting the murex as the chilazon. The enzyme required for dye formation quickly decomposes upon the death of the snail, and so the glands that hold the dye precursor must be crushed while the snail is alive or soon after. In experiments, we have seen that as soon as two hours after death, the quality of the dye is severely degraded. Dr. Singer's assertion that "the Gemara is speaking not of a few hours, but mere moments after death" is totally arbitrary. That assertion is even more implausible considering that this property is mentioned by both Pliny and Aristotle specifically regarding the murex. Since the murex loses its dye quality a few hours after its death, and those scholars express that fact by saying that the dye must be obtained from live snails, it follows that the Gemara's use of the same terminology would certainly sustain a two hour post mortem limit.
4. The dye from the chilazon is more potent when taken from a freshly killed chilazon – but one must kill the animal in order to extract the dye. The Gemara bases one of the fundamental principles of hilchot shabbat on this fact, namely p'sik reisha d'lo nicha lei- an inevitable act [lit. cutting off a head] that is undesirable. As mentioned previously, the enzymes responsible for transforming the precursor of the dye into actual dye upon exposure to oxygen, do not survive long after the death of the snail. Consequently, within a few hours after death, the murex can no longer be used for dyeing.
5. [Dr. Singer's reply:] Dye is superior if extracted from a live chilazon The Gemara speaks explicitly about the case where a live chilazon is squeezed or crushed to get the dye out, and the person tries not to kill the chilazon in the process because the dye is better, or clearer, if taken while the chilazon is still alive.<sup>117</sup> How long does it take to extract the dye from the

chilazon? Seconds? Minutes? Yet, if the chilazon dies during this short process, the dye will not be as effective. Dr. Sterman's argument that murex dye loses its power over several hours hardly satisfies this condition. This time frame ignores the fact that the Gemara speaks of the chilazon dying during the extraction process, a matter of minutes, not hours. Even more troubling is Dr. Sterman's misrepresentation of Pliny and Aristotle. In my article I correctly state, as Rabbi Herzog also does, that Pliny and Aristotle warn that the dye should be extracted from the murex while it is alive because it discharges its dye when it dies. <sup>118</sup> Dr. Sterman cites the first half of their statements, but then ignores the reason they explicitly state and instead supplies his own reason. In fact, these classical sources do not say anything about the dyeing power of the murex diminishing after death, their reason being at odds with the Gemara's explanation regarding the chilazon.

6. Tosafot (Shabbat 75a) suggest that the reason a person is not chayiv for trapping a chilazon on Shabbat is because when it is caught it jumps about, thereby hastening its death. As Rabbi Mordechai Kornfeld, Rosh Kollel of Kollel Iyun HaDaf, points out, a snail does not fit this criterion of Tosafot.
7. [Rabbi Yechiel Perr] On page 11, Dr. Singer writes about the small amount of dye produced by a single murex snail, only 4 or 5 drops. It should be pointed out that the discussion about the culpability for disha in Shabbat 75a is thus completely without basis, since the minimal volume required for culpability is that of a grogrit, a dried fig. And clearly, the Gemara is discussing extracting the mucus of a single chilazon.