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בס"ד

Regarding the Date to Begin Reciting *Tal Umatar*

I. Introduction

In the second blessing of the musaf prayer of Shemini Asseret, a blessing that constitutes recitation of various manifestations of the Deity's might, we begin adding, "*mashib haru'ah umorid hageshem*," "Who drives the wind and brings down the rain." This is merely a *mention* of rain in our prayers, not a formal request. This mention continues until the first day of Pesah. As Shemini Asseret (Tishri 22) falls about the time when rain is required in Israel, the rabbis established it as the appropriate occasion to begin reciting Hashem's praise concerning this detail of His power. It is important to recognize that this is not a *request* for rain but rather a *praise* of Hashem.

Recital of the request prayer for rain, "*veten tal umatar librakha*," "and grant dew and rain for blessing," is incorporated in the ninth berakha of the weekday amida, *Barekh Alenu*, and was deferred for two weeks until Heshvan 7. The rabbis deemed it appropriate to allow those who came to Jerusalem for the Succot festival from distant locations to return home before everybody began requesting rain, which, were it to fall, would be an inconvenience for travelers. This is in Israel. Although the reasons do not apply today, the taqana to begin this prayer at that time remains.

The Diaspora, which in Talmudic times was primarily Babylonia and nearby lands, did not require rain as early as did Israel. So the taqana differentiated and established that in the Diaspora - though they should begin the praise of Hashem concerning rain on Shemini Asseret - the request for rain should begin sixty days after the "Tequfa" (the autumn equinox). Many posqim, followed by Shulhan Arukh, apply the sixty-day regulation even to distant lands. Although the Diaspora in Talmudic times spread over a relatively limited area and not all the many variations as to when rain was required in the much expanded Diaspora could be

subsumed in the category of 60 days after the equinox, that was all that was explicitly established for it in the early taqana. This has engendered many interesting issues through the centuries but that is not our topic here.¹

II. Calendar Problems

According to the Bet Yosef, in the Diaspora the equinox day itself is counted as Day One and Tal Umatar is to begin in orbit of the 60th day.

The autumn equinox, dependent on the solar cycle, occurs September 23rd in our civil calendars in use today except during leap years, when it occurs September 22nd. Were a precise calendar used for Tal Umatar purposes today, the 60th day from the equinox would be November 21st and during leap years, November 20th. However, for purposes of calculating the seasons when dealing with rabbinical law such as in our case, the convenient formula given by the third century Talmudic sage Shemuel was used, in contrast to calendrical calculations that directly affect Torah law which are based on the more precise formula of another third century Talmudic sage, Rab Adda (whose calculations were also in discrepancy with the actual length of the year but much less so).

Shemuel stated that there are 91 days and 7 1/2 hours between season and season, each of which he thought to be equal to exactly one fourth of a year, which he thought to be comprised of 365 days and 6 hours. (This very possibly had originally only been intended as a rule-of-thumb guideline.) Rab Adda's solar year comprised 365 days 5 hours 55 minutes and 25 seconds. The actual value of the length of a year, determined centuries later, is 365 days, 5 hours, 48 minutes and 46 seconds. The annual discrepancy between the longer solar year of Shemuel and the precise astronomical year is 11 minutes 14 seconds. The accumulated difference

since Shemuel's time in the mid-third century - let us say the year 250 of the common era - until the year 2000 totals a bit more than 13 1/2 extra daysⁱⁱ.

$$11.23 \text{ min} \times 1750 \text{ yrs} = 19653 \text{ min} / 1440 \text{ min per day} = 13.6 \text{ days}$$

In accordance with Shemuel, that means to say, incorporating this discrepancy, at the start of the 21st Century (as was also the case in the 20th Century) the traditional practice was to begin reciting Tal Umatar December 4th at night (or December 5th according to some opinions, as we shall soon explain) except for once every four years when we begin one day later, for a reason that will soon become clear, a total of 13 or 14 days beyond the "60 days after the autumn equinox."

In Halakhic works written before the year 1582 of our civil calendar, whenever the author provided a Western civil calendar date for Tal Umatar, the date given is many days earlier than the civil calendar dates we use today. About 1555, the Bet Yosef Oraḥ Ḥayim 117 quoted Rabbi David Abudirham, from a work published in 1340, that for three out of each four years we begin reciting Tal Umatar November 22nd at night and each fourth year November 23rd. This variation resulted from the difference between the civil calendar - termed the Julian Calendar, established by Julius Caesar in 46 B.C.E. - that was in use prior to and during the Bet Yosef's time, who passed away in 1575, and the one in use today.

Until 1582, the Julian Calendar was in use throughout most of the Western World. It was based on a solar year of 365 days and 6 hours, identical with that of Shemuel. In this calendar, three out of every four years were comprised of 365 days and the fourth year (a leap year) was to have one extra day to compensate for the four quarter-days that had not been counted in the span of four years. It was then widely recognized that this calendar contained an error and was "lengthening" the year (which means more leap years were being added than appropriate) in comparison to the actual astronomical year, which by then had been measured very close to its actual value. The start of new years was being delayed by about one day every 128 years.

The Church in Rome acknowledged this discrepancy as a major problem. Its festival calendar - established in 325 - was dependent on the spring equinox and celebrations were falling out of alignment with reality.

As years were beginning later and later, the calculated day for the equinox was falling further and further beyond its actual occurrence. In 1582, the equinox was correctly observed as occurring on what is now called March 21st, but the calendar then read March 10th! A full ten-day discrepancy had set in from 325. Later that year, Pope Gregory XIII corrected for the previous 1257 years by changing the date of the day after October 4, 1582, calling it October 15th, thus compensating for the cumulative ten-day error.

Additionally, the pope provided a calendar refinement for the future. As the discrepancy was one day every 128 years, or three days every 384 years, the new Gregorian calendar eliminated three leap years every 400 years. Each fourth year was to remain a leap year as previously (year numbers divisible by four) except for century years not divisible by 400, which would be regular years. (Thus, the years 1700, 1800 and 1900 were not leap years, but 2000 was.) This calendar was still not perfect, but the discrepancy was merely one day every 3,300 years.

The ritual Jewish calendar of course did not adopt these reforms as halakha could not be modified by a decision of the outside world.

III. Civil Date of the Jewish Calendar

Back to the Bet Yosef. In 1555, before the Gregorian Calendar was established, civil calendar dates used by the Jewish community - which are merely convenience applications of the Hebrew ritual calendar - were ten days earlier than the civil dates given for 1582. Thus, the November 22nd date of R. Abudirham became December 2nd. In 1582 the Jewish community began Tal Umatar on that civil date, 10 days "later" on the civil calendar than usual, reflecting the ten days that had been skipped on that calendar. In subsequent years that new civil date held, for the Jewish calendar continued its calculations of 365 and ¼ days as usual.

1600 was a leap year in the Gregorian calendar so in the 17th Century no further adjustment to the civil date was necessary for beginning Tal Umatar, as leap years each four years take care of themselves in the halakha as we shall soon explain. However, 1700, 1800 and 1900 (not divisible by 400) were not leap years. They had to be accounted for in the Jewish calendar's transposing its dates to civil dates by permanently adding a

compensatory day for each of those century years. Hence, in each of those centuries the Jewish community began the recital of Tal Umatar one day later than the previous century. This yields December 5th (and Dec. 6th every fourth year) as the primary date for Tal Umatar in the 20th and 21st centuries according to Rabbi Abudirham and apparently also according to the Bet Yosef, who cites him authoritatively. This is one day later than the widely accepted 20th-21st Century practice of December 4/5 (which will hold until the year 2100 arrives, a year not scheduled to be a leap year). Some contemporary sources do consider the December 5/6 dates as authoritativeⁱⁱⁱ, but they are a minority.

There are different possibilities as to exactly how this one-day difference came about. Perhaps the Bet Yosef truly espoused November 22/23 in his days and would have advocated December 5/6 for the 20th-21st Century, and the present-day practice of the majority is not in accordance with him, unusual as that may be. Or perhaps he cited Rabbi Abudirham's dates without comment, assuming he transposed the dates correctly, as he was not very familiar with the non-Jewish civil calendar. The dates were close and looked right so he cited them, but had he carefully looked into them perhaps he would have disagreed by one day. The latter is a strong possibility as will now be shown.

In a passage not quoted by the Bet Yosef, Rabbi Abudirham specifically states, "the 60th day is considered as before 60." In other words, Tal Umatar is not recited until the day following the 60th day. This statement, found in present editions of his work and in the 1740 Amsterdam edition, is not in accordance with the latest decision recorded in the relevant Talmudic passage (BT Taanit 10a), which clearly states that the 60th day is considered as after 60. (Perhaps Rabbi Abudirham had a variant reading of that passage.) The Bet Yosef, in a separate paragraph, citing the Talmud, counts the 60th day as after 60, despite his citing without comment the civil date as given by Rabbi Abudirham.

In any event, following our Talmudic text, the majority practice has been to begin Tal Umatar one day prior to the civil date that derives from Rabbi Abudirham.^{iv}

IV. Leap Year Considerations

The considerations involved in beginning Tal Umatar one day later each fourth year (a year not identical with

the civil calendar's leap year), just for that year, and not having to begin Tal Umatar one day earlier during civil leap years, follow. In accordance with the tradition of Rabbi Yehoshuah^v, we consider Creation as having occurred in Nissan (the first month of the Torah calendar, March - April) and the first spring equinox as having occurred with the creation of the sun at the beginning of the fourth day. On the spring equinox, day and night are equal. As halakha days begin from the evening we consider the creation of the sun as having occurred in Year One on Tuesday evening 6 p.m. Counting twice 91 days 7 1/2 hours, in accordance with Shemuel's formula, to arrive at the autumn equinox (Tishri, the seventh month in the Torah calendar), brings us 182 days 15 hours later. The time of day of that Tishri equinox would be 9 a.m. Although we consider Creation occurring in Nissan, we count years from Tishri according to the tradition of Rabbi Eliezer. The 9 a.m. Tishri equinox, as far as the count of years is concerned, is in Year Two.

The six hours each solar year possesses beyond the 365 whole days now comes into play. This creates a six-hour yearly movement advancing the time of day when the new year arrives and sun and earth return to the identical relationship of the previous year. Thus, in Year Three the autumn equinox is considered as having occurred at 3 p.m., in Year Four at 9 p.m. and so on. Since every fourth year the equinox falls after nightfall, Tal Umatar is moved to the next day in the solar cycle. This may be viewed as a "Tal Umatar Leap Year," whereby one day is added to compensate for the four quarter-days of four years. It always occurs in Hebrew years whose number is divisible by four. We then continue counting according to Shemuel from that later date but as the civil calendar in use today has a leap year several months following our moving to the next day, we are set back one day and return to the earlier date for the next three years and no further problem is presented by the leap year. As the year 2100 will not be a leap year, the Jewish calendar - if no significant correction is made by a national Bet Din by then - will call for Tal Umatar one day later than the present practice.

V. On the Discrepancy

Regarding the discrepancy between our calculations and the true solar year: The Talmudic sages who established our calendar were undoubtedly aware that a discrepancy

of several minutes per year might exist. Just as previously the rabbis had corrected problems in their solar-lunar calibrations by direct observation, they unquestionably expected any significant discrepancy to be corrected by direct observation and improved calculations.^{vi} They surely were committed to halakha remaining harmonized with reality.

Of course the problems are much more far-reaching. For purposes of intercalating the lunar and solar cycles and establishing festival dates we use the less inaccurate calendar of Rab Adda, but nonetheless our halakha year is longer than the actual. Pesah is slowly drifting forward from the spring equinox month toward the second month of spring. For further details see our study *Basic Structure of the Jewish Calendar*. Hopefully a national Bet Din will one day soon make adjustments based on astronomical observation.

[Please Note: In 2005 and 2006, according to the majority view, Tal Umatar is scheduled to begin December 4th at night. The next Hebrew year divisible by 4 is 5768, so in 2007 Tal Umatar is scheduled to begin December 5th at night and in 2008 will return to December 4th.]

Endnotes

ⁱ. How communities in countries that have need for rain before sixty days pass from the equinox should conduct has been a topic of lively discussion and debate through the centuries. A number of leading authorities, most notably the Rosh (13th C.), tried but failed to align the practice with the reality.

ⁱⁱ. Although a thirteen day delay in reciting the classic prayer for rain is significant, particularly in regions where rain is desperately required earlier, and although it is uncomfortable to be out of harmony with reality to such a great degree, the prevailing opinion has been that without a national Bet Din such an halakhic adjustment cannot be made.

ⁱⁱⁱ. Encyclopedia Judaica vol. 5 p. 47; Rabbi Adin Steinsaltz's *Eeyunim* to BT Taanit 10.

^{iv}. If it transpires that the "before 60" text in R. Abudirham is a scribal error, it may be that he *began* counting the 60 days after the equinox, according to the simple translation of the Talmud "60 days *after* the

equinox," not counting the equinox day as Day One as the Bet Yosef does.

^v. BT Rosh Hashana 11a

^{vi}. In the Talmud (BT Shab. 75a) a sage expounds the Biblical statement "for it is your wisdom and insight in the eyes of the nations" (Deut. 4:6) as prescribing a misvah to have the knowledge of astronomy, to calculate seasons and constellations.

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