The Scientific Revolution and Modern Bedikat Tola’im Trends

By: STEVEN ADAMS

As I was preparing this essay on Chol HaMoed Sukkot 2015, I learned of the murder of Eitam and Na'ama Henkin, HY”D. R’ Eitam Henkin authored Lechem Yehiyeh Le’achla1 defending a lenient approach to the laws of bedikat tola’im using technical halachic argumentation. This essay similarly argues for leniency in bedikat tola’im, but from the historical perspective. I dedicate my essay to their blessed memory.

Introduction

Many people today assume that leafy vegetables must be thoroughly washed and inspected before eating to ascertain that tiny insects such as aphids, spider mites and thrips are not present. Rabbi Moshe Vaye, in his encyclopedic Bedikat HaMazon KaHalacha,2 has educated the public to the fact that minuscule insects are common in nearly all greens and finds legal support for their prohibition from respected poskim from centuries ago to modern times. On the other hand, Rabbi Eitam Henkin’s Lechem Yehiyeh L’achla provides reasoning for a more lenient attitude. Using technical halachic argumentation, Henkin makes an excellent case for a more relaxed approach to bedikat tola’im. Perhaps the route to reaching the halachic truth is to step back and take a broad historical assessment of this topic. I argue that the rabbis of the Mishna, Talmud, and medieval era ignored these tiny insects and ate the greens without careful rinsing or inspection. This lenient halacha continued until the 17th century when some rabbis wrote of the existence of very small bugs in salad greens. I posit that this new trend in halacha was due not to a new phenomenon in nature but to new discoveries in science:

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Steven (Tzvi) Adams received semicha in Orach Chayim and Yoreh De’ah at Mesivta Tifereth Jerusalem of the Lower East Side and a Bachelor of Science in biology from Touro College.
The Scientific Revolution of the 16th – 18th centuries, which produced the compound microscope and improved magnifiers, the discovery of life at the micro-level, the study of entomology and biological pest control, made rabbis more alert for smaller creatures crawling on their food.

I will demonstrate that though many rabbis of the recent centuries clearly forbade even tiny lettuce bugs, many and perhaps most observant Jews ignored these warnings and continued to eat garden greens with no concern for the presence of small insects. This lenient practice was all but dropped only in the last several decades.

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Single lens magnifiers and “burning glasses” existed since ancient times. However, multiple lens optics which produce much greater magnification were a relatively recent innovation of the late 16th century. Originally used in telescopes and microscopes, the new technology was soon incorporated into handheld magnifying glasses and the textile merchant’s and jeweler’s loupe. This advance in optics led to many breakthroughs in the biological sciences. Most notable are the accomplishments of English scientist Robert Hooke (1635–1703), and Dutch textile merchant Anton van Leeuwenhoek (1632–1723). Hooke’s *Micrographia* (1665) documented his observations through lenses of parts of insects and plants. This book caused a tremendous sensation throughout Europe.3

Using the microscope as well as improved single-lens magnifiers to discover bacteria and other microorganisms (1674), Leeuwenhoek became known as the “father of microbiology.” The microscope became a popular diversion among the upper classes throughout Europe. It was common to see it featured in the parlors of esteemed households during the 18th century.4 Entomology, the study of insects, emerged as a branch of scientific endeavor in the 17th century.

It is also significant that aphids, the common infestation culprits, were given much attention by scientists in the 17th and 18th centuries. Italian biologist Francesco Redi (1668) and van Leeuwenhoek (1700) described the phenomenon of parasitoidism in aphids. Leeuwenhoek drew

3  <http://www.famousscientists.org/robert-hooke/>. The diary of Samuel Pepys, an English Member of Parliament (1633–1703) illustrates how *Micrographia* captured the public’s interest: “Before I went to bed I sat up till two o’clock in my chamber reading of Mr. Hooke’s Microscopical Observations, the most ingenious book that ever I read in my life.” <http://www.pepys.info/1665/1665jan.html>

4  <http://www.flysfo.com/museum/exhibitions/world-examined-microscopes-age-enlightenment-twentieth-century#sthash.thkl1VDL.dpuf>
a parasitoid wasp using an aphid host.\textsuperscript{5} Italian naturalist Giacinto Cestoni (Livorno, 1637–1718) also reported (1706) this occurrence in aphids. He called aphids “cabbage sheep,” and their parasitoids “wolf mosquitoes.”\textsuperscript{6}

Van Leeuwenhoek and Cestoni observed the absence of mating in many aphid species and suggested that aphids may be hermaphroditic. Likewise, French scientist René Antoine de Réaumur (1683–1757) studied aphids and noted (c. 1735) that he had never seen any coupling between aphids. Charles Bonnet, a Genevan naturalist, earned himself fame by proving (1740) with experimentation that parthenogenesis, reproduction without the uniting of a male and female, indeed is a mode of reproduction in aphids.\textsuperscript{7} Réaumur wrote of the viviparous nature of aphids—they bring forth live young that have already developed inside the body of the parent, and that ants feed on the ‘honey-dew’ produced by aphids.\textsuperscript{8}

In the field of biological pest control, Réaumur suggested (1734) curtailing aphid growth by introducing lacewing eggs into greenhouses. Similarly, acclaimed Swedish zoologist Carl Linnaeus (c. 1760), and English physician Dr. Erasmus Darwin (1800), recommended using predacious insects such as lady beetles (known as ‘ladybugs’ in North America), lacewings, and predatory wasps to keep produce free of aphids.\textsuperscript{9} In the early 1800s, the English entomologists William Kirby and William Spence described growers who used lady beetles as predators of aphids.\textsuperscript{10}

\textsuperscript{5} Egerton, Frank N. “A History of the Ecological Sciences, Part 19: Leeuwenhoek’s Microscopic Natural History,” \textit{Bulletin of the Ecological Society of America: Commentary}, vol. 87, number 1, January 2006. See Figure 10 for Leeuwenhoek’s drawing of parasitism in aphids.

\textsuperscript{6} <http://www.faculty.ucr.edu/~legneref/biotact/bc-2.htm>


Table 1 - Timeline of Developments in Science

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tr>
<td>1590</td>
<td>Two Dutch spectacle makers, Zacharias Jansen and his father Hans, start experimenting by mounting two lenses in a tube, forming the first compound microscope.</td>
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<tr>
<td>1602</td>
<td>Italian naturalist Ulisse Aldrovandi publishes his illustrated <em>De animalibus insectis</em> (1602).&lt;sup&gt;11&lt;/sup&gt;</td>
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<tr>
<td>1609</td>
<td>Galileo Galilei develops a compound microscope with a convex and a concave lens. Galileo writes that he used his instruments to study the flea and mosquito.&lt;sup&gt;12&lt;/sup&gt;</td>
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<tr>
<td>1625</td>
<td>Italian naturalists Federico Cesi and Francesco Stelluti publish <em>Aparium</em>, a description of the microscopic anatomy of bees. It is the first published record of microscopic observations.&lt;sup&gt;13&lt;/sup&gt;</td>
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<tr>
<td>1634</td>
<td>Thomas Mouffet’s <em>Insectorum sive Minimorum Animalium Theatrum</em> (Theatre of Insects), an illustrated guide to the classification and lives of insects, is published.&lt;sup&gt;14&lt;/sup&gt;</td>
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<tr>
<td>1644</td>
<td>Giambattista Odierna, an Italian scientist, develops an early microscope and studies the eyes of flies and other insects with it. In 1644, he publishes <em>L'occhio della mosca</em>, or The Fly’s Eye.</td>
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<tr>
<td>1665</td>
<td>Robert Hooke’s book <em>Micrographia</em> officially documents a wide range of observations through the microscope, including descriptions of species of mites and vinegar nematodes. It is a public sensation and has a huge impact, largely because of its impressive illustrations.&lt;sup&gt;15&lt;/sup&gt;</td>
</tr>
<tr>
<td>1668</td>
<td>Italian naturalist and biologist Francesco Redi publishes his <em>Esperienze Intorno alla Generazione degli Insetti</em> (Experiments on</td>
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<sup>11</sup> <https://archive.org/details/deanimalibusinsect00aldr> See the drawings of tiny thrip-like insects on page 763.

<sup>12</sup> Grens, Kerry. “Apiarium, 1625 - Galileo’s improvements to the microscope led to the first published observations using such an instrument,” *The Scientist*. March 2015.

<sup>13</sup> See previous note.

<sup>14</sup> <http://www.biodiversitylibrary.org/item/123182#page/95/mode/1up> pp. 60-65.

<sup>15</sup> <http://www.microscopesamerica.com/History%20of%20Microscope.html>
including descriptions of 180 parasites and a refutation of the theory of spontaneous generation.

1669 Jan Swammerdam, a Dutch biologist and microscopist, publishes his *Historia Insectorum Generalis* (*The Natural History of Insects*), a groundbreaking contribution to the nascent study of entomology.\(^{16}\)

1674 Anton van Leeuwenhoek, a Dutch textile merchant, uses his knowledge of grinding lenses to achieve greater magnification which he utilizes to make a microscope, enabling detailed observations to be made of bacteria and other micro-organisms. His work encourages countless others to join the burgeoning community of microscopists at the end of the seventeenth century.\(^{17}\)

1734–1760 René Réaumur and Carl Linnaeus recommend using predatory insects to keep produce free of aphids.

1753 English naturalist Henry Baker publishes *Employment for the Microscope* (1753) where he describes the presence of dinoflagellates in sea water.

1815–1826 William Kirby and William Spence publish their *Introduction to Entomology*.

### Rabbinic Awareness and Consideration of Modern Advances in Science

Jews were aware of the new advances in science. Much of the Scientific Revolution was centered in Italy. During this period an overwhelming number of prominent Italian rabbis (including R’ Yitchak Lampronti) graduated from the University of Padua Medical School and encouraged


the study of the sciences. They were familiar with the latest advances in the biology. 18

R’ Yitchak Lampronti (1679–1756), the illustrious rabbi physician of Ferrara, Italy, considered the halachic consequences of modern scientific discoveries on the ancient belief in spontaneous generation. In 1668, Francesco Redi had experimentally disproven the belief that maggots appear spontaneously from decaying meat. In reality they actually are born from microscopic eggs. Lampronti exchanged thoughts on this question with his mentor, R’ Yehudah Briel (1643–1722), a leading Torah scholar from Mantua:

The views of Italian poskim on *bedikat tolaim* will be cited.

R’ Yisroel Lifschitz (1782–1860), author of the popular Mishna commentary *Tiferet Yisroel*, records a rabbinic dispute from the 18th century over the implication of the microscope on identifying kosher fish:

Additionally, many leading rabbis, including R’ Moshe Hagiz (Amsterdam, 1671–1750) and R’ Yakov Emden (Germany, 1697–1776), read

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secular newspapers regularly, and considered familiarity with the happenings of the world essential.19

These references make clear that the rabbinic mind was well aware of the most recent scientific advancements in optics, microbiology, and biological pest control—and contemplated their many impacts on halacha.20


20 David B. Ruderman in *Jewish Thought and Scientific Discovery in Early Modern Europe* pp. 200–211 discusses an interesting relevant sermon of R’ Azariah Figó (Venice, 1579–1647). Figo discusses the new telescope and eyeglasses because it is interesting to his Italian Jewish audience: “Let us begin our examination of Figo’s sermons with one delivered in Venice on a Rosh ha-Shanah that happened to fall on the Sabbath. After quoting a midrashic passage about God’s raising his voice on the New Year, he opens with the following remark:

The human being was given intelligence by [God]…who bestowed him with great strength…until He filled his heart on numerous occasions with the capacity to make artificial inventions analogous to the actions of nature. Because of the weakness of matter or the deficiency in its preparation…man tries to correct and replace it by some discovery or invention drawn from his intelligence to the point where he will not appreciate what is lacking in nature. We have indeed noticed weak-eyed persons who, out of a deficiency of the matter of their eyes, were unable to see at a distance or [even] close up and were thus very nearsighted. Yet human intelligence was capable of creating eyeglasses placed on the bridge of the nose which aid in magnifying the strength of vision for each person, depending on what he lacks, either a little or a lot. This was similarly the case for the eyeglass with the hollow reed [i.e. the telescope] of Rabban Gamaliel [where it is stated] in chapter 4 of Eruvin: “Whereby as soon as I looked, it was as if we were in the midst of the [Sabbath] boundary.

One wonders what a congregation of worshipers might have thought of so bizarre an opening for a sermon on the first day of the high holy days. But Figo apparently must have known and appreciated the mental universe of his audience, so he chose to begin with something familiar to them. He would introduce his lesson on Jewish religious values by espousing an ideal both he and his congregants apparently shared: that of the human mandate to replicate, to intervene, and to improve upon nature. The products of nature often appear deficient or unfinished; they invite human craftsmen and inventors to correct and improve
Because rabbis of the past four centuries had knowledge of a smaller world of life observable only upon careful scrutiny, they devoted more attention to bedikat tolaim and imposed stricter guidelines to find even the smallest insect.

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The Talmud mentions many herbs that are known today to be commonly infested with minuscule insects. As these insect pests are important members of the ecosystem, it is reasonable to assume they existed in the era of Chazal as well.

Here is a brief description of the important role these insects play in the environment: Aphids feed on plant sap and excrete the surplus sugars in their liquid waste called ‘honey-dew.’ This ‘honey-dew’ sugar is an essential food source for ants, flies, and wasps; it is also an important carbon source of nitrogen-fixing bacteria. Readily available ‘honey-dew’ thereby increases soil nitrogen, which is necessary for plant and crop growth.\(^{21}\)

Furthermore, aphids are the primary food of lady beetle (Coccinellidae).\(^{22}\)

The aphid midge, minute pirate bugs (Anthocoridae) Crab spiders, entomopathogenic fungi and lacewings (Chrysopidae) also feed on aphids.\(^{23}\)

In fact, green lacewing larvae are voracious eaters of the eggs and immature stages of many insect pests, including species of aphids, spider mites, and thrips.\(^{24}\)

No doubt, these tiny insects benefit the bionetwork in many other ways as well. Assuming the natural world functioned in the times of the Talmud more or less in the same manner as it does today, aphids, thrips, and spider mites must have existed then to play their vital role in ecology. Though I am no expert on paleoentomology, a brief search

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shows that many ancient thrip\textsuperscript{25} and aphid\textsuperscript{26} fossils have been uncovered all around the globe. The fossils of these insects’ predators such as the lady beetle\textsuperscript{27} and lacewing\textsuperscript{28} have been found as well. As “there is nothing new under the sun,” these same insect species were surely residing in the folds of leafy greens millennia ago as they are today. Yet nowhere does the Talmud warn the reader that these greens need extra precautionary rinsing and inspection. This silence demonstrates that the rabbis of the Talmud did not consider these creatures forbidden.

\textit{Chullin 67}

The fundamental sugya that develops the laws delineating which insects are forbidden is in \textit{Chullin 67b}:

כל השרץ השורץ על הארץ לברוח במחושש... על הארץ הלוצאים את ההודי
שבוטעstanding את הצמחים שבלבושם והלוכלוכים שם והלוכלוכים...
השרץ על הארץ לברוח לה السبتיר ויהיו שבוטעים...
ודני (י“ר א) את נבולה השנקל לברוח את הדורים שבحلمו...
(ו“ל)
ודני. הלוכלוך הנצמאים בנו ער בלבוש השמה של"ו" מרכילים
(ו“ל)
יתר (י“ר א) נוכל על הגן הז חות את לברון השילוש והז חות לעילוש
על ארבעת הז קבר כל חור לברוח את הצמחים את הדורים הלוכלוכים הפרה
(ו“ל)
רעים הז ג當地 עד כל לברון את הדורים הלוכלוכ (ו“ל)
שילוש. הלוכלך הנצמאים בנו וⒸ הנותנים את השמה. השמה: ו“ש黟ירבד. מ
(ו“ל)
дол. את ראלי קורי ל (ו“ל).


\textsuperscript{27} A.G. Kirejtshuk & A. Nel. “The oldest representatives of the family Coccinellidae (Coleoptera:Polypogha) from the Lowermost Eocene Oise amber (France),” \textit{Zoosystematica Rossica}. 21(1), St. Petersburg, July 2012, pp. 131–144.

is defined as species of fly; כליסים is a legume species. What is so interesting and telling about this Talmudic passage is that fruit and beans with infestations are discussed—leafy herbs are not. That should strike the modern rabbinic mind as odd—leafy herbs are from the worst category as far as insect infestation goes. Furthermore, all the insects described are relatively large. There is no mention of our tiny aphids and spider mites or any other minuscule creature. צִוְ dispro and יִורֶשִׁים are translated as small but obvious flies (gnats and fruit-flies—perhaps Drosophila species). הרִבָּרָה is translated by Rashi as ש"גרביליי or “warble fly” (Hypoderma bovis). The larvae (תולעים) of this fly are 1-1.5 inches long. הרָאָשׁוֹל is the scorpion. The תורָשֶׁה is “as long as a snake” (Rashi). Rashi’s אַשְּרֵי הָאָרֶץ is a family of beetle (scarab). Rashi (Vayikra 11:41) defines the פִּלִּים as a a centipede. Other rishonim give similar translations.

To argue that the tiny barely noticeable organisms in lettuce are included by the clause "לפרות את הדומה ואת הדומה לדומה", is an unreasonable stretch. If these minute creatures were indeed forbidden they certainly deserved equal mention in this central law-laying sugya. Such silence can be viewed as Chazal’s seal of kashrut and approval.

The same conclusions can be drawn from many other passages in the Talmud. Makkot 16 counts the number of prohibitions transgressed by consuming various insects:

Makkos 16

לפרות את הדומה ואת הדומה לדומה

Rashi gives the French word “כִּינִיל” for בְּינֵינָא דְּבִי כְּרַבָּא. Otsar La’azei Rashi\(^{31}\) translates this as “chenille,” a French word for ‘caterpillar.’

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\(^{29}\) See R’ Yehonoson of Lunel’s commentary:

[...] ש"גרביי give similar definitions.

\(^{30}\) See picture here: <https://upload.wikimedia.org/wikipedia/commons/thumb/1/1a/Hypoderma_bovis_larvae_young.jpg/330px-Hypoderma_bovis_larvae_young.jpg>.

\(^{31}\) Catane, Mochè. Otsar La’azei Rashi. Jerusalem, 1984, pg. 132. The word appears in different variations in various manuscripts and editions of the Talmud. קינילא, קִניִילא, אָטִילא, דִּילִילא, מִילא, מְלִילא, בִּילילא are variations cited in Otsar La’azei Rashi.
Rashi vaguely defines as שרש מים. Why did Chazal caution only against eating ants (נמלה), wasps (צרעה) and the cabbage worm/caterpillar (ביניתא דבי כרב)? Why did they not warn against the tiny insects we find in produce? Even if one argues that insects mentioned here were eaten culturally in the period of Chazal and, therefore, required special mention, wouldn’t aphids, thrips, and spider mites demand some comment as well? It is arguably very important to alert the public to the presence of these pinhead-size bugs because they hide in leaf-folds and are discreetly camouflaged. People in any society may more frequently eat aphids than ants or wasps.

**Chullin 6a**

In today’s Orthodox Jewish world it is common for the pious rabbi and “ben-Torah” to refrain from eating at food establishments or households where the kashrut is not known for its highest standards. A commonly shared concern is: Are the salad greens and produce properly washed and checked? This sentiment, however, was not shared by the rabbis of the Talmud. Chazal expressed reservations about the reliability of the less learned and religious in their separating ma’aser and not using shevi’i produce. They conveyed no such hesitations about the trustworthiness of the am ha’aretz for using bug-free produce:

והתניא הנותן לשכנתו עיסה לאפות וקדירה לבשל אינו חושש לשאור ותבלין שבהתן לו משום שביעית ולא משום מעשר אם אמר לה עשי לי משליך חוסש לשאור ותבלין שבהתן לו (חולין דף וע…)

Rashi explains that the neighbor (שכנן) here is an אשת עם הארץ. תבלין means herbal spices such as dill, mint, and coriander leaves (cilantro) to mention a few—all regularly infested with thrips and aphids. The following aggada shows that this is the meaning of תבלין used in cooked dishes (as in the scenario of Chullin 6a):

אלו הקפר לבר יוהש בןنجיא เมינו מפרים של שבת ריהו נוקף אפר ולתבלין אחד יש לו וمبادה שמי מפרים של שבת ריהו נוקף אפר ולתבלין אחד יש לו וمبادה שמי מפרים של שבת ריהו נוקף אפר (חולין דף וע"

This or שיבתא שיבתא means dill. Perhaps the reason Chazal trusted the am ha’aretz with checking produce was because they did not consider the tiny

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insects (aphids etc.) assur; the am haaretz can certainly be trusted to remove clearly visible flies, worms and slugs.

Grapes

Several years ago, Brooklyn rabbis discovered that there are frequently tiny spider mites on grapes. Concerned rabbis and kosher certifying agencies warned consumers to carefully and thoroughly rinse grapes before consumption.

Let us think. Grapes have been around for thousands of years. They are mentioned many times in the Torah and Gemara. Infestation surely occurred during biblical and Talmudic times. Here is what the Torah tells us:

כְּנַפְשְׁךָ אַל תַּקְּרָא כְּלָיו: וְאֶל שָׂבְﬠֶרֶךְ לֹא תִתֵּן )דברים -כִּי תָבֹא בְּכֶרֶם רֵﬠֶכְלָיו (כג:כה.

When you (as a hired worker) come into your friend’s (employer’s) vineyard, then you may eat grapes to your desire until you are satiated; but you may not put any in your vessel. (Devarim 23:25)

The field worker of ancient times was allowed to snack on grapes—even though he generally did not have a hose or any running water available to him for performing a fruit wash as he worked amongst the vines. Furthermore, the Talmud informs us that the harvester was not allowed to take a break long enough to pray or recite the after-meal blessing in the usual fashion, as this was considered being idle during paid time (see Talmud Berachos 16a and Shulchan Aruch, O.C. 110:2, 191:1). Surely, under such constraints, workers could not stop to carefully wash and inspect grapes for spider mites. It is obvious that Chazal were not concerned about eating these barely noticeable insects.

Grape Leaves

Grape leaves are mentioned in the Mishna in the laws of orlah, revai, nazir, and ashayra:

— and in the laws of shevi’ith:

The Mishna was unaware of any possible issur concerning grape leaves other than orlah, shevi’ith, revai, nazir, and ashayra. The Mishna commentaries of Rambam (Spain, Morocco, Eretz Yisroel, Egypt, 1138–1204), R’ Shimshon of Sens (France, c. 1150 – c. 1230) and Ri Malki Tzedek (Italy,
11th century) do not add any warning about tiny forbidden creatures in these leaves. These tiny insects were surely present in vineyards of Spain, Morocco, Eretz Yisroel, Egypt, Italy and France at some point of time during the 11th through 13th centuries, yet these authorities did not consider the matter important to mention in their writings (or perhaps were unaware of their presence). Some of these Mishnaic laws are cited in R’ Yosef Karo’s *Shulchan Aruch* (YD 294:2). R’ Karo did not communicate a frequent phenomenon of small insects in these leaves.

Only in the 18th century did rabbis take note of these insects. The rabbi of Aleppo, Raphael Solomon Laniado (d. 1793), wrote about the newly discovered tiny pests in grape leaves.

Rabbi Daniel Terni (Florence, Italy, d. 1815) in his *Ikrei Dinim* (also known as *Ikrei Hada”t*) gave an account of the commotion these insects caused:

These responsa testify that until this late era grape leaves were eaten with no care for tiny insects. Clearly something had occurred since the days of early rabbinic writings to influence the attitude of later rabbis.
On Passover, every year each Jewish household prepares leafy herbs for marror eaten at the Seder. The laws of marror are discussed in Talmud Pesachim 39:

Many varieties of marror are listed and the details of its laws are discussed. Dr. Zohar Amar has documented marror traditions that include lettuce (Lactuca serriola), wild lettuce (Lactuca virosa), chicory (Cichorium endiva), dandelion (Taraxacum officinale), and sow thistle (Sonchus oleraceus). Nearly all these varieties are frequently infested greens. This discussion in the Talmud contains contributions from rabbis of the Mishnaic and Talmudic periods spanning several centuries. Post-Talmudic commentaries were produced by the medieval gaonim and rishonim. Yet in all this literature there is not a word of warning about tiny insects for which one must examine the marror carefully in sunlight. It is extremely improbable that for close to 1,500 years from Mishnaic times through the 17th century and from across Europe, throughout the Mediterranean Basin to Iraq, there never were infestations of aphids or thrips in any of these marror species. There is utter silence. Today it is difficult to imagine a rabbi lecturing about the laws of marror without including directives on careful bug

33 Zohar Amar. Merorim, Tel Aviv, 2008.
checking. This is remarkably absent from the entire marror discussion in the gemara and rishonim.35

The Chasam Sofer’s Innovation

R’ Moshe Sofer (1762–1839) was the first to suggest that although the Talmud Bavli36 encourages lettuce (חסא) as the preferred first-choice marror (see Shulchan Aruch OC 473:5), one should rather use the sure bug-free horseradish37/תמכא, the third-choice marror of the Mishna, lest one eat tiny insects hidden in the lettuce leaves:

מנהגי החתם סופר פרק י אות יח: למרור לקח בכל שנה ושנה לכל בני ביתו חזרת בין לברכה ובין לכריכה' סאלאט'שקורין, ואיזה בחורים היו מופקדים לברור י כל ראיה שפעקיף )=זכוכית מגדלת("הסאלאט ע

The Chasam Sofer, true to his word, employed "אנשים מיוחדים ומנקים" מסויימים בעלי יראה הבודקים in his own home to check the Passover marror:

Noteworthy are the remarks of Rav Shimon Schwab: “As far as our Jewish people are concerned, our fathers and mothers have for centuries used lettuce for Morror [“bitter herbs”] on the Seder Night as well as parsley for Karpas [greens], and in those days they were no less infested with vermin than they are today. So, we have no right to make new issurim [prohibitions] and to forbid the eating of any vegetables per se to the general public.” (Schwab, Shimon. “Inspection of vegetables,” Kashrus Magazine. June, 1986, p. 22; cited in Kraemer, David C. Jewish Eating and Identity Through the Ages. Routledge, 2007, p. 155)

The Talmud Yerushalmi and many rishonim (perhaps Rambam as well) did not see the order of the Mishna as a directive for preference (Zohar Amor ibid).

What insects were these “bochurim” checking for with their loupes? Fruit flies are clearly visible without extra light and magnification because of their size and color contrast. It is clear that R’ Sofer was concerned about tiny bugs such as aphids and thrips, which commonly inhabit lettuce leaves. These insects are indeed difficult to detect without extra scrutiny; good lighting and magnification are useful towards their finding. However, centuries of predecessor Torah sages who followed the ruling of the Bavli did not share the Chasam Sofer’s opinion of skipping for (European) mishna. Mishna Berura (OC 473:5) cites and ratifies the opinion of the Chasam Sofer. Could the sudden avoidance of that which was previously used as marror be due to halachic outlook adapting to magnifying technology?

Checking Against Sunlight

R’ Hezekiah da Silva (1659–1698) and R’ Yakov Emden (1697–1776) advise performing an inspection in sunlight to find hidden bugs:

Chazal were familiar with such careful and accurate checking methods. Many tedious ways of inspecting a shochet’s knife are mentioned in the Talmud including examination against sunlight:

However, Chazal do not suggest such methods for bedikat tola’im.

Vinegar Eels and Transparent Glass

Vinegar eels (Turbatrix aceti) are tiny nematodes that grow naturally in unpasteurized vinegar, beer, and apple cider. Their maximum length is approximately 2 mm. In the late 17th century, these creatures received much attention from Hooke and Leuwenhoek who observed them under their microscopes and described them in their widely-read publications. It may be no coincidence that only after these findings did the tiny vinegar eels become a popular topic in rabbinic literature.
In 1797, R’ Pinchas Eliyahu Hurwitz of Vilna (1765–1821) published his Sefer HaBrit, a work in Hebrew describing the latest scientific advances. It became immediately popular in Jewish society. Therein (6:3), Hurwitz wrote of vinegar eels easily seen with a magnifying lens and warned the reader that vinegar must be cooked and then filtered before consumption. In Yesod VeShoresh HaAvodah (published 1782), R’ Alexander Ziskind of Grodno (d. 1793) similarly described the tiny insects that “grew from cider.” He advised that beer and ciders should be drunk only from clear glass cups (זכוכית לבנה דקה) so that swallowing worms can be avoided. Likewise, Rabbi Eliezer Papo (Bulgaria, 1785–1828) advocated checking vinegar for nematodes against sunlight in Pele Yoetz (chapter on bedikat tola’im, published 1824):

וכן בחומץ על הרוב יש בו תולעים דקים לאלפים ואין רואים לעין אלא כשיתו

והם מפראים נג ופשיט nbr כים את המחים עם זכוכית לבנה ועד...

Many other similar sources are cited in Darkei Teshuva Y.D. 84:45. The responsa that discuss the very small nematodes are all later acharonim. Though vinegar worms are not microscopic, these authors advised using sunlight and transparent glass because they can barely be discerned without these conditions—as described in Darkei Teshuva:

אינו יועץ לכל אדם㎏рен בברשה נוטה על כל פיה ועולה מה...

פשיט נג ופשיט בפיך ומברחת כל מים...

ואיזה אדם מכם אף מ النقد לשלים אינן רואים...

Many kashrut agencies today advise their restaurant inspectors (mashgichim) to inspect leafy herbs in a manner similar to that suggested by the aforementioned acharonim—using transparent glass against a strong light source:

Produce is rinsed in water. The water is collected in a glass container and examined over a lightbox. In this way, any small insect can be easily spotted floating in the water and the level of infestation can be assessed.

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38 Cited in R’ Avraham Danzig’s Binat Adam 38:34.
40 It is noteworthy that R’ Papo was heavily influenced by Hurwitz’s Sefer HaBrit and cites it many times in Pele Yoetz.
Herein lies the problem. During much of the era of Chazal, clear glass (זכוכית לבנה) was a rare and expensive item.

Glass was available only in colored form due to impurities in the sand from which the glass was manufactured. Only on rare beaches was sand found naturally pure and able to be fashioned into a transparent product. According to the Talmud, the tribe of Zevulun was blessed with pure sand, and they therefore profited from their “white glass”—clear glass products (Talmud Megillah 7a):

מפני טמוני זו טרית חול זו הר יקראו זכוכית לבנה

It was only in approximately 100 CE that the technique for creating clear transparent glass (by adding manganese dioxide) was discovered by glass blowers in Alexandria. 43 The lightbox method of checking for minute insects (with clear glass against a light source) was not feasible for the common people during much of the era of Chazal. Therefore, if this is the only practical method of preparing large quantities of ‘kosher’ herbs, it arguably cannot be required by halacha. Inspecting vinegar in transparent glass against sunlight was also not achievable for people in the age of Chazal and could not have been demanded by halacha either (and besides, these worms are kosher anyway so long as they remain inside a drop of vinegar44).45

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43 This explanation of zechuchit levana also appears in Brand, Yehoshua. Klei Zechuchit beSafrut baTalmud. Jerusalem: Kook, 1978, pg. 18, 99. Also see <https://en.wikipedia.org/wiki/History_of_glass#Origins>. The oft-repeated erroneous translation of zechuchit levana as “crystal” (lead glass—which came in many colors in ancient times) can likely be attributed to the fragility of crystalware, matching the description in Chullin 84.

44 Binat Adam (38:34) and many other poskim argued that these vinegar eels are kosher so long as they do not separate from the vinegar.

45 I heard this argument from my teacher Rabbi Yisroel Belsky zt”l and Rabbi Yaakov D. Lach presented as a reason (amongst many others—see <http://www.zootorah.com/RationalistJudaism/Rav_Belskys_Teshuva_about_worms_in_fish.doc>) to permit copepods. These tiny creatures inhabit...
Antonie van Leeuwenhoek and R’ Hezekiah da Silva—a coincidence?

In the year 1691, R’ Hezekiah da Silva published his Peri Chadash (פרי חדש) on Yoreh De’ah in Amsterdam. Therein he writes:

Which insects demand such belabored investigation as holding each individual leaf against the sun (כל עלה ועלה נגד השמש) and even this ordeal often is insufficient (ולפעמים אינו נראה וצריך מאד למצוא). Surely R’ Silva did not have fruit flies in mind when he wrote these words—as such pests are easily noticed at a glance. Furthermore, it is impossible that the great sages and pious men of the golden age in which da Silva lived were eating obvious flies. This is unthinkable. Yet R’ Silva writes: "והיחידים אינם נזהרים כראוי."

He almost certainly was thinking of such tiny indiscernible creatures as aphids and thrips.

A parallel development in the world of science was the following: In 1674, Dutchman Antonie van Leeuwenhoek described his observations of green algae in lake water as small live swimming creatures. During the next decade, he discovered many microorganisms and bacteria seen with great magnification. He was widely recognized and honored for his genius. By the end of the 17th century, van Leeuwenhoek’s fame as a scientist had spread across the continent and he was visited by many notable individuals including the Russian Tsar Peter the Great as well as Queen Mary of England.46 Could Leeuwenhoek’s famous new scientific discoveries of micro-life have influenced the halachic writings in the Peri Chadash? Furthermore, in the middle of the 17th century the microscope

waters in every part of the world, including the water sources that were available to Chazal. As copepods are visible only in a transparent glass container held against light, and such containers were not widely available during much of the era of Chazal, it logically follows that copepods were consumed by our sages since time immemorial.

46 <http://www.ucmp.berkeley.edu/history/leeuwenhoek.html>.
was used extensively for research in Italy.\textsuperscript{47} It was during this time that the young da Silva was born (1659) in Livorno, Italy and remained there until 1679.\textsuperscript{48}

**Mint (Mentha)**

R’ Chaim Elazar Spira (1868–1937) cites statements of \textit{acharonim} that mint leaves should be avoided because they are often infested (\textit{Darkei Teshuva}, \textit{YD} 84:94).

R’ Yosef Chaim of Baghdad (1835–1909) writes similarly in his \textit{Ben Ish Cha'i}:

\begin{quote}
יש רוקחים שעולמו בתולים דקים רבים ומושך והם משמיעים סלק
ולשון (ב' ה' שלוחנו) בן איש חי ש"ש נשא סי
\end{quote}

However, the Talmud mentions \textit{ניניא}—mint—many times as an edible spice and natural remedy.\textsuperscript{49} According to bug checking guides by popular kashrut agencies,\textsuperscript{50} commonly eaten species of mint have aphids, thrips, and other insects on their leaves and stems. Not until recent centuries is there any warning in rabbinic literature against eating mint. Halachic works and Talmud commentary were produced over many centuries in many geographic locations and in many climates. These insects were certainly present in many of those locations, yet the rabbis were silent.

R. Yosef Chaim’s mint was from the same geographic area as the Talmud and was likely the same or similar species.

\begin{flushright}
Shabb. 128a, 140a, Gittin 69b, Rashi ad loc, Rambam’s Mishna Commentary to Mishna Nidda 6:8, R’ Perachya ben Nissim Shabbat 140a. \\
\end{flushright}
Indiscernible Insects from Orchot Chayim to Kreisi U’Plaisi

There is an ambiguous statement in the work Orchot Chayim of R’ Aaron ha-Kohen of Lunel (13th-14th centuries) which reads as follows:

There is an ambiguous statement in the work Orchot Chayim of R’ Aaron ha-Kohen of Lunel (13th-14th centuries) which reads as follows:

אשאה שנמצאה הראיה בדיקתה שזרן אירן אסור פקידתạ כדי שתהא השכורה בדיקתה כדין. אחר שנמצא אשה בדיקתה חולק והא מדבר שלום תראה ליצירת התופעות וה谒וע_LTיסא אחר שנמצא טלאים אבל בו כיוצא או חומט כגון לעינים נראה היה דבר מ‘וה חלב בדיקתה. מדיקתן לאוכל מותר שליקתן אחר אלא נראין שאינן התולעים שבלליין מחיך עדעלנ שטראים רצוי אלא אחר שליקת מותר לאכל הפיכיים.

Loosely translated:

If, after a woman's produce inspection, a sheretz is found, it is forbidden to rely upon her future inspections (as in the case of the butcher whose deveining missed forbidden cheilev in Talmud Chullin 93b). This is only if the sheretz is of an insect species which is easily visible, such as the chomet (slug or caterpillar) or similar creatures; however, if the insect missed by the woman's inspection is from the species which move about within the leaves (leaf folds?) and are only discernable after the vegetables are boiled then we may continue to rely upon this woman's produce inspections.

The statement is cited verbatim in Shulchan Aruch (YD 84:11) with no explanation. This word chomet appears often in earlier rabbinic literature and has been consistently identified with the slug or snail.52 Orchot Chayim contrasts this forbidden creature which is visible (לעינים נראים) with insects which are initially invisible until after boiling (שליקתן לאא נראין שאינן התולעים). Did the Orchot Chayim consider the latter species permissible to eat or did he merely mean to say that they cannot invalidate the reliability of the individual's inspection? It can be argued that Orchot Chayim considered the initially invisible insects permitted as there is certainly no halachic requirement to cook leafy vegetables before consumption in order to find any hidden insects.

In deciphering the meaning of Orchot Chayim we may consider that both aphids and cabbage worms (which may appear on any cruciferous vegetables) change color and become more visible after parboiling.53 The

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51 Sefer Orchot Chayim, ed. M. Schlesinger, ‘Laws of Forbidden Foods,’ chapter 41. Berlin: 1901, pg. 309. The author cites this ruling from an earlier authority apparently none other than Rashba (see Maharshal's Yam ibel Shlomo Chullin, 3:100).


53 For broccoli worms see Insect-Free: A Guide to Home Vegetable Inspection, DVD by the Orthodox Union (2009), featuring Rabbi Yosef Eisen. The OU Guide (p. 19)
species of cabbage worms which were familiar to medieval halachists include *Pieris rapae* and *Pieris brassicae.* Their larval stages (תולעים) begin crawling when only several millimeters long but then grow to 30 mm and longer, becoming very noticeable caterpillars because of their size, distinctive colors, and the damage they cause to the leaves. Mature cabbage worms are most likely grouped with the *chomet* per *Orchat Chayim.* The “invisible prior to cooking” description fits better with aphids and young cabbage worms. I suggest that the author considers these insects permitted by halacha and rules that the checker cannot be faulted due to the insects’ small size and green color, despite their ability to be detected after heating. Such an interpretation can be inferred from the writings of 16th and 17th century *poskim.*

R’ Shlomo Luria (“Maharshal,” d. 1573) suggested that *Orchat Chayim* trusted women (until mishap occurred) for the inspection of leafy vegetables only because this is a non-arduous task—"בהר 찰יא בר אורה," in the words of R’ Shabbatai HaKohen (“Shach” d. 1662).56 (Maharshal himself opined that women were not dependable for more arduous kashrut inspections, such as removing infested beans.) If indiscernible insects were indeed forbidden, then inspecting leafy greens would surely not be considered a simple task.

R. Mordechai Yoffe (1530 -1612), however, appears to have diverged from the manner in which his contemporaries understood *Orchat Chayim.* Yoffe appended the words, "שאין זו פשיעה כל כך—because she was not very negligent,” to the *Shulchan Aruch*’s citation of *Orchat Chayim.*57 Yoffe’s use of the word “very” indicates that in his view the unnoticeable insects are indeed forbidden, and only the negligence is not severe. Yoffe permitted women to inspect these greens—and considered not noticing the indiscernible insects only “a minor negligence.”

Against this background, the alarmed admonition penned in the following century by R’ Yonathan Eybeschütz (Krakow 1690, Altona 1764) is most striking. In discussing the words of *Orchat Chayim* and *Maharshal,* Eybeschütz describes leaf inspection as such a laborious task that even some men cannot be trusted with its proper execution:58

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55 This point describes *Pieris brassicae* more than *P. rapae.*
56 *Shach* YD 84:35; in Luria, *ibid.* the exact wording is, "אפשר דמיירי מברכים שאמ ה"מ
שראת כ"ל יוחנן.
57 *Levush* YD 84:11.
58 *Kreisi U’Plaisi* 84: Kreisi 19.
From the language used by R' Eybeschütz it is apparent that he was concerned for pinhead-size thrips and aphids in his leafy salad. Cabbage worms and fruit flies often found in greens do not require "לבדוק פעמים ושלש עד שימצא להתולע — two or three inspections to detect. Their size and sharp color contrast make them easily spotted and removable. R' Eybeschütz’s tiny unnoticeable insects were likely identical to those referred to in Orchat Chayim. That which was permitted and only a minor issue even in previous centuries, in Eybeschütz’s 18th century worldview became a grave and serious matter. In an area of inspection where women in earlier times were trusted, now even men were barred. What caused R’ Eybeschütz to be more concerned over small insects than his predecessors?

Could this new halachic stringency have been influenced by the invention and publicity of the microscope and its marvels and the scientific studies of insect pests?

**Something Missing in the Shulchan Aruch**

A careful reading of the Shulchan Aruch Siman 84—the laws of worms—shows that the author hardly devotes a single section to the checking of leafy vegetables (with the possible exception of 84:11—previous section). In Orchat Chayim (203:2, 204:1, and 205:1), R’ Karo discusses the blessing made before eating berries, spice herbs, beet leaves, and cabbage, all of which are often infested with tiny insects. He forgets to warn the reader that these species need extra rinsing and inspection. Was the author not aware of aphids and thrips, or did he perhaps not care about their presence? It is difficult to claim that an infestation of aphids or thrips never occurred in his surroundings, as he was a man who lived in and traveled through wide geographic areas including Spain, Portugal, Turkey, Bulgaria, Egypt, and Eretz Yisroel. His Beit Yosef is a compendium of the works of all known earlier authorities. Could R’ Karo not find a single discussion and warning about the tiny aphids and thrips in common salad greens? Perhaps the answer is that R’ Yosef Karo (1488–1575) died before the microscope was invented and popularized (circa. 1590) and well before the field of entomology was developed.

Halacha Inspection Standards

What added to the halachic confusion was that aphids, thrips, and spider mites are indeed visible to the naked eye. Therefore, many rabbis thought that including these insects in the forbidden category was justified by stating that they are visible and could at the same time insist that the microscope does not change halacha.60

These tiny insects are indeed visible to the naked eye—however, only in good lighting and after careful scrutiny. However, the halacha does not require extra lighting and careful scrutiny. A cursory inspection is sufficient. Because they are not easily noticeable they are considered non-existent or battel. (For a more detailed halachic discussion see R’ Eitam Henkin’s Lechem Yehiyeh L’achla.61)

This original standard for checking produce is well in line with inspection standards from other areas of halacha. Commenting on the words of the Shulchan Aruch (O.C. 648:12) in regard to identifying a minute disqualifying discoloration on an esrog, Mishna Berura notes:

"ודוקא מפורצא לכל אוכל ואין נראת לעין מוחמת דקורז זורי לשעה ואין לשעה... משל"ל צפריר עין הסתכלות הפרוזים איני נראת או באחת ה跟不上 הם פסול...
ضارר ההזנה במבנה" (Mishna Berura 648:6)

R’ Kagin makes a similar comment in the laws of cracked letters of tefillin scrolls (Mishna Berura O.C. 32:122):

"אבל אם אין הפרדתם ניכר להדיא עד שמסרבלו כי אין זה פסול...矫正 האות מט(...)

Rabbi Moshe Feinstein wrote similarly in regard to our topic—small insects in greens:

61 A summary of the halachic reasoning for leniency by Rabbi Zev Weitman, Rav HaMachshir for Tnuva, is available on Tnuva’s website: זאב וייטמן. "כשרות ירקות או פירות המוחזקים ככאלה שיש בהם חרקים זעירים" תנובה <http://www.kashrut-tnuva.co.il/articles.php?actions=show&id=1111>. It has been argued that if one is disgusted by these tiny insects they are forbidden to him because of baal te’shaktzu. However, according to Shabb YD 84:3 baal te’shaktzu may not apply to aphids and thrips in salad greens: "և הוא מי ששם שוגר ירקון עליו. ...שלא י.swiftע." (Shabb YD 84:3)
Rishonim Analyzed

R' Asher ben Yechiel (Rosh 1250–1327) declared “milven” bugs in flour as forbidden:

ות דולים במלח ובקמח שקורים מילווי"ן würde לא אסורין אמא

What are “milven”? If Rosh refers to flour mites (Acarus siro) then he may disagree with the thesis of this article as these mites are a mere 0.33–0.43 millimeters long and not easily noticeable. Where there is a heavy infestation of flour mites, the surface they are on appears to be covered with a fine dust. However, must "מילווי"ן mean tiny Acarus siro? Could Rosh have referred to grain beetles, which are much larger and are made obvious by their color contrast?

Interestingly, R' Yoel Sirkis (1561 to 1640) wrote exactly this in his Bayit Chadash:

R' Sirkis understood that the Rosh referred only to large clearly visible insects, not the tiny Acarus siro. Sirkis in

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discusses these "מילווי"ן and it is clear that he refers to the “pinhead size” Acarus siro. In the small size of Acarus siro, it does not necessarily refer to Acarus siro—tiny flour mites; the same term could be used for larger pests as well. Though some later acharonim use this term for the tiny flour mite (see Turei Zahov YD 84:17 on raisin mites), it does not

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I do not know what kind of insect can live in salt.


64 See the Star-K's video of grain-beetle-infested flour <https://www.youtube.com/watch?v=FbzpB8W1vrs>. For flour weevils (or red flour beetle) see <https://www.youtube.com/watch?v=711Zwd9Kx-w>.


66 The words of Bach inform us about the language and terminology of the era:ן"מילווי does not necessarily refer to Acarus siro—tiny flour mites; the same term could be used for larger pests as well. Though some later acharonim use this term for the tiny flour mite (see Turei Zahov YD 84:17 on raisin mites), it does not
R’ Shlomo ben Aderet (Spain, 13th century):

גכ מה שאמרת בפולין ו☢️ן חזרות שבככמכ על ארמי ומברכ מתוקמ...
...

השוחה – הרוחש وهنا מד נוצר מתוקמ, שמקומ מישור רוחל ולא ברך הנה
מאמ רראה. כמוי פעמים חסני עמכים אילן מתוקמ מישור על הפרויר האצבע והנה
רוחש והולך. ולפיכך אנו מורגלין שבכל מקום שמשחיר בפולין נוטלים קצת
בעומק וזו היא בדיקתו והכשרו (שו”ת רשב”א חלק א תשובה ערה)

Though Rashba clearly forbade even tiny insects, two observations can be made:
a) Rashba was writing not about insects in lettuce and leafy vegetables, but rather about maggots in beans. While the maggot itself is very tiny, its presence is easily detected because of the black area it creates.
b) Only if "והולך נניחין על צפורן האצבע وهרו בלש
Rashba and his colleagues would refrain from eating the black spot only if they observed movement with their eyes. This is drastically different from what Moshe Vaye writes:

mean that the medieval authorities shared their view when they refer to a forbidden " פלח" bug. Bach himself surely disagrees with my suggested halachic conclusion, as he does not suggest that the miniscule size and indiscernibility of the mites is sufficient reason to allow them to be eaten. However, Sirkis (died 1640) was writing at the start of the microscope time period and arguably was impressed by the new microscopic world. R’ Sirkis’s Bayt Chadash series was published from 1631 to 1640. He writes in his introduction that he composed this work in his old age. His responsa were published posthumously and it is difficult to date them precisely.

R’ Yom-Tov Lipmann Heller (1579–1654) disagrees with Bach and shows that the rishonim including Rash, Rokeach, Agudah, and Hagot Shari Dura, who discussed wormy flour, made no distinction between microscopic bugs and larger ones. R’ Heller’s conclusion (shared by Taz 84:17) is that both sizes were forbidden by the medieval authorities. I suggest that the rishonim, who did not tell of tiny creatures seen only with difficulty, were discussing only beetles and weevils—readily visible creatures; they did not have flour mites in mind. Only in the era of improved lenses of the 17th and 18th centuries did poskim bring indiscernible pinhead-size insects into the halachic arena. I suggest that R’ Heller erroneously read his world “view” into earlier texts when he explained the reason Maharam ruled wormy flour was to be discarded:

Maharam probably had no such thing in mind. He forbade the flour because weevils are clearly visible and one can assume they were “poreish.”
The impact of the modern magnifying lens on contemporary halacha is clear. What Rashba would consider kosher many contemporary rabbis would not67

R’ Avraham ben David—a Possible Exception

Though not definite, it appears that this *rishon* is describing a small insect in produce. Classic Rabbinic Hebrew does not offer its user specific words for a wide variety of insect species. Words like ‘**זבוב**’ and ‘**תולעת**’ have vague broad meanings and could refer to either large or small insects. A medieval writer wishing to describe tiny insects in greens would conceivably use the word ‘**כינים**’, the Talmud’s word for lice, very small insects. Even if the **כינים** mentioned are aphids and thrips, R’ Avraham ben David’s view can be seen as an exception and minority view amongst the *rishonim* and Chazal. As explained earlier, aphids and thrips are visible to the naked eye upon scrutiny, so a pre–Scientific Revolution author could have noticed them.

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67 R’ Menachem Meiri (Provence, 13th century) also discussed infestations in vegetables:

It is unlikely that Meiri referred to aphids and thrips, as he did not emphasize the small size of these *תולעים*. Furthermore, the verb ‘**לנקר**’ implies digging and chiseling as in **במדבר טז:יד** לא נעה העיני האנשים ההם תנקר יקרו את מוחוכל ה… הרשעה. Aphids and thrips do not require “digging.” However, a very visible cabbage worm that bore through several layers of leaf may need to be “chiseled” after. *לנקר* can also mean “to clean” (see Jastrow. Marcus. *A Dictionary of the Targumim, Talmud Babli, Talmud Yerushalmi and Midrashic Literature*, New York, G.P. Putnam’s Sons, 1903, entry – *לנקר*, pg. 935), in which case little can be inferred from the usage of this verb.
Did the People Intensify Their Lettuce Preparation Routine?

There were **acharonim** who indicated that many Jews complied with the new strict approach of the rabbis of the early modern period and inspected each and every leaf carefully. The kabbalist R’ Alexander Ziskind of Grodno, Belarus (d. 1793), wrote in *Yesod VeShoresh HaAvodah*:

> ובכל הירקות וביחוד כרוב ... מצויים שם תולעים  גם בתולעים המצוי בבצלים

However, there are many more sources that tell that the general Jewish public in both Ashkenazic and Sefardic communities around the world did not change their old lenient habit of eating herbs and leafy vegetables with little or no prior inspection. Many responsa written about **bedikat tola’im** attest to this. Venetian rabbi Shmuel Abuhav (1610–1694) in his *Sefer HaZichronot* (published 1650) tells that much of Italy’s endives were infested with tiny insects and that — those who know pull their hands away.” Only those “in the know” refrained from eating these greens.

R’ Chaim Benveniste ([Peri Chadash](YD 84:34)) testifies:

> והמכשלת הזאת תחת המון עם

R’ Chaim Benveniste (Turkey, 1603–1673) in his *Knesset HaGedolah* (YD 84:52) wrote that in his local area the lettuce was heavily infested and demanded “thorough inspection because the insects are very narrow and small and are the color of the lettuce” (i.e. aphids). He adds “אף על פי כן, אינן נזהרים כראוי המ שתינה, והמכשלת הזאת תחת המון עם.

Mordechai ben Shmuel (b. 1715, Poland) in his *Shaar HaMelech* (published 1762) describes what he observed:

> אלא אף על פי כן, אינן נזהרים כראוי המ שתינה, והמכשלת הזאת תחת המון עם.

68  Ziskind, *ibid*.

69  There are reports that Jews of North African communities in recent history used a relaxed method in checking mint leaves (see Dadon, Kefir Barukh Mevorakh. *Nobeg Bam*, Jerusalem, 2005, p. 95; compare with Yosef, Yitzchak. *Kitzur Shulchan Aruch Yalkut Yanuf*, 2006 84:24, 39). It is not clear from these sources what the lenient inspection method was.


R’ Avraham Danzig (Vilna, 1748–1820) wrote regarding the newly raised concern over nematodes in vinegar:

R’ Eliezer Papo (Bulgaria, 1785–1828) in Pele Yoetz (chapter on bedikat tola’im) notes that many of the masses were not careful to check their produce.

Rabbi Daniel Terni (Florence, Italy, d. 1815):

Mordechai ben Shmuel, Shaar HaMelech 6:3. Grodno, 1816, pp. 125-126. Mordechai ben Shmuel proceeds to argue that in the era of previous generations produce was not infested. Only in his unfortunate generation (18th century), because of the sins of the people and the “decline of the generations,” did bugs appear. However, we know from poskim who lived a century earlier, such as R’ Chaim Benveniste, R’ Hezekiah da Silva, and R’ Shmuel Abuhav, that infestation was normal. Furthermore, as explained above, these small insects are an integral part of the ecosystem and certainly did not appear only in the 18th century. Additionally, rationalists like Maimonides rejected the notion that later generations are inferior to their predecessors. See Professor Menachem Kellner’s Maimonides on the “Decline of the Generations” and the Nature of Rabbinic Authority. SUNY, 1996.

Mordechai ben Shmuel: Binat Adam 35:38.
R’ Raphael Solomon Laniado (Aleppo, d. 1793):

במה שנהגו מקדם היו אוכלים עלי הגפנים בפני גדולי ישראל ולא היה מי שרפרף בדבר. ועתה בדקו היטב וראו שיש בהם תולעים דקים מאוד עד שהםとなっている. ואסרו את המכהן. ...ויתר ממקדם. (שו”ת, זהב של פאר ו”ד)

R’ Yechiel Epstein (Lithuania, 1829–1908):

עד בכל המדינות הידועים לנו בימי הקיץ הרחש מצוי בכל מיני מאכל ובין אלה המילבים הנקראים מילבי”ן מצויים הרבה בכל מיני קמח וברוב מיני גרו”ן שא”א להמלט מזה ובוודאי הזריזים מדקדקים בכל האפשר להמלט זהו, ועדיין כולם כי…”zikרא ב”י על שם עלייה מ”ה (ערוך השולחן יורה דעה סימן ב’ אות ס”ק)

R’ Moshe Feinstein (1895–1986)\(^\text{74}\) in a letter dated April 1985 wrote similarly:

\(^{74}\) I studied at the Mesivta Tifereth Jerusalem of the Lower East Side from 2011 through 2013 and earned semicha there under Rabbi David Feinstein. Rabbi Feinstein related to us that in Russia, where he is from, whatever green vegetables available were checked by briefly looking at them at normal reading distance with no sun or light box behind the leaf. (Rabbi David Feinstein was born in Lyuban, Russia, and came to the US at the age of eight.)

During one walk, the rabbi shared that in his view, an insect that is difficult to detect because it is the same color as the leaf it is resting upon is battul to the leaf. On several occasions, we brought R. David fresh dill and mint from China Town (without any prewashing or hashgacha) and asked him to inspect it for us. He held the herbs for a second, took a quick look, and pronounced it kosher.

Some readers may wonder how Rabbi Feinstein’s approach to bedikat tola’im harmonizes with the rabbis’ stringent opinion of the copepods in New York City water (see Yated Ne’eman, 29 Elul 5746, p. 19). I was troubled by this contradiction and asked the rabbi for clarity. I did not, however, understand his response.

Interestingly, I recently heard the following from a prominent Rosh Yeshiva at Yeshiva University (RIETS): “Rabbi Joseph Ber Soloveitchik stated that his mother only inspected greens cursorily. In the past, observant Jews were not inspecting their vegetables for tiny insects—only for the large clearly visible ones. Further inspection is unnecessary.” The Rosh Yeshiva, who heard this directly from the “Rav,” did not want to be cited by name because he deals only with the “theoretical—not the practical” and desires to stay out of controversy.
Conclusion

While nearly all acharim insisted that the findings of a microscope cannot change the halacha, they were subconsciously influenced by the new scope of life. Aphids and thrips came to the public attention from the nascent fields of entomology and the novel ideas about biological pest control. The steady awareness of a smaller lifeform prompted rabbis to inspect produce more carefully—whereupon the millennia-old world of aphids and thrips was revealed and stricter measures for checking produce were announced. These halachic writings made little impact on the time-hallowed household food-preparation practices of the general Jewish public. Leafy vegetables continued to be casually inspected as they probably have been since time immemorial: a two-second glance at arm’s length for fruit flies and worms with no special lighting or instruments. This mode of inspection is in line with parameters from other areas of halacha such as esrog-inspection guidelines. Only in the last several decades have many of the Jewish community begun to be stringent and perform careful inspections. Though there may be many factors that caused this new societal phenomenon, I suggest that it may be understood as part of a trend


76 Other suggested explanations include:
   a) DDT (dichlorodiphenyl-trichloroethane) was first used as an insecticide in the USA from 1945 until it was banned in 1972. In Israel, DDT was banned only in 1978. Because DDT and other insecticides were very potent, there were few insects to be found in produce during those years. When the strong pesticides ceased to be used, the insects reappeared. As several decades had elapsed since aphids and thrips were common in leafy vegetables, consumers did not remember that in old times no attention was given to these tiny insects’ presence.
   b) In his Marrorim (Tel Aviv, 2004), Dr. Zohar Amar argues that modern agricultural growing techniques give insects greater opportunity to reproduce. For example, greenhouses create an artificial warm insect-friendly environment year-round—thereby allowing aphids and thrips to multiply exponentially. Though many responsa cited in this article tell that infestations were common in earlier centuries, perhaps the occurrence has intensified in recent times, attracting more public attention.
   c) David Kraemer shows that these stringent bug-checking tendencies began in the mid-1980s at a time when Orthodox Judaism felt affronted by new trends in the Conservative movement (Kraemer, David C. Jewish Eating and Identity
in many sectors to abandon time-hallowed customs in preference for newly uncovered opinions in recent halachic texts. As Professor Haym Soloveitchik described it:77

The shift of authority to texts and their enshrinement as the sole source of authenticity have had far reaching effects. Not only has this shift contributed, as we have seen, to the policy of religious stringency and altered the nature of religious performance…

A religiosity rooted in texts is a religiosity transmitted in schools, which was hardly the case in the old and deeply settled communities of the past. There the school had been second by far to the home in the inculcation of values. 80


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