DAF Notes
Insights into the Daily Daf
Produced by Rabbi Avrohom Adler, Kollel Boker Beachwood

Daf Notes is currently being dedicated to the neshamot of

Moshe Raphael ben Yehoshua (Morris Stadtmauer) o"h

Tzvi Gershon ben Yoel (Harvey Felsen) o"h

May the studying of the Daf Notes be a zechus for their neshamot and may their souls find peace in Gan Eden and be bound up in the Bond of life

A *korah* (*crossbar*) must be wide enough to hold an *ariach*, a half-brick.

Mishnah: A *korah* must be wide enough to hold an *ariach*, a half a brick. A half-brick is half of a three-*tefach* brick. The *korah* therefore has to be a *tefach* wide that would hold a half-brick by its width. [This means that the half-brick is three *tefachim* by one and a half *tefachim*, and will be placed on the *korah* and the brick will extend over both sides of the *korah* a quarter-*tefach* on each side. The brick does not actually have to be placed on the *korah*, just that the *korah* appears to be affixed that it can hold the brick if the brick were placed on top of it.]

There is a dispute regarding how strong the *korah* has to be.

The *Tanna Kamma* maintains that a *korah* must be wide enough and strong enough to hold a brick. Alternatively, the *korah* must be strong enough to hold a row of half-bricks placed across the length of the *korah*. Rabbi Yehudah, however, maintains that even if the *korah* is not strong enough to hold a half-brick, the *korah* is still valid. Rabbi Yehudah therefore continues according to his reasoning and states that a *korah* made of straw or reeds, which is certainly not strong enough to hold a half-brick, should be viewed as if it were made from metal, which is strong enough to hold a half-brick, and the *korah* is valid.

If the *korah* was bent, we view the *korah* as if it was straight. If it was round, we view it as if it was square. Whatver round object has a circumference of three *tefachim*, then the width of the object is a *tefach*. (13b)

GEMARA: One tefach! Is not a tefach and a half required? — Since it is wide enough to hold [an ariach of the size of] one tefach one may provide a foundation for the remaining half of the tefach by plastering [the beam] with clay, a little on one side and a little on the other, so [that the ariach can be] kept in position. (14a)

There is a dispute regarding how strong the supports of the *korah* need to be.

Rabbah bar Rav Huna maintains that the *Tanna Kamma* only states that the *korah* itself must be strong enough to hold a half-brick, but if the *korah* rests on pegs and not on the walls themselves, those pegs which serve as supports for the *korah* need not be strong enough to hold the *korah* and a half-brick. [Rabbah bar Rav Huna reasons that the *korah* itself serves as a reminder to people not to carry in a public domain, but the supports of the *korah* are used to keep the *korah* in place, and therefore the supports only have to be able to support the *korah* and not the half-brick.] Rav Chisda, however, maintains that the supports of the *korah* also must be able to support the *korah* and the half-brick. (14a)

One who places a mat over a *korah* has nullified the *korah* and the partition.

Rav Sheishes said: If one places a *korah* over the entranceway of a *mavoi* and spreads a mat over the *korah*, but the mat is elevated more than three *tefachim* from the ground, we do not have a *korah* or a partition. We do not have a *korah*, because a *korah* serves as a reminder, and now a mat covers the *korah*. We do not have a partition either, because when a partition is elevated three *tefachim* off the ground, the goats can pass through and this is not considered a partition. By placing the mat over the *korah*, he has invalidated the *korah* and one can no longer carry inside the *mavoi*. (14a)

There is a dispute regarding how much of a gap is allowed for a *korah* that does not extend completely to the opposite wall, and for two *korahs* that do not touch each other.

The Gemara cites a Baraisa: A *korah* that extends from one wall of the *mavoi* across the entranceway but does not reach the other wall, or if there are two *korahs*, where each *korah* extends from a wall but the two *korahs* do not meet each other, then the rule is as follows: If the gap between the *korah* and the wall, or the gap between the two *korahs* is less than three *tefachim* wide, then we apply the rule of *lavud*, that a gap within three *tefachim* is as if the object is connected to what is next to it. If the gap is three or more *tefachim*, however, then one must bring another *korah*, because the existing *korah* is invalid because of the gap. Rabban Shimon ben Gamliel, however, maintains that if the gap is less than four *tefachim* wide, there is no need for another *korah*.[1] If the gap is four or more *tefachim*, however, then according to Rabban Shimon ben Gamliel one would have to add another *korah* (because the existing *korah* is invalid).

There is a dispute regarding two *korahs* over an entranceway when neither *korah* can hold a half-brick.

The Baraisa continues: If one used two *korahs* over the entranceway of a *mavoi*, and neither *korah* is wide enough to hold a half-brick, if combined together they can hold a half-brick, we do not require that he brings another *korah*, because the two *korahs* are valid. If by combining the *korahs* together they are still not a full *tefach* wide, then one must bring another *korah* to validate the *mavoi*. Rabban Shimon ben Gamliel maintains that if the two *korahs* are placed together so that it holds a half-brick lengthwise, measuring three *tefachim*, one does not need to bring another *korah*. If the positioning of the two *korahs* does not allow for the support of the weight of the half-brick placed lengthwise, then another *korah* is required to adjust the *mavoi*.

Rabbi Yosi the son of Rav Yehudah holds like his father in one matter but disagrees with his father in another matter.

The Baraisa continues: Rabbi Yosi the son of Rabbi Yehudah maintains that if one *korah* is placed higher than the other *korah*, we view the upper *korah* as being lower and the lower *korah* is viewed as being above (i.e. they are both viewed as if they were on the same plane. If on the same plane they would function together as a valid *korah*, then they are also considered one *korah* in their existing state). This is conditional on the upper *korah* not being higher than twenty *amos* and the lower *korah* cannot be lower than ten *tefachim* (as these are the required maximum and minimum heights of a *korah*).

Abaye said that Rabbi Yosi the son of Rabbi Yehudah agrees with his father regarding one matter but disagrees with his father in a different matter. Rabbi Yehudah in our *Mishna* maintained that we view a *korah* of straw to be as strong as a *korah* made of metal, and similarly, Rabbi Yosi his son rules that we view the two uneven *korahs* as being even. They disagree with regard to the height of a *korah*, as Rabbi Yehudah holds that a *korah* higher than twenty *amos* is valid, and Rabbi Yosi maintains that a *korah* is only valid if the *korah* is within twenty *amos*, but if it is higher than twenty *amos*, it is invalid. (14a)

Rabbi Yehuda said that even if the *korah* is wide enough, but not strong enough to hold a half-brick, the *korah* is still valid. Rav Yehudah taught Chiya bar Rav in the presence of Rav, 'Wide, although it is not strong', when the latter said to him: Teach him, 'Wide and strong enough'. Didn't, however, Rabbi Ila'i state in the name of Rav, '[a cross-beam that is] four [tefachim] wide [is valid] although it is not strong,'? — One that is four [tefachim] wide is different [from one that is less than the prescribed width]. (14a)

If it was made of straw etc. What does he thereby teach us? That we adopt the principle of 'is looked upon'? But, then, isn't this exactly the same [principle as was already enunciated]? — It might have been assumed that [the principle] is applied only to one of its own kind[2] but not to one of a different kind;[3] hence we were taught [that any material is valid]. (14a)

[If it was] curved it is looked upon as though it were straight. Isn't this obvious?[4] — He taught us [thereby a ruling] like that of Rabbi Zeira, for Rabbi Zeira stated: If it was within a mavoi and its curve without the mavoi, or if it was below twenty amos and

[1] Because Rabban Shimon ben Gamliel maintains that that the rule of *lavud* applies as long as the gap is less than four *tefachim.*

[2] Sc. a frail beam of wood may be regarded as a strong beam of the same material, since weak as well as strong beams can be made of it.

[3] As straw, for instance, is a material from which no strong beam can ever be made, it might have been deemed to be totally unfit.

[4] Since it involves the same principle as that of the previous ruling. Why then the unnecessary repetition?

its curve above twenty, or if it was above ten amos but its curve was below ten, attention must be paid [to this]: Whenever no [gap of] three tefachim would have remained if its curve had been removed, it is not necessary to provide another korah; otherwise, another korah must be provided. Isn't this also obvious? — It was necessary [to enunciate the ruling in the case where the beam] was within the mavoi and its curve was without the mavoi. As it might have been presumed that the possibility must be taken into consideration that the residents might be guided by it; hence we were informed [that no such possibility need be considered]. (14a)

The ratio of the circumference of a circle to its diameter is three to one.

The *Mishna* stated that if the *korah* was round, we view the *korah* as if it was square. Why do we need this case at all? - We only need this statement as an introduction to the last statement of the *Mishna* that states that if a round object has a circumference of three *tefachim*, then the width of the object is a *tefach*. From where is this known? – Rabbi Yochanan said: We derive this ratio from the verse where it is said: *and King Shlomo made the pool of cast metal¸ ten amos from rim to rim*, *circular all around*, *and five amos was its height*, *and a line of thirty amos would encircle it all around*. [We see from this verse that the diameter of a thirty-*amah* circle is ten *amos*, and this is a ratio of three to one.] The Gemara asks: But there was a little thickness to the rim of the pool? Rav Pappa replied: Of its brim, it is written in Scripture [that it was as thin as] the flower of a lily; for it is written: And it was a tefach thick, and its brim was like the brim of a cup, like the flower of a lily; it held two thousand baths. But there was [still] a fraction at least? — When [the measurement of the circumference] was computed it was that of the inner circumference.[5] (14a)

Rabbi Chiya taught (the following Baraisa): The pool that Solomon made contained one hundred and fifty ritual baths (mikvaos). But consider: How much is [the volume of] a mikvah? Forty se'ah, as it was taught: And he shall bathe . . . in water implies, in water that is gathered together; All his flesh implies, water in which all his body can be immersed; and how much is this? [A volume of water of the size of] an amah by an amah by a height of three amos; and the Sages have accordingly estimated that the waters of a mikvah must measure forty se'ah. Now how many [amos] were there [in the molten sea]? Five hundred [cubic] amos.[6] From three hundred [cubic amos are obtained] a hundred [mikvaos],[7] and from a hundred and fifty [cubic amos] fifty [mikvaos are obtained]. [Wouldn't then a volume] of four hundred and fifty [cubic amos] be enough?[8] — These calculations [apply only] to a square [shaped tank], while the pool that Solomon made was round. But consider: By how much does [the area of] a square exceed that of a circle? By a quarter.[9] Then of the four hundred [cubic amos previously assumed] one hundred [must be deducted], and of the hundred [cubic amos] twenty-five [must be deducted]. [Wouldn't then[10] the number of mikvaos] be only a hundred and twenty-five? — Rami bar Yechezkel learned that the pool that Solomon made was square in its lower three amos and round in its upper three.[11] Granted that you cannot assume the reverse,[12] since it is written in Scripture that its brim was round, [can you not] say, however, [that only] one [amah of the height of the brim was round]?[13] — This cannot be entertained at all, for it is written, it held two thousand bas; now how much is a bas? Three se'ah,; for it is written in Scripture: The tenth of the bas out of the kor

[5] Scripture only calculates the circumference of the pool from within and does not calculate the circumference from the outside, so the ratio is precisely three to one.

[6] The calculation at the moment is based, for the sake of argument, on the imaginary assumption that the round pool like a square tank contained 10 X 10 X 5 = 500 cubic amos.

[7] Since each bath, as stated supra, contains 1 X 1 X 3 = 3 cubic amos.

[8] To make up a hundred and fifty mikvaos. An objection against Rabbi Chiya's statement.

[9] Since a diameter of one unit has a circumference of three units approx., and a square of one such unit has a perimeter of four such units.

[10] Since 400 — 100 = 300, and 100 — 25 = 75, the number of cubic amos in the pool of Solomon was only 375. As each three cubic amos produced one ritual bath, the pool could have contained no more than 375/3 = 125 mikvaos. An objection again against Rabbi Chiya.

[11] The lower section contained 3 X 10 X 10 = 300 cubic amos. The upper section, being circular and by one quarter less than a square, contained 2 X 10 X 10 — 50 = 150. The two sections together consequently contained (300 + 150)/3 = 350 mikvaos.

[12] That the upper section of the pool was square shaped and its lower one round.

[13] And the pool consequently contained more than a hundred and fifty mikvaos. On what ground then could Rabbi Chiya maintain that it contained only a hundred and fifty mikvaos?

[which is ten bas],[14] so that the pool contained six thousand measures.[15] But Surely is it not written: It held three thousand bas'? — This [includes the addition] of the heap [in a dry measure].[16]

Said Abaye: From this it may be inferred that the heap [of a measure][17] is one third [of the entire quantity].[18] And so have we also learnt: A large box or chest, a cupboard, a large straw or reed basket, and the tank of an Alexandrian ship, although they have flat bottoms and are capable of holding forty se'ah of liquid, which are [equal to] two kor of dry [commodities],[19] are tahor.[20] (14a – 14b)

There is a dispute regarding how wide a *lechi* must be.

The *Mishna* states that a *lechi* must be ten *tefachim* high and the width and thickness has no required measurement. Rabbi Yosi, however, maintains that the width of the *lechi* must be at least three *tefachim*. The *Gemora* explains that according to the *Tanna Kamma*, the width and thickness of the *lechi* can be as thin as the string of a garment, as long as there is some substance to the *lechi*. (14b)

GEMARA: The lechis of which they spoke etc. May it then be asserted that we have here learnt an anonymous Mishnah in agreement with Rabbi Eliezer who ruled that two lechis are required?[21] — No; the expression of lechis [refers to] lechis in general.[22] If so, should it not have been taught, in the case of the korah also, 'koros', the plural referring to koros generally? — It is really this that was meant: The lechis concerning which Rabbi Eliezer and the Sages are in dispute[23] [must be no less than] ten tefachim in height, but their width and thickness may be of any size whatsoever.[24] And how much [was meant by] 'any size whatsoever'? — Rabbi Chiya taught: Even [if only] as that of the thread of a cloak. (14b)

A Tanna taught: If a man put up a lechi for a half of a mavoi[25] he may only use [the inner] half of the mavoi. Isn't this obvious? — Rather read: He may use a half of the mavoi.[26] Isn't this, however, also obvious? — It might have been presumed that the possibility should be considered that one might proceed to use all of it; hence we were informed [that the inner half may be used]. (14b)

Rava stated: If one constructed a lechi for a mavoi and raised it three tefachim from the ground, or removed it three tefachim from the wall, his act is invalid. Even Rabban Shimon ben Gamliel, who holds [that in the case of gaps] we apply the rule of lavud, maintains his view [only where the gap occurred] above,[27] but [where it was] below, since [the post] constitutes a partition through which kids can push their way, he did not uphold that view. (14b)

Rabbi Yosi ruled: their width [must be no less than] three tefachim. Rav Yosef stated in the name of Rav Yehudah who had it from Shmuel: The halachah is not in agreement with Rabbi Yosi

[14] A kor which is ten bas also equals thirty se'ah. Ten bas' consequently equal thirty se'ah and one bas equals three se'ah.

[15] A measure = one se'ah. Since one bas = three se'ah, two thousand bas' = 3 X 2000 = 6000 se'ah = 6000/40 = 150 mikvaos. Hence Rabbi Chiya's figure.

[16] While liquids can only reach the level of the top of the measure, dry commodities can be raised to a certain height above that level. The difference between the dry and liquid commodities that the pool could contain, explains the difference between the figures in Divrei Hayamim, and Melachim respectively.

[17] Sc. the quantity above its level, if the ratio of its height to its length and width is the same as that of Solomon's pool.

[18] One thousand being a third of three thousand.

[19] Two kor = 60 se'ah. The difference between the dry and the liquid is thus 60 — 40 = 20 se'ah, and twenty is one third of sixty. This Mishnah thus supports Abaye's calculation.

[20] Sc. are not susceptible to tumah. Only vessels that are moved about both empty and full are so susceptible. Those mentioned here are large and not easily moved; hence they are not subject to the same susceptibility.

[21] Is it likely, however, that an anonymous Mishnah, which as a rule represents the halachah, would agree with an individual opinion contrary to that of the majority?

[22] Each individual mavoi, however, may require no more than one lechi.

[23] The former requiring two and the latter one.

[24] The use of the plural is consequently no proof that the halachah is in agreement with the ruling of Rabbi Eliezer.

[25] I.e., instead of fixing the lechi at a point facing the entrance, he put it up within the mavoi at a point facing the middle of it.

[26] While it is obvious that the outer half could not be used, it is not so obvious that the inner part may be used. Hence the necessity for the Baraisa cited.

[27] As, for instance, when a korah projecting from one wall does not reach the wall opposite.

either in respect of 'brine'[28] or in that of 'lechis'. Said Rav Huna bar Chinena to him: You told us this concerning 'brine' but not concerning 'lechis'. Now wherein does brine differ? Obviously because the Rabbis disagree with him; but do not they disagree with him in respect of lechis also? — 'Lechis', the other replied: 'are in a different category because Rebbe has taken up the same point of view.' Rav Rechumei taught thus: Rav Yehudah son of Rav Shmuel bar Shilas stated in the name of Rav: The halachah does not agree with Rabbi Yosi either in respect of 'brine' or in that of 'lechis'. 'Did you say it?' they asked him. 'No', he replied. 'By God!' Rava exclaimed, 'he did say it, and I learned it from him,' — Why then did he change his view? — Because Rabbi Yosi has always good reasons for his rulings. Said Rava son of Rav Chanan to Abaye, 'What is the law?' — 'Go', the other told him, 'and see what is the usage of the people'.[29]

There are some who teach this in connection with the following: A man who drinks water on account of his thirst must say [the blessing], 'by whose word all things exist'. Rabbi Tarfon ruled [that the following blessing must be said], 'who creates many living beings with their wants, for all the means that You have created'. Said Rav Chanan to Abaye, 'What is the law?' — 'Go', the other told him, 'and see what is the usage of the people'. (14b)

INSIGHTS TO THE DAF

"Pi"

Our *Gemora* asks: How do we know the rule of the *Mishna* that if a circle is three *tefachim* around (*circumference*) that it is one *tefach* wide. The *Gemora* answers that the verse measures the circular pools built by King Solomon. It says that the diameter of the circular pool was ten *amos*, and that the circumference of the circle was thirty *amos*.

The question on our *Gemora* is obvious. First of all, why do we require a verse for this? It is a mathematical equation! Secondly, didn't the *Gemora* realize that Pi is 3.14, not three? Saying that it is three is incorrect!

The following explanation is given: The *Gemora* knows full well that Pi is 3.14, as it is something every school child knows and is clearly measured. However, the *Mishna* clearly said to use 3, not 3.14, as the *halachic* way to measure circumference. The *Gemora's* question therefore is, what is the source of the *Mishna* that one can use three for *halachic* reasons, such as permitting a *korah* that is three *tefachim* around because it is considered to have a *tefach* of space across? One should think that the *korah* must be at least 3.14 *tefachim*! Additionally, one cannot say the *Mishna* was not being accurate, as the *Gemora* states in many places that the *Mishna* will never estimate in a way where the amount is too little to satisfy the *halachic* requirements (i.e. see Sukkah 8a).

This is why the *Gemora* answers that we see that the verse states Pi as equaling three. Why would the verse give these measurements if they are not accurate and do not have to be stated? It must be to teach us that we can use 3 for Pi, even when it involves a leniency.

Geometry in the Beis HaMikdash

The Greek letter "Pi" represents the number 3.14, which is used to calculate the circumference of a circle. One of the most basic principles in geometry is that the diameter of a circle multiplied by Pi equals the circumference.

In truth, this number is not exact. Pi is an irrational number, which cannot be expressed correctly by any number of decimals. Rounded to twenty places, Pi is 3.14159265358979323 84, but this too is an imprecise simplification. Our Sages simplified the number even more. When calculating the circumference of a *korah,* they sufficed with the number three. Thus, in order to determine whether a *korah* has the minimum of one *tefach* diameter, one must ascertain if its circumference is at least three *tefachim*.

Shlomo's Sea: The *Gemora* derives this calculation from the verses discussing the construction of the Beis HaMikdash. Shlomo HaMelech built a gigantic *mikvah*, which the verse refers to as "*Yam shel Shlomo* - Shlomo's Sea." According to the verses, the *mikvah* was thirty *amos* in circumference and ten *amos* in diameter (Melachim I 7:23).

[28] Preparing a small amount of pickling brine on the Shabbos.

[29] They use lechis of any size whatsoever.

The Rishonim pose two questions against this inference. Firstly, why is it necessary to derive mathematical principles from the Torah? Empirical evidence clearly demonstrates this principle to be true. Secondly, the rounded number of three is not strictly accurate (Tosefos s.v. *V'ha'ika*).

The Tashbatz (I: 165) wrote a lengthy responsa to resolve these questions. In conclusion, he writes that our Sages were well aware that their calculation was imprecise. Nevertheless, they used the measurement of three-to-one in order to teach us that this is close enough, and the Torah does not expect us to be more exact with our measurements of circumference. As we will see, the question still remains whether we may rely on this imprecision to the side of leniency, or only to the side of stringency.

The Tosefos Ha'Rosh adds that in order to prove that exact precision is unnecessary, our Sages cited the verse in regard to the *Yam shel Shlomo*, in which the Torah itself provides intentionally imprecise measures. From here it would seem that this imprecise calculation may be relied on even when the inaccuracy errs in the direction of leniency.

The Rambam, in his commentary to the *Mishna*, writes simply that the precise number of Pi can never be calculated to the last decimal place. Since the number must be rounded off at some point, our Sages sufficed in rounding it off at three. It is unclear from here whether the Rambam intended merely to explain why the Sages used this imprecise number, but in practice we must use the most accurate measurement of Pi. Or perhaps the Rambam meant that just as the Sages rounded down to three, we may also conduct our calculations using the number three instead of Pi, even if this produces inaccurate leniencies.

The Tashbatz (ibid.) rules that in practice we must use the accurate measure of Pi. However, the Aruch HaShulchan (Y.D. 30:13. O.C. 363:23) rules that we may rely on our Sages' measurement of three, even when this calculation produces leniencies. The Mishnah Berurah (Shaar HaTzion 372, s.k. 18) also rules that in regard to mitzvos of Rabbinic origin, we may be lenient and calculate with three. (See Meoros Daf HaYomi journal 266, on Bechoros 17b, in regard to how precise one must be in making tefillin with perfect corners).

Hexagons: The Eretz Chaim cites a most novel solution to this problem in the name of his father, R' Menashe Mathuv Stalon; who came to *Eretz Yisrael* from Syria, approximately one hundred and forty years ago, and served as Av Beis Din in the holy city of Tzefas.

He writes that in the time of the *Gemora*, people generally did not build perfect circles. It was easier for them to multi-sided objects such as hexagons. The circumference of a hexagon is exactly three times its diameter. He therefore suggests that the *korah* in question in our *sugya*, and the *mikvah* made by Shlomo HaMelech were not actually circles, but rather hexagons. This explanation neatly resolves all the questions cited above. However, from the fact that the Rishonim posed these questions and endeavored to answer them, we see that they understood the *Gemora* as discussing perfect circles.

DAILY MASHAL

Ariach and Levainah

The *Mishna* states that the *korah* has to be wide enough to support an *ariach*, a half-brick. We find that the term *ariach* is used in other instances, i.e. by the *Shiras Hayam*, the Song sung by the Jewish People at the Red Sea. There the *Gemora* mentions that the *Shirah* is written *ariach al gabei levainah*, a half-brick on top of a full brick, which means that one line of the Song is written like a half-brick, and the line beneath it is a full brick. We can interpret the terms *ariach* and *levainah* homiletically. A half-brick symbolizes that one's hearts should be contrite and broken, and by demonstrating sincere remorse for one's transgressions, Hashem will grant him atonement, as the word *levainah* connotes atonement. The word *lavan*, which is closely associated to the word *levainah*, means white, and white reflects atonement.