THE USUAL STEPS

When we sit down at the seder to fulfill the mitzva of eating matza, we lean to the left, make a beracha, and take a bite of the brittle matza. But rarely do we think about the complex steps that brought that piece of shemura matza to our table or the great halacha debates that have accompanied it. The traditions surrounding the process that takes the kernels of wheat and transforms them into unleavened bread for the mitzva are as old as the Exodus from Egypt, but some of the details of the process may be relatively new.

Initially, the hand-made matzos were soft and thick, resembling pita. The flour and water were quickly mixed and placed in a mud oven or on hot bricks, and the soft dough inflated due to moisture trapped within it. Until today, the Yemenite Jews bake their matza in an oven called a tabun, and they are soft. Many other Sefardic communities also eat soft, thick matzot. Due to the fresh, warm, and non-brittle nature of these matzot, they taste stale and unpleasant if they are not made daily. As a result, these communities traditionally bake their matzot as needed during the week of Pesach. This historic fact is recorded by the Aruch Hashulchan: “It is known that in the early times, they did not bake all of their matzos before Pesach, but rather they would bake on every one of the days of Pesach bread for that day”.

Matza continued to be manufactured like this for many years. By the time of Rabbi Moshe Isserlis, the Rama (1520-1572 CE), things were changing, and he ruled that “the matzot should be made like ‘reikin – crackers’ and not thick bread like regular bread, because the reikin do not quickly become chametz”3. The reasoning was that because even the slightest chametz is forbidden during Pesach, any activity that could cause chametz should be minimized. As a result, the Ashkenazi world adopted the tradition of thin, dry, hard matzot that are all baked before Pesach begins.

Chazal stated that the dough becomes chametz after 18 minutes, assuming that the temperature is not particularly hot, a factor that would speed up this reaction. How does one mix the flour and water, place the dough in the oven, and yet prevent it from rising? The answer is in the ubiquitous little holes punched in Ashkenazi matzos that allow the moist steam to leave the mixture without causing the dough to inflate.

THE FIRST OF ITS KIND

For most of Jewish history, all matza was hand-made, and for many that is the way they fulfill the mitzva today. For some people, howev-
er, the modern machine matzos are seen as a hiddur, the ideal way to fulfill the mitzva, because the automated process leaves little room for human error, and hence almost no chance of any chametz being made. In fact, some people actually will not eat hand matzos out of a concern that some chametz might have been introduced into the dough. The paradox of the change in status of that which was once the hiddur and now is seen by many as not, requires further attention.

This radical change in the traditional baking process was introduced as a consequence of the Industrial Revolution, and engendered a major halacha debate at the turn of the 57th century (mid-19th century CE). The change was introduced slowly. The first step in the genesis of machine matza was a machine made in 1838 that simply filled dough for matza. This machine, which indeed eased the production of matza, merely facilitated one of the steps in the process, and did not cause a great uproar. It was only when further automation was introduced that the halacha debate ensued.

Due to the social environment of the Industrial Revolution, which influenced businessmen to find quicker and more efficient ways to do things, further advances were inevitable. In addition, geographic and cultural norms due to the movement from the shtetl to large urban centers played a role, as well. Whereas previously, in every small town, families baked their own matzos in a communal oven, now, very large cities had to find a way to bake the massive amounts needed for all of the Jews who had migrated from the countryside.

The first major argument emerged in Cracow, Poland, in 5617 (1857). In that year, a number of businessmen wanted to import a matza-making machine to the city, but did not get rabbinic permission before Pesach. In the beginning of the following year, they sent representatives to Shleizia to observe the working machine, “and when they returned, they announced that the matter does not contradict the halacha.”

Rabbi Chaim Nathan Dembitzer (1820-1892), the head of the Beis Din of Cracow, and others were not so convinced, and sent a letter to Rabbi Shlomo Kluger (1783-1869), one of the major, senior poskim of the time and one of those who had given Rabbi Dembitzer semicha, to ask his opinion on the matter. Rabbi Shlomo Kluger, known as an illui (genius) as a child, and later as Rav of Brody for almost 50 years (from 1820), was a gadol hador, who had penned hundreds of teshuvos, and is said to have written many sefarim, of which 15 were published during his life and 15 posthumously.

Differences of Opinion

Rabbi Dembitzer described the details of the machine’s operation to Rabbi Kluger, who had never personally seen the apparatus. In his detailed report, he explained the operation:

“This is the manner in which the machine works: Immediately upon the completion of the kneading of the mix by the workers, the dough is placed in the machine and it makes the dough into thin matzos that are cut into...
squares, and can also... be made round.”

Utilizing this description, Rabbi Kluger decided that the use of the machine was prohibited. Later authorities followed his lead. The Avnei Nezer, writing nearly 40 years later (in 5655/1895), wrote:

“Although I have never seen the machine...since the great ones who preceded us have prohibited it and stormed against those who permitted it, for whatever reason it may be, they must have had correct cause for doing so. Who would breach the boundaries set by the earlier authorities who are like angels, and not fear being burned by the coals?”

Rabbi Kluger had a number of reasons for prohibiting the machine-made matzos. He argued that many poor people waited all year for the work that matza-baking provided for them. Using a machine “is as if they annul the mitzva of tzeddaka and maos chittim of Pesach.” Another very practical halacha concern was that bits of dough would get stuck in the machine and become chametz, and then become incorporated into the matzos being made. He was thus concerned about actual chametz. Finally, halachos of lishma (intent) and kochav gavra (human power) – both binding conditions in baking matzos-mitzva – were raised as issues against machine matzos.

At about the same time, Nissan 5618/1858, the same question was put to Rabbi Yosef Shaul Natanson (1808-1875), renowned Rav of Lvov (Lemberg), known as the “Shoeil U’meishiv,” and also considered one of the poskei hador. After scrupulous personal observation of a trial run of a matza-making machine in Lvov, his response, unlike Rabbi Shlomo Kluger’s, was that the machine is permissible.

An anonymous person sent the various letters for and against machine matzos to Hamaggid. Hamaggid, the first Hebrew newspaper, which had begun publication in 5616/1856, in Lyck, eastern Prussia, published them in its Pesach edition. The articles in Hamaggid elicited a host of angry letters from its subscribers. For example, a certain Rabbi Chaim Kara of Paradan wrote:

“It is clear that he [Rabbi Shlomo Kluger] is a fool and rough of spirit in his decision that is meaningless and minor, therefore it is correct to stretch him on the pole of scorn.”

As a result, Rabbi Dembitzer urged Rabbi Kluger to make his opinion widely known and to publish his response. Rabbi Kluger agreed and wrote:

“G-d forbid, I did not have intent to glorify myself with another’s downfall, but since he [Rabbi Natanson] printed [his letter] with full awareness... what motivated him to publish it, knowing it will cause the public to stumble? Thus we, too, are also obligated to print and publicize that not everyone agrees with him.”

FULL-FLEDGED MACHLOKES

The time was now ripe for a full-fledged machlokes. In 5619/1859, Rabbi Kluger published ten letters in a pamphlet called “Moda’a L’Beis...
Yisroel – An Announcement to the House of Israel,” which strongly condemned the use of machine matza. The name alone indicates his feeling that the halacha was clear and that the entire nation was obligated to refrain from using machine matzot. The pamphlet, as he writes, was a collection of “letters from geonim and great rabbis of the generation to forbid the matzot that are made by a machine for the Pesach holiday, so that the House of Israel should know to be careful and stand by their lives so as not to stumble, G-d forbid, with the prohibition of chametz on Pesach, and with the concern of a beracha levatala, and they should conduct themselves in the traditional manner as in years past.”

The letter writers against machine matza included some of the greatest poskim and talmidei chachamim of the generation – Rabbi Moshe Zev Itunga (author of Magen Giborim on Shulchan Aruch, often cited in Mishna Berura) and Rabbi Meir Auerbach (Kalisher Rav) – as well as notable Chassidic leaders from Poland and Galicia. Among them were such luminaries as the Sanzer Rav (Rabbi Chaim Halberstam, the Divrei Chaim, who declared machine matzot to be “chametz gamur – pure chametz”), 

Rabbi Yitzchak Meir from Gur (the Chiddushei Harim, living in Warsaw), and Rabbi Yehoshua Heschel Ashkenazi of Lublin. The opening teshuva was from none other than Rabbi Dembitzer himself.

Some of these opponents argued that all innovation is objectionable, and leads to reforms and the uprooting of halacha. Harsh words were used against the innovators. Rabbi Yitzchak Meir from Gur wrote:

“May Hashem save His nation from those people, messengers of the yeitzer hara, students of Yeravam ben Nevat, who seek to chip away from each mitzva a little at a time, and their intent is to eradicate it all….”

Even the matza’s shape – round vs. square – entered the debate. Much later, the Sdei Chemmed cited a clever retort by the Av Beis Din of Lvov in defense of square matzot. He suggests that just as the maximum thickness for something to remain non-chametz is learned from the lechem hapannim (Pesachim 37), so too should the shape be derived from the lechem hapannim, and they were square (Menachos 25).

IN DEFENSE OF THE MACHINE

Rabbi Natanson resolutely disagreed with the decision of Rabbi Kluger to forbid the usage of machine matzot. His collection of twenty letters, exactly double that of Rabbi Kluger’s, was published the same year and called “Bittul Moda’a – Annulment of the Proclamation.” The purpose was clear – to “annul the questioners of the action of the device, also called the machine, through which matzos for Pesach can be made, who proclaimed a proclamation in a pamphlet to prohibit the machine, so that the House of Israel should know that their words are not correct.”

Many of these letters were written by rabbis from central and western Europe. The writers included Rabbi Yisroel Lifschitz of Danzig (author of Tiferes Yisroel), Rabbi Avraham Binyamin Sofer of Pressburg (the K’sav Sofer), Rabbi Yaakov Ettlinger (the Aruch La’ner), and Rabbi Yitzchak Dov Bamberger of Wurtzberg.

Rabbi Natanson insisted on personally observing the machine run. His account of his first trial run with the machine is all the more poignant, since he described its failure due to the bitter cold and the lack of experienced hands. Having learned from their mistakes, however, their second try proved fruitful and “we found the machine in working order.” His explanation of the technical process is clearer than that given to Rabbi Kluger:

“The workings of the machine are as follows. The flour is kneaded in bowls by hand, as has been done from time immemorial. Afterwards, the dough is taken and placed under the wheel, and two strong men turn the metal wheel,
similar to rolling pins, which is made for this. The dough is thus rolled, as it is done in other places, with wooden rolling pins. Other than this, here the dough is prepared in one action, and it is a large amount. Therefore, a round knife was made, and with it, round matzos are made in the shape of our matzos, and the remainder of the pieces of dough is run through the machine again. After that, the matzos are passed to the hole makers, two or three people; from their hands, they go to the oven to bake. The entire procedure from the mixing to the oven does not take more than three minutes for zealous workers, and even if they are lazy it does not take more than five minutes, and all of this is with cleanliness and purity, and no dough remains stuck.”

Rabbi Natanson seemed frustrated by the claim that the machine introduced a dramatic change in the tradition of matza production. He also was upset that Rabbi Kluger had not seen fit to observe the halacha.

“Does he think that the machine works with magic, that one throws the dough there and it rolls on its own and creates a large dough?… Many strong people are needed to turn the wheel until a matza is made. Is this worse than rolling with wooden rolling pins? Is the wooden rolling pin smarter than the metal one [used in the machine]? Anybody who hears this will laugh at his dreams and words.”

Rabbi Simon Shvabcher in the *Bittul Moda’a* deals with the claim that dough sticks in the nooks and crannies of the machine, and writes:

“The machine is made of metal and is smooth without a crack or groove, and it can easily be cleaned after every time…there we find this is the ideal way to make matzos mitzva.”

One of the major criticisms of the machine matza was the fact that when making the traditional round matzos, the excess that was trimmed off was then reused and put through the machine again. The reused dough could be recycled several times and become chametz. The only recourse was either to forbid the use of the corners or to make square matzos and have no waste. That is how square machine matzos came to be.

Rabbi Natanson and his supporters deflected all of the arguments presented against the machine. For example, they pointed out that matza baking is not a charitable enterprise, but a means of preparing matza for Pesach. Some of them even noted the preferability of machine matza in that it is all done uniformly, rather than by teams of untrained helpers who cannot be adequately supervised.

**EVOLUTION OF THE DISPUTE**

It is worth noting that matza machines have continued to evolve and improve. Unlike the above description, today the kneading is done by machine, and there is no need for two strong men because the rolling is also automated. There are also almost no fac-
tories today that make round matzos, and those that do, do not reuse the extra pieces. In light of the significant improvements in the technology of machine baking and its wide halacha acceptance today, Rabbi Kluger’s arguments may seem less cogent. In his time, however, they were very applicable. Issues of dough sticking to the equipment and causing chametz to fall into later batches were a very serious concern. Moreover, the Divrei Chaim’s unequivocal p’sak is still honored by Chassidim to this day.

As for Rabbi Natanson’s dismissal of the contention that the baking provided charity to the poor, for Rabbi Kluger that was a real halacha consideration.

Another problem that occurred as the entire process became automated was the fact that as the slowly moving rack carrying the dough approached the oven entrance, it was exposed to increased warmth before entering the oven’s hot baking environment. That warmth, as noted above, could have initiated a chametz process before the dough was baked. That problem was later dealt with by using chilled moving belts and blown air at the oven entrance to keep the external temperature down.

While the controversy eventually subsided, it never fully disappeared. As recently as the eve of World War II, in the well-known Lithuanian shtetl of Eishyshok, only hand matza was permitted.

DIFFERENCES IN JERUSALEM

The European debate took longer to reach the Holy Land. The first matza machine was brought from Trieste to Jerusalem in 5623/1863 by Rabbi Yisroel Ozlaner, formerly a Rav in Minsk, and founder of Yeshiva Etz Chaim in Yerushalayim. The machine was used without opposition for several years, during which time Rabbi Shmuel Salant was a Rav in the city. Even Jerusalem resident Rabbi Auerbach, author of the Imrei Bina and a contributor to the Moda’ah, refrained from his opposition, possibly because he now saw its operation first hand. But eventually, a feud broke out here, as well.

In 5663/1903, the still-functioning Matzos Cohen-Halperin was founded in Jerusalem, and for Pesach 5666/1906, they began using machines. The local Perushim not only accepted the machine matza, but viewed it as mehudar (preferable). On 21 Adar 5666, the Badatz of the Perushim issued a letter that was endorsed by Rabbi Shmuel Salant to the effect that the machine matzos were kosher “lemehadrin meihamehadrin without any concern at all.” A mere three days later the Badatz of Jerusalem’s Chassidim issued a flyer called “Moda’a Gelya,” listing all of the rabbis who forbade machine matzos.

Quiet reigned for a year, but in 5668/1908, the poster (pashkavilim) war erupted. The opening salvo was the publicizing of a letter by Rabbi Avraham Bornstein (the Avnei Nezer) that forbade machine matza. This was met several days later by a public letter from Rabbi Naftali Amsterdam, a leading disciple of Rabbi Yisroel Salanter, that not only was machine matza permitted, but that day he had baked his own machine matza, and a day later by another letter that invited all to come watch the machine matza being baked for Rabbi Shmuel Salant. The Perushim further noted that the residents of Jerusalem should refrain from heeding the rulings coming from abroad, and should follow the local authorities, who had permitted it.

The following year, the exchange was renewed. The intensity of the debate sometimes led to misquoting. One of the Chassidic proclamations against machine matza quoted the Maharsham of Brezhan as prohibiting it. In response to a query, he stated that the printing of his letter was hevel vera’us ruach (absurd). It seems that he not only permitted, but accepted machine matzos for use at the seder. After a while, the debate subsided and the status quo, with machine matza being produced and preferred by the Perushim and shunned by...
the Chassidim, prevailed.

Both in Europe and Eretz Yisroel, the debate was sometimes heated. It must be emphasized that the arguments on both sides were cogent and were offered by gedolei haposkim. There were indeed problems with the machines, and there were problems with hand matza. There were halacha advantages for each, and each poseik weighed the factors, reaching his own conclusion.

THE AMERICAN SCENE

With the exploding Jewish population in the US, machine matza quickly found its way into acceptability, and no major debate occurred on US soil. As it became clear that, in the U.S., the possibility did not exist to use hand matza only, and that the machine was here to stay, the Rabbanim decided not to fight the concept but to improve on it. One example is Rabbi Yosef Rosenfeld of St Louis, MO, who in 1903 published a booklet on the kashrus concerns of a matza bakery. He wrote:

“I was forced to leave my home and come to this land, and I became aware that here they make matzos by machines. All the rabbis, and at the head, our leader, our Rabbi, Rav Yaakov Yosef, the head of the United Community in New York, permits them. I studied the process and saw that if the factory is large and well designed, the dough isn’t heated up [before being placed in the oven]…. I realized that to uproot and annul the production of matzos by machine is an impossibility…. I therefore decided that my efforts would be to fix what was needed and possible.” 26

By the late 1800s, there were a number of matza factories in the United States. In 1886, Dov Behr Manishevitz emigrated to Cincinnati, Ohio, from Prussia. After a stint as a shochet, he started his factory that exists to this day. He revolutionized the process of matza baking. No longer were machine matzos simply rolled out in a press. The entire process was automated, baked radically with gas heat, not wood. The entire oven was a patented belt device that moved the matzos through a long tunnel, and produced perfectly baked, consistent matzos. By 1903, the Manischewitz company was using three different machines to automate three different aspects of the process. They eventually held more than 50 patents relating to the process, and in 1920, they claimed that they were capable of producing an astonishing 1.25 million matzos a day. It should be noted, however, that even though the recommended procedure always called for cleaning the machines after every use, for many years, this safeguard was honored in the breach. Beginning 50-60 years ago, yeshiva bachurim and other groups would reserve the first baking of the day for their supervised matzos, which lasted 18 minutes. Before starting, they would carefully clean clumps of dough from the machinery. Today, as mentioned, the machines are coated with non-stick Teflon. Other groups – such as the K’hal Adath Jeshurun (of Washington Heights, N.Y.C.) – have for years made a practice of reserving a day for their matza baking, when they stop production every 18 minutes to clean the machines. This same concern began to be applied more exactly to hand matzos some 50 years ago, and is still hon-
ored: stopping all activity and cleaning rolling pins and other equipment every 15 minutes or so, and using rolls of disposable paper covers on the marble tabletops for each batch of dough.

The present-day Manischewitz factory is under the hashgacha of the OU. Every aspect of the automated process has been thought through and controlled. As a testament to his genius, the process originally developed by Behr Manischewitz has not radically changed in the last 120 years, and his oven design has become the standard of all commercial baked goods.

The New York-based Horowitz Brothers & Margareten Company was also expanding, and established a name for itself in the early part of the 20th century. Its reputation was such that Edward Carlin of the Department of Industrial Exhibits sent a letter to Fredrick Margareten in April, 1938 suggesting that a model of their bakery would make for “a most interesting exhibit” at the New York World’s Fair. Horowitz Brothers & Margareten’s response was only lukewarm, and there is no evidence that a matza bakery was exhibited at the fair.27

“LISHMA”: A REMAINING CONCERN

In the six machine-matza factories that we have visited, the attention to detail and the meticulous care to avoid chametz is more than evident. That has removed most of the concerns that existed with the early machines, but were in reality extrinsic to the concept of machine matza. What remained were the issues that were inherent to a machine
product, and that has brought an additional question to the fore: May one fulfill the mitzva of eating matza the first night of Pesach with machine matza? The matza used for the mitzva must be "she-mura matza," i.e. guarded against any water, and baked l'shem mitzva, purely for the sake of the mitzva of matza. Because of this, the She’tilos, and in its wake, many others, including the Shulchan Aruch, ruled that if a child or an imbecile kneaded the dough, that the resulting matza is not acceptable for the seder. It would seem that a machine should be no better. It certainly cannot have the proper intent. Rabbi Natanson had already addressed this question, but it continued to come up.

Rabbi Yonoson Shteif, who headed the post-World War II Viener Kehilla in Brooklyn (Adath Yereim), brought its traditional approach to machine baking to America. Every stage of the process was initiated with a hands-on, human action: flour and water were mixed together manually before the mechanical mixer took over; workers placed a chunk of dough on the surface where it was rolled into flat squares by machine; and they laid the matzos on the conveyer belt feeding them into the oven. Each action was accompanied by a declaration "l’shem matzos mitzva." The process was stopped every 18 minutes for cleaning the equipment.

Rabbi Yechiel Michal Tuketchinsky (d. 5716/1956) dealt with the "lishma" issue differently, and concluded that, indeed, for the first night, it is preferable to use hand matza. If it is unavailable, however, a beracha may be recited on machine matza. He offered two reasons. First, he developed a novel suggestion that the "watching" is not intrinsically linked to the baking, and may be done by an observer. Alternatively, he relied on a suggestion of the Minchas Chinuch that the problem with observing an unqualified person knead is that one cannot adequately supervise that which is in the hands of another. That does not preclude "watching" a machine. Finally, Rabbi Tuketchinsky notes that there are those who want to argue that intent when the button is pushed is sufficient to carry through for all of the processes that the machine performs as a consequence of that press of the button. He essentially rejects this third, weaker rationale.

The concept of intent, kavana, during the button push is used in many factories today, where the workers are instructed to have in mind the mitzva when they push the button to start the machine. Furthermore, many years after Rabbi Tuketchinsky, Rabbi Ovadia Yosef used that as his main argument for justifying the use of machine matza, although he, too, advises that, ideally, one should use hand matza. Although the concerns of chametz have become minimized, an additional problem with machine matza was raised. Assuming it is not chametz, there...
was still a fear that because machine matza uses so little water, there may be some unbaked flour in the mix. Thus, the Chassidic custom of not eating gebrochts, wet matzos, may have more of a basis for a person eating machine matza. The fear is that unbaked flour would get wet and then become leavened on Pesach.

Thus we have come full circle. The

\textbf{Sha’arei Teshuva} conjectures that the origin of not eating gebrochts was because thick matzos were then commonly used, and there was a real fear of uncooked flour.\textsuperscript{11} By his time, it seems, matzos were thinner and crispier, thus alleviating the fear. Today, with the widespread use of machine matza, the reason may again be applicable for reasons of its own.

So as you prepare to take the bite and hear that crunch, remember that the piece of matza you are eating, whether machine or hand, comes from processes rooted in hallowed antiquity. And while it may appear that it has seen some dramatic innovations and changes in the last 120 years, the basic mesora of Am Yisroel on matza and its various relevant concerns remain with us.

\begin{itemize}
\item\textsuperscript{1} The authors thank Professor Jonathan D. Sarna and Rabbi Moshe Kolodny (of the Orthodox Jewish Archives) for their help in researching this article.
\item\textsuperscript{2} Aruch Hashulchan, Orach Chaim 459:3.
\item\textsuperscript{3} Rama, Shulchan Aruch, Orach Chaim 460:4.
\item See Daniel Schwartz, Pulnos Mattzot-Ha’oni'chon b’Yerushalayim, Sinai, vol. 122 (5758), note 31, that Rabbi Shlomo Zalman Auerbach wrote a halachic article.
\item\textsuperscript{4} And Rabbi Moshe Kolodny (of the Orthodox Jewish Archives) for their help in researching this article.
\item\textsuperscript{5} Bittel Moda’a, page 70
\item Or so he claimed. His detractors claimed that he was never a dayan (Bittel Moda’a).
\item Encyclopedia Judaica 4:1110-1111
\item Bittel Moda’a, p. 103
\item Avnei Nezer, Orach Chaim I, 372
\item Moda’a L’Beis Yisroel I
\item Moda’a L’Beis Yisroel II
\item Hamaggid 14: 5 – an organ with maskilim among its founders.
\item Moda’a L’Beis Yisroel Hakadama
\item Interestingly, in his letter, he stated that in these matters, one should not reveal the reasons, but simply issue the definitive ruling. His letter was also published in Divrei Chaim, Cheilek I, Or.Ch., 23.
\item Bittel Moda’a 2b, 14a.
\item Maaraches Chametz U’matza, vol. 7, page 400.
\item Bittel Moda’a, Shaar
\item ibid p. 70
\item ibid
\item ibid p. 71
\item ibid p. 77
\item Yaffa Eliach, There Once Was a World, 1998, p. 430.
\end{itemize}

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\item For the details of this debate, see Schwartz, pages 113-128.
\item See Rav Moshe Sternbuch, Hagadah shel Pesach, Moadim Uzenanim (5740), p. 22.
\item Printed in Tzohar (ed. Rav Elyakim Dworkes), vol. 5 (5759), page 412.
\item St Louis 1903 Sefer Yoseif Tikva, Hakdama
\item Printed in Tzohar (ed. Rabbi Elyakim Dworkes), vol. 5 (5759), pages 407-411.
\item The issue of “lishma,” positive intent, is only relevant on the first (two) night(s).
\item Or. Ch. 460:10.
\end{itemize}