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Rabbi Bleich's most recent book is the newly published *Contemporary Halakbic Problems*, V.

Survey of Recent Halakbic Periodical Literature

NEW YORK CITY WATER

I. THE PROBLEM

The saga of what one magazine has termed the “Jewish Watergate” began in July, 2003. For a number of years an Israeli firm had been marketing Romaine lettuce and other produce certified as free of insect infestation. In the course of demonstrating proper methods of vegetable inspection an instructor at the Mashgiach Training Institute of Yeshiva Birkas Reuven discovered insects in the water used for washing lettuce.¹ Samples were subsequently sent to the firm marketing the produce. In due course a response was received indicating that the insect that had been identified was known to spawn in water rather than in vegetables. Hence, the problem was in the water used for cleansing the produce rather than in the vegetables themselves! That finding was rapidly confirmed by examining tap water in the locale in which the lettuce had been rinsed.²

The insects that were detected are tiny aquatic creatures, crustaceans called copepods which are millimeter-long zooplankton common both in the ocean and in ground water. These creatures have a thick body, long antennae and numerous legs.³ Since the water supply is treated with chlorine very few, if any, of the insects found in the water have been found to be alive. The color of these insects is whitish grey which renders them translucent and accounts for why they are not easily spotted. They are, however, visible to the naked eye without magnification.

New York City's Department of Environmental Protection has long been aware of the existence of these copepods. A manual published by that agency specifically states that “several aquatic species have been rec-

ognized as nuisance organisms in potable water supplies. Although these organisms are not considered public health risks, they are often the source of consumer complaints.”⁴ The gauge of most filters routinely affixed to kitchen faucets is probably too large to prevent the escape of such tiny organisms. However, filters with impressively low gauges, some as low as .05 microns, are readily available. Such low-gauge filters effectively eliminate the targeted organisms.

A number of prominent halakhic authorities have affixed their signatures to statements varying in terms of stridency but unequivocal in admonishing the public to filter water prior to use. The most significant of those is a ruling authored by R. David Feinstein bearing the endorsements of R. Joseph Shalom Eliashiv and R. Chaim Pinchas Scheinberg.⁵ That statement containing a succinct explanation of the grounds for the prohibition was reproduced and widely disseminated. Prominent among the signators of other statements are R. Feivel Cohen, author of *Badei ha-Shulhan*, and R. Yechezkel Roth, formerly the *dayyan* of the Satmar community in Borough Park.⁶ A comprehensive article authored by R. Chaim Oberlander discussing all factors involved in resolution of this issue, including a number of possible leniencies, is featured in vol. IX, no. 4 (Tammuz 5764) of *Or Yisra'el*, published in Monsey, N.Y. Additional articles by R. Shlomoh Gross, *dayyan* of the Belz community in Borough Park, and R. Yitzchak Bistritsky, a *dayyan* of the Satmar community in Borough Park, containing valuable information also appear in the same issue of *Or Yisra'el*.⁷

The general rule with regard to examination for the presence of insects is that examination is required in all instances in which infestation is common but that examination is not required in situations in which there are no grounds to suspect that infestation has occurred. Thus, for example, *Hokhmat Adam* 38:13, rules that, in Germany and France, all cherries, save for one species known as “sour cherries,” require examination but reports that in Danzig insect infestation of cherries is not common and hence examination is not required unless the presence of worms is indicated by pock marks on the skin. Plums, he reports, must be presumed to be infested in all countries with the exception of Lithuania where the plums are puny and insect-free. Certainly, the situation has changed significantly since the time of *Hokhmat Adam*, undoubtedly as a result of widespread spraying. Whether or not particular species of fruits and vegetables require examination depends upon the species and the locale.

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In some areas of Brooklyn, particularly in Borough Park and Flatbush, as well as in Washington Heights, copepods have been found in the drinking water. Where infestation has been demonstrated, filtration of the water is required. Where filtration is required, it is necessary not only for drinking-water but also water used in cooking, rinsing food, gargling and brushing teeth.⁸ However, even within those neighborhoods, in many locations no insects have been detected despite repeated examination.⁹ The Environmental Protection Agency is reported to have determined that infestation does not occur in the reservoir but at some point close to the point of discovery.¹⁰ There is, however, strong scientific evidence suggesting that the species of copepods found in New York water originate in the reservoirs rather than in localized water mains.¹¹ Nevertheless, in some buildings, copepods may fall to the bottom of the water tower or, for some unexplained reason, their movement may be impeded in some manner by the plumbing system. If so, it seems to this writer that, if upon multiple examinations it evident that the water in any particular building is insect-free, further examination is unnecessary. Examination is best carried out against a black background or, less optimally, by placing a cloth at the tap in order to catch the copepods as they emerge. Care should be taken that the tap be only partially opened in order to prevent dismemberment of the insects by the pressure of the water running through the cloth.

II. MINUSCULE INSECTS

The almost reflexive reaction of many people to reports of infestation of New York water by copepods was that the issue is hardly novel. Probably every person who has had the benefit of a freshman biology course has had the experience of placing a droplet of water on a slide and examining it under a microscope. The experience of viewing countless numbers of microorganisms is both thrilling and disconcerting: Thrilling because the microscope becomes a window opening upon the hidden mysteries of divine creation through which a tiny cross section of the myriad complexities of the natural order is revealed; disconcerting, at least to a Jew, because, mindful as he is of the biblical admonition “of all that creeps in the water and of all the living creatures that creep in the waters . . . you shall not eat of their flesh” (Leviticus 11:10-11), he becomes jarringly aware that with every sip of water he imbibes copious quantities of such creeping things.

In a nutshell, the problem and its resolution requires a determination of whether, in seeking to abide by the commandments of the Torah, a Jew must be concerned with subvisual phenomena or only with that which is detectable upon gross observation. The question is by no means limited to establishment of the parameters of the dietary code. A quite similar issue arises, *inter alia*, with regard to the validity of a Torah scroll. A severed or disconnected letter disqualifies the entire scroll. But even with, relatively speaking, moderate magnification, what appear to be vast chasms of open space can be seen in the structure of the letters of every Torah scroll. The discharge of even a minute quantity of menstrual blood renders a woman a *niddah*. What is the status of a woman if the discharge is too slight to be seen by the naked eye but can be readily perceived upon magnification? More recently, the selfsame issue has arisen with regard to the status of a fertilized ovum that is as yet invisible to the naked eye.¹² The resolution of that question may impact upon the propriety of utilizing the “morning-after pill” for termination of pregnancy and upon the permissibility of destroying a fertilized ovum at the very earliest stages of cell division.¹³

The earliest discussion of halakhic implications of subvisual phenomena is that of R. Israel Lipshutz in his commentary on the Mishnah, *Tiferet Yisra'el, Avodah Zarah, Bo'az 2:3*. *Tiferet Yisra'el* reports that some fifty or sixty years earlier a prominent rabbinic authority ruled that a fish, theretofore presumed to be non-kosher because it lacked scales, was indeed kosher. That authority issued his ruling subsequent to examining the skin of the fish with a “microscope” (*sic*: probably a magnifying glass) and discovering scales. In that instance, magnification was utilized to permit that which otherwise would be regarded as forbidden rather than to forbid the otherwise permissible. *Tiferet Yisra'el* peremptorily dismisses that view on the grounds that the Gemara, *Niddah* 51b, categorizes the scales that are the hallmark of kosher species as being in the nature of a “garment” (*levush*). *Tiferet Yisra'el* asserts that each of the miniscule scales of the species in question is “no more than a tiny dot which the eye cannot perceive.” Accordingly, he concludes that such scales “certainly cannot be categorized as a garment” and hence the species must be regarded as non-kosher. *Tiferet Yisra'el* bases his position entirely upon the idiosyncratic halakhic definition of a “scale” rather than upon a global assertion that Halakhah takes no cognizance of subclinical phenomena.¹⁴

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Later, in discussing a somewhat different matter, R. Shlomoh Kluger, *Teshuvot Tuv Ta'am va-Da'at, Mahadura Tinyana, kuntres aharon*, no. 53, comments upon the method commonly employed in examining the lungs of an animal subsequent to slaughter. Whenever an adhesion is found, a possibility exists that it occurred because of a perforation in the underlying pulmonary tissue. Therefore, the adhesion is peeled away and the lung is blown up in order to examine for the presence of a lesion. The practice, as described by R. Shlomoh Kluger, involves placing water or saliva upon the exposed site of the adhesion and then looking for bubbling caused by escaping air which, in turn, is evidence of the presence of a miniscule hole. That examination is not unlike the procedure commonly employed by an automobile repairman seeking to locate the site of a puncture that has caused a flat tire. *Tuv Ta'am va-Da'at* dismisses as absurd his own suggestion that a magnifying glass might be used to search for a perforation visually and to substitute that procedure for the usual mode of examination. In context, *Tuv Ta'am va-Da'at* dismisses magnification as an unacceptable means of examination. More to the point is the fact that magnification of a sufficiently high power will always disclose the presence of holes with the result that, if cognizance must be taken of that phenomenon, no animal is kosher!

The classic and most frequently quoted source with regard to the issue of microscopic organisms is the comment of R. Yechiel Michal Epstein, *Arukh ha-Shulhan, Yoreh De'ah 84:36. Arukh ha-Shulhan* writes:

I have heard that every drop of water, and particularly of rainwater, is full of miniscule creatures that the eye cannot see. In my youth, I heard from a person who had been in distance places and saw in water, by means of a lens of exceedingly great magnification, [i.e., that magnifies] tens of thousands of times, many species of creatures.

In light of this, how may we drink water . . . ? Indeed, the truth is that the Torah did not forbid that which the eye cannot perceive, for the Torah was not given to angels. For, if not so, many scientists have written that the entire atmosphere is also full of extremely miniscule creatures and that when a person opens his mouth he swallows a number of them . . . Even if this is so, since the eye cannot perceive them, it is of no significance. However, that which the eye can see, even [if only] against the sun and even if it is the tiniest of the tiny, is a veritable insect.¹⁵

Without explicitly citing the earlier comments of *Tiferet Yisra'el*, *Arukh ha-Shulhan* declares the converse to be true as well, i.e., when visual perception is required to satisfy any halakhic requirement, artificial magnification is of no avail. Thus, *Arukh ha-Shulhan*, *Yoreh De'ah* 83:15, writes:

And know that it is clear that, with regard to a matter that requires visual perception, it is of no avail if one sees by means of a lens that magnifies visual perception; rather, one must see by means of the eye itself. Such is the case with regard to matters in the whole Torah in its entirety with regard to that which requires visual perception.

As noted earlier, the requirement that scales must be visually perceivable for an aquatic species to be regarded as kosher is, according to *Tiferet Yisra'el*, quite independent of the general question of the status of subvisual phenomena. However, the general rule formulated by *Arukh ha-Shulhan* seems to be a matter of dispute. The rule with regard to Torah scrolls, *tefillin* and *mezuzot* is that no letter may extend to the edge of the parchment; some blank space must remain as a margin on each side of the letter. Is the letter validly written if examination with a magnifying glass reveals that there is indeed empty space in the margin even though the blank space is not manifestly evident to the naked eye? R. Moshe Sternbuch, *Mo'adim u-Zemanim*, II, no. 124, cites the late *Tchebiner Rav*, R. Berish Weidenfeld, as ruling that a scroll written in such a manner is invalid. That ruling is entirely consistent with the position of *Arukh ha-Shulhan*. However, *Mo'adim u-Zemanim* also cites R. Zev Mintzberg as disputing that view in ruling that it is sufficient that a blank margin be discernible upon magnification. Rabbi Mintzberg's view is recorded in his responsa collection, *She'erit Yisra'el*, no. 11.¹⁶

Somewhat surprisingly, *Mo'adim u-Zemanim* proceeds to discuss the status of an *etrog* in which a very small piece of the flesh is missing and to relate that issue to this dispute. As recorded in *Shulhan Arukh*, *Orah Hayyim* 648:2, at least optimally, the *etrog* should be whole. What is the status of an *etrog* in which the hole can be seen only with a magnifying glass? *Mo'adim u-Zemanim* asserts that the status of such an *etrog* is contingent upon resolution of the controversy between the *Tchebiner Rav* and Rabbi Mintzberg.

To the mind of this writer, that conclusion is unwarranted. The position of *Arukh ha-Shulhan* and the *Tchebiner Rav* is readily grasped: The requirements of the Torah are to be understood as determinable

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under ordinary circumstances. The “creeping” organisms interdicted by Scripture are defined as creatures that would have been perceived as “creeping” at the time of revelation at Mount Sinai. “*Ein ha-Kadosh barukh Hu ba be-teruniyah im beriyotav*—The Holy One, blessed be He, does not act despotically with His creatures.” (*Avodah Zarah* 3a), i.e., at Sinai, the Deity did not establish requirements that they could not possibly meet. The Torah was given to humans, not to angels (*Berakhot* 25b; *Yoma* 30a; *Kiddushin* 54a; and *Me’ilah* 14b). Hence, perforce, the connotation of a “creeping” organism, for example, must be limited to creatures that could have been identified at that time by use of conventional modes of observation. Conversely, according to *Arukh ha-Shulhan*, if God stipulated blank margins for Torah scrolls, *tefillin* and *mezuzot*, the term “*mukaf gevil*” (surrounded by a margin) must have been understood as a visually perceivable margin and hence that must have been—and must remain—the meaning of the term.

Rabbi Mintzberg’s position is equally comprehensible. As has been noted earlier, the Gemara declares that “the Torah was not given to ministering angels.” Hence microscopic organisms could not have been banned at Mount Sinai. The Torah also requires that scrolls have margins. Of course, at Sinai, a scribe upon completing the writing of such a scroll could not have been certain that a margin existed unless he could have seen the empty space with his naked eye. For much the same reason, a person intent upon fulfilling the *mizvah* of eating *mazah*, which requires him to eat a quantity of *mazah* equal to a *ke-zayit* (an olive) would perforce have to eat a bit more than a *ke-zayit* since absolutely precise measurements are beyond human capacity. That, however, does not imply that the Torah insists that sufficient space be left so that it may be perceived by the naked eye any more so than that the Torah insists that a person eat a bit more than a *ke-zayit* of *mazah*. That which is added for reasons of doubt is not intrinsic to the *mizvah* itself. A person informed by the Holy Spirit that he has consumed a *ke-zayit* of *mazah* need eat no more. Similarly, according to Rabbi Mintzberg, a scribe informed by the Holy Spirit—or by a magnifying glass—that a margin does exist may declare the scroll to be valid.

The question of the suitability of an *etrog* in which a tiny portion has been eroded involves an entirely different issue. Resolution of that question depends upon the definition of the term “missing” (*haser*). Presumably, all would agree that, if it is only angels who realize that a tiny fragment is missing, the *etrog* may be used without hesitation for purposes of fulfilling the *mizvah*. Hence all would agree that “*haser*”

must be defined as that which normal human beings, using methods of examination naturally available to them, would perceive as being *haser*. If so, a microscopic erosion, by virtue of halakhic definition, does not render the *etrog* a *haser*.¹⁷

The principle enunciated by *Arukh ha-Shulhan* is readily traceable to the Mishnah, *Nega'im* 4:4. The various forms of *zara'at* described in Leviticus 13 cause defilement only if the manifestation covers the area of a *gris*, usually assumed to be approximately the size of a dime. The Mishnah, *Nega'im* 4:4, states that an afflicted area the size of a *gris* causes defilement even if a hair is encompassed in that area. The hair certainly occupies space and hence the tiny opening through which the hair invades the *zara'at* and displaces the skin cannot itself constitute a site manifesting a symptom of *zara'at*. Nevertheless, the Mishnah declares, "We are not concerned that the space of the black hair may have diminished the *baheret* (one of the forms of *zara'at*) for [the hair] is devoid of substance." Rambam, in his *Commentary on the Mishnah, ad locum*, interprets that comment as meaning that "the size of the hole from which the hair emerges is extremely miniscule and lacks *perceivable* [emphasis added] size that would diminish the size [of the *baheret*]."

However, the ruling of the Mishnah with regard to *zara'at* does not really serve to establish a precedent for *Arukh ha-Shulhan's* thesis. Determining the criteria of what constitutes *zara'at* is distinguishable from other aspects of Jewish law in that Scripture explicitly provides that the determination is to be made "entirely in accordance with the sight of the eyes of the priest" (Leviticus 13:12). The determination of impurity by reason of *zara'at* is thus made expressly contingent upon subjective appearance "in the eyes of the priest" rather than upon objective reality.

The basic principle of Jewish law formulated by *Arukh ha-Shulhan* has a parallel in the Roman law maxim "*De minimis non curat lex*—The law takes no cognizance of a trifle." However, the trifle that Jewish law declines to recognize is considerably more trivial than that to which Roman law refers. In fact, it is so trivial as to be, literally, non-perceivable.

One caveat must be added. Assuming that terms employed by Scripture in describing physical entities must be understood as entities perceivable at the time of Revelation, it does not follow that any particular present-day subclinical phenomenon was also subclinical at the time of the giving of the Torah at Mount Sinai. In a note published in R. Yechiel Michal Tucatzinsky's *Bein ha-Shemashot* (Jerusalem, 5689), p. 153, and frequently cited in rabbinic discussions of this topic, R. Iser

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Zalman Meltzer suggests that human eyesight was far more keen in ancient times than at present. The Mishnah, *Bekhorot* 54b, states that even in open places animals may be regarded as members of a single group for purposes of tithing so long as the animals are all present within a limited, specified area. As Rashi explains the Mishnah, that area is defined as the area in which the animals can pasture under the supervision of a single shepherd. That, in turn, is defined by the Mishnah as an area having a radius of sixteen *mil*. The Gemara explains that the key to establishing the determination of that radius is the ability of a single shepherd to see, and hence to safeguard, the entire group of animals. As expressed by the Gemara, *ad locum*: “The Sages determined that the eye of a shepherd can master sixteen *mil*.” There are various conflicting opinions among rabbinic decisors with regard to the definition of a *mil*.¹⁸ According to the most widely accepted views, calculations of the distance of a *mil* vary from between 960 meters (3,149.60 feet)¹⁹ to approximately 1,160 meters (3,805.77 feet).²⁰ Rabbi Meltzer observes that it is quite impossible for a person to see objects at such a great distance.²¹ Accordingly, he concludes that, over the ages, our sense of sight has become dulled.²² Rabbi Meltzer attributes that phenomenon to widespread reliance upon artificial illumination which, he opines, has caused natural eyesight partially to atrophy. In support of that opinion he comments, “We know that, even today, the Bedouin who do not use our lamps can see very far.”

Thus it is certainly arguable that the organisms denoted by Leviticus 11:10-11 are those that were perceivable at the time the commandment was announced and that those organisms remain forbidden even if, in our age, they are no longer visible to the naked eye. However, this is not to say that microscopic organisms are forbidden. Even the shepherd of antiquity did not enjoy omnivision; after all, he could see only a distance of sixteen *mil*. Since that time there has been, at worst, only limited optical degeneration. Perhaps in antiquity the average man possessing eyesight of the quality common among his peers could see with his naked eye even that which is visible to us only upon two, three or even ten power magnification. Consequently, organisms that are but marginally subvisual may well be forbidden but those that can be seen only with a microscope rather than with a magnifying glass could not conceivably be within the ambit of the prohibition.

Arukh ha-Shulhan's position with regard to minute organisms is amplified by R. Samuel ha-Levi Wosznar, *Teshuvot Shevet ha-Levi*, VII, no. 122. *Shevet ha-Levi* addresses the problem of insects that are visible

to the naked eye but which, upon gross examination, can be seen only as specks or back dots and hence are not recognizable as insects. Since they cannot be recognized as insects by the naked eye due to lack of perceivable limbs, antennae or other discernible body parts, *Shevet ha-Levi* regards them as permissible.

An obvious objection to that view is the ruling of Rema, *Yoreh De'ah* 84:6, with regard to fruit in which a “black dot” is evident. Rema rules that it is forbidden to eat such fruit without first removing the infested portion because the black dot “is the place from which the worm begins to develop . . . and is forbidden just as the worm itself [is forbidden]. (The “black dot” is certainly not perceivable as an organism but it is nevertheless prohibited by Rema. *Shevet ha-Levi* counters that objection by asserting that the organisms or larvae described by Rema will eventually develop into macroorganisms and for that reason they are forbidden even in earlier stages of development. Thus the “black dots” described by Rema are distinguishable from microorganisms that will never become visibly discernible. Basing himself upon *Teshuvot ha-Rashba*, no. 275, *Shevet ha-Levi* also acknowledges that, if the organism can be perceived, or will at any time be perceived, as propelling itself, such locomotion, in and of itself, serves to establish its identity as a forbidden creature.

However, R. Moshe Viya, *Bedikat ha-Mazon ke-Halakhah*, I (Jerusalem, 5758) 2:4, reports that the late R. Shlomoh Zalman Auerbach ruled that organisms that are visible but which are not perceivable as “creeping things” are forbidden. A somewhat different version of Rabbi Auerbach’s position is reported by R. Joshua Neuwirth, *Shemirat Shabbat ke-Hilkhatah*, I, 2nd edition (Jerusalem, 5739) 3:37, note 105. Rabbi Neuwirth relates that Rabbi Auerbach originally opined that an organism that can never be perceived as living or mobile cannot be regarded as a “creeping thing that creeps upon the earth” (Leviticus 11:41). However, Rabbi Auerbach later recounted that he heard from persons close to the *Hazon Ish* that the latter considered such organisms to be forbidden. In point of fact, *Hazon Ish*, *Yoreh De'ah* 14:6, s.v. *veshi'ur*, writes explicitly: “[Even] if the eye does not recognize it because of its small size, if it is yet whole it does not become nullified by virtue of rabbinic decree because of the law of *berayah*.”²³ *Hazon Ish* clearly maintains that even organisms that cannot be identified as insects are forbidden.²⁴ R. Joseph Shalom Eliashiv is also quoted in *Bedikat ha-Mazon ke-Halakhah*, I, 2:4, note 4, as ruling that all such creatures are forbidden even if they cannot immediately be identified as insects.

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In point of fact this issue has no bearing upon the problem of New York City water for the simple reason that many of the copepods in question are clearly recognizable as insects.²⁵

III. PERMITTED INSECTS

A. INSECTS SPAWNED IN STAGNANT WATER

As formulated in Leviticus 11:10, the prohibition against forbidden aquatic creatures reads: “And all that do not have fins and scales in the seas and in the rivers, of all that creep in the waters and of all living creatures that are in the water, they are detestable unto you.” The Gemara, *Hullin* 66b, declares that the requirement that aquatic creatures have fins and scales as a condition of dietary acceptability is limited to those that spawn in “the seas and in the rivers” and hence creatures that spawn in stagnant pits or utensils are permissible. The Gemara, *Hullin* 67a, qualifies that exclusion in indicating that creatures that spawn in utensils are permissible only so long as they remain in their aquatic element. Upon emerging, or upon being removed, from water they acquire the forbidden status of “creeping things that creep upon the earth” (Leviticus 11:29) and remain prohibited even if they return to the water from which they emerged. Thus, insects that spawn in stagnant water collected in stationary cisterns or the like are not forbidden unless they become separated from the water that is their natural habitat.

Although the status of reservoirs themselves in this regard is a matter of some controversy,²⁶ bugs found in water that is collected in a pit or the like, but in situations in which the water originates in a river or stream, cannot *ipso facto* be presumed to be permissible. The status of such organisms is perforce the subject of doubt: Did the insects originate in the free-flowing source and hence they are forbidden or did they spawn in stagnant water subsequent to entering the reservoir? *Darkei Teshuvah* 84:5 rules that such insects are forbidden because of their doubtful status.²⁷

Moreover, as recorded by Rambam, *Hilkhot Ma'akhalot Assurot* 2:18, and *Shulhan Arukh, Yoreh De'ah* 84:2, this exclusion from the prohibition is limited to creatures that spawn in stationary bodies of water. According to those authorities, creatures that spawn in water that flows from a stationary collection of water are forbidden because all flowing water is encompassed within the category of “rivers.”²⁸

To be sure, as indicated by *Darkei Teshuvah* 84:30, bugs found in water flowing from a cistern through a pipe are indeed permissible since such insects have not emerged from a utensil. Accordingly, insects that spawn in the pipes that form the distribution system would appear to be permissible. However, such insects may be permissible only if the pipe is not attached to the ground. *Darkei Teshuvah, loc. cit.*, suggests that a pipe attached to the ground loses its status as a utensil and becomes an integral part of the earth to which it is attached or in which it is implanted. Accordingly, insects that spawn in such pipes, or in an aqueduct, are in the category, not of “creeping things that creep in the water,” but of the entirely distinct category of “creeping things that creep on the ground.” Creatures that do not spawn in flowing water or in utensils are creatures that “creep on the ground” and hence are forbidden despite the fact that they spawn in a liquid medium.

Furthermore, and perhaps most significantly, upon recording the permissibility of ingesting insects found in stagnant water, *Shulhan Arukh, Yoreh De'ah* 84:1, carefully adds, “therefore one may *bend* and drink from them.” Rema appends the explicit comment that it is forbidden to draw water in a utensil in order to drink the water drawn in such manner. As explained by *Shakh* and *Taz, ad locum*, when a utensil is used for drawing water there is a distinct possibility that the insect may attach itself to the wall of the utensil. Insects that spawn in utensils are permissible only so long as they do not emerge from their aquatic habitat. Upon attaching themselves to the wall of the utensil (for some authorities only if the insect precedes the flow of water but for other authorities even if the insect rises from the water in the utensil to the dry portion of the utensil) the insect becomes prohibited and remains so even upon its return to an aquatic environment.

Kisei Eliyahu, Yoreh De'ah, 84:1, cited by *Darkei Teshuvah* 84:9, suggests that, in actuality, the problem associated with water drawn in a utensil is a matter of practical concern only with regard to relatively large insects. *Kisei Eliyahu* suggests that extremely small, barely perceivable insects, once they have emerged from the water, are not capable of returning. Nevertheless *Kisei Eliyahu* urges that one not drink water infested even with miniscule organisms without prior straining.

In contradistinction to the understanding of *Shakh* and *Taz, Darkei Teshuvah* 84:13 cites *Pri Tobar* 84:1 who, basing himself upon *Issur ve-Hetter*, rules that it is permissible only to *bend* and drink water but that otherwise the insects, once they are removed from their original habitat even if only by means of a utensil, are forbidden. Thus, according to

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Darkei Teshuvah, if insects are present in the water, they become forbidden immediately upon being drawn into a glass or a pot.

B. INSECTS PRODUCED BY SPONTANEOUS GENERATION

Hazon Ish, *Yoreh De'ah* 14:10, advances a further consideration that would serve effectively to prohibit imbibing any organism that spawns in reservoirs. *Hazon Ish* assumes that the exclusion of organisms spawned in stagnant water from the prohibition concerning “creeping things” is based upon the rationale that they are not the product of sexual reproduction but are generated by the “hylic power” of the water. Otherwise, contends *Hazon Ish*, they should be forbidden, if not by virtue of their own identity, then by virtue of the fact that they are the “*yozei*” or emission of a non-kosher entity and the applicable principle is that any food product that “emerges” from a non-kosher organism is, *ipso facto*, non-kosher regardless of its own characteristics.²⁹ By way of comparison, *Hazon Ish* points out that a fish hatched in stagnant water from an egg laid by a non-kosher mother is certainly non-kosher.³⁰

Hazon Ish's position has implications beyond his actual statement. *Hazon Ish* appears to address only the issue of the status of an organism produced by progenitors who were themselves spawned in naturally flowing bodies of water. However, if his underlying position is taken literally, *viz.*, that only aquatic organisms arising in stagnant water *sui generis* are exempt from the requirement of fins and scales, organisms that may be so categorized may well constitute a null class.

The Gemara, *Shabbat* 107b, declares that *kinim*, generally identified as lice, may be exterminated on *Shabbat* with impunity since they do not reproduce sexually. The implication is that lice are the product of spontaneous generation. However, since the time of Pasteur, science has rejected the notion of spontaneous generation and insists that no living organisms are reproduced asexually. That perception obviously has implications with regard to the halakhic status of *kinim*.³¹ Some scholars have taken the position that scientific reports based upon the clinical observations of researchers are unreliable and hence the Halakhah does not change.³² Alternatively, it is possible to acknowledge the reliability of the scientific evidence but to recognize that the categorical proposition that no organisms can arise *sui generis* is an inductive generalization which may admit of exceptions and hence may not be universally correct. It may also be maintained that presently extant lice are not identical with those catego-

rized in this manner by the Gemara and that the *kinim* described by the Gemara no longer exist.³³

At least one scholar, R. Isaac Lampronti, *Pahad Yizhak, erekh zeidah*, accepts the scientific finding negating spontaneous generation and pursues it to its logical conclusion. *Pahad Yizhak* asserts that there is no specific Oral Law tradition with regard to *kinim* as a particular species. *Pahad Yizhak* insists that the principle announced by the Sages is entirely correct in theory but that, empirically, the class of organisms that reproduce spontaneously may be a null class. He points to another talmudic discussion recorded in the Gemara, *Pesahim* 94b, involving a scientific disagreement between the Sages and the “wise men of the nations of the world” in which the Gemara reports that R. Judah the Prince conceded that the “wise men” were correct and that the Sages had erred.³⁴ Accordingly, he concludes that, in light of present-day scientific knowledge, killing lice on *Shabbat* must be regarded as a capital offense.

If any one of these methods of reconciling the Gemara’s position with regard to *kinim* and scientific theory is accepted and is coupled with the view expressed by *Hazon Ish* regarding the rationale underlying the exclusion from the requirement of fins and scales of organisms spawned in stagnant water, it follows that the provision of law formulated in *Hullin* 66b permitting such insects is a dead letter and that no such organism is permitted.

This writer has long contended that the halakhic principle enunciated by the Gemara with regard to lice is not intended as a literal statement with regard to reproduction. Rather, it is but another manifestation of the principle that Halakhah is predicated upon gross phenomena. As noted earlier, halakhic authorities have uniformly recognized that dietary restrictions do not apply to the imbibing of subvisual creatures. It is similarly arguable that references to regulations applicable solely to species that engage in sexual reproduction are intended as references to *perceivable* sexual reproduction; hence sexual reproduction that is not perceived as such is treated by Halakhah as if it occurred spontaneously. Put somewhat differently, Halakhah is not based upon ontological reality but upon phenomenological perception.³⁵

R. Meir Simchah ha-Kohen of Dvinsk, *Meshekh Hokhmah, Parashat Bo*, cites R. Elijah of Vilna who maintains that the reasons or considerations advanced by the Sages in explanation of the various ordinances that they promulgated are not exhaustive in nature; rather, for reasons best known to themselves, they frequently reserved other considerations *in pectore*. In actuality, that position was formulated much earlier during

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the Ge'onic period in a responsum of Rav Ha'i Ga'on as recorded in *Teshuvot ha-Ge'onim*, ed. *Mekizei Nirdamim* (Lych 5683-5684), no. 1.

In a comment published in R. Eliyahu Dessler's *Mikhtav me-Eliyahu*, IV, 355, note 4, the editor reports that Rabbi Dessler resolved the problem concerning *kinim* in a similar fashion: The halakhic ruling was transmitted to the Sages as a tradition received at Sinai and, although they endeavored to present a reasoned basis for that tradition, the rationale they advanced was neither exhaustive nor necessarily accurate. In his words:

The explanation does not determine the law. Rather the opposite: the law determines the explanation and the reason mentioned in the Gemara is not the sole possible reason with regard to the matter and if, at times, they presented reasons that are in accordance with the knowledge of nature of their day it is our obligation to seek other explanations in accordance with the knowledge of nature of our day by means of which the law will remain steadfast in its place.

. . . But even if a proper reason is not found, we believe with perfect faith that the law is a true law and we hope to God that He will enlighten our eyes to find an appropriate explanation.³⁶

If either of these theses is correct—or if the stance that science is simply wrong is adopted—the Halakhah with regard to exterminating *kinim* on *Shabbat* as well as the Halakhah regarding creatures spawned in stagnant water remains unchanged.

IV. BITTUL (NULLIFICATION)

Infested water might nevertheless be permissible were the principle of *bittul* applicable, i.e., nullification by means of adulteration in a permitted substance sixty times as great. However, despite the minuscule size of the copepods that may be present in tap water, they do not become nullified by virtue of the relatively copious quantity of water in which they are found. The most obvious consideration rendering the principle of nullification inoperative is the fact that even a tiny insect is, by definition, a “creature” or *beriyah* (but among talmudists commonly vocalized as “*beriyab*”) that is not subject to nullification.³⁷ A second consideration rendering nullification inoperative is the fact that nullification occurs when the identity of the prohibited substance is lost by virtue of the fact that its identity becomes submerged in that of the overwhelm-

ingly larger substance.³⁸ Hence, in circumstances in which the forbidden substance remains recognizable despite adulteration, it has certainly not lost its identity and hence is not subject to nullification.³⁹ R. Moshe Viya, *Bedikat ha-Mazon ke-Halakhah*, I (Jerusalem, 5758), p. 142, note 12, cites R. Joseph Shalom Eliashev, R. Nissim Karelitz, R. Samuel ha-Levi Woszner and R. Ben-Zion Abba Shaul as maintaining that a forbidden substance that can be discerned only with “great effort” (*torah gadol*) is not regarded as “perceivable” (*nikar*) and hence is subject to nullification provided that it is not a *beryah*.⁴⁰ That point is also made by R. Shlomoh Zalman Auerbach in a responsum published in that volume, pp. 178-179.

R. Chaim Oberlander seems to suggest that even if it is assumed that extremely tiny insects are subject to nullification because they can be recognized only with “great effort” they may nevertheless not be subject to nullification for an entirely different reason. Rema, *Yoreh De’ah* 98:4, rules that if a small quantity of milk falls into a large pot containing a meat product the milk is not automatically nullified. Rather, cold water must be poured into the pot. The cold water will cause the milk to rise so that it may be skimmed from the top. The reason nullification of the milk does not occur is that the food is a “*davar she-yesh lo matirin*,” i.e., the principle of nullification applies only if the food cannot otherwise be eaten in a permissible manner. Since cold water will cause the milk to rise, the remaining food may be eaten in an entirely permissible manner. However, rules R. Jonathan Eibeschutz, *Kereti u-Peleti*, *Peleti* 98:61, in a situation in which food would become spoiled in the process of being mixed with cold water and thereby become inedible, the usual principle of nullification would apply. *Kereti*, however, apparently accepts the basic principle that prohibited substances that can be recognized only upon exertion of effort do become nullified.

However, *Pri Megadim*, *Mishbezot Zahav* 98:7, advances an entirely different explanation for Rema’s ruling. *Pri Megadim* explains that, in the circumstances described, the milk is regarded as “recognizable” since it can be rendered visually perceivable by adding cold water. In effect, *Pri Megadim* posits that even a merely potentially recognizable entity is considered to be “recognizable.”⁴¹

It is, however, not at all clear that *Kereti* accepts the notion that nullification occurs when the prohibited substance can be recognized only with “great effort.” The situation involving milk falling into a pot of meat is readily distinguishable from instances in which small particles of a forbidden substance became mingled with a much greater quantity

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of a permitted foodstuff. In the former case the milk is presently not at all recognizable; unless and until cold water is added to the mixture it is impossible to detect the presence of milk. In the latter case, the exceedingly small forbidden entities can presently be detected, albeit only with great effort, upon meticulous sifting and scrutiny. The milk may be subject to nullification since it is presently entirely undetectable whereas the minute but detectable particles may not be subject to nullification.⁴² Indeed, R. Jonathan Eibschutz himself, *Peleti* 84:19, rules that a forbidden substance, when recognizable, is not subject to nullification even if it can be recognized only upon exertion of great effort. That is also the view of *Pri Megadim*, *Yoreh De'ah*, *Sifte'i Da'at* 84:35 and *Hazon Ish*, *Yoreh De'ah* 14:6.⁴³

However, R. Menachem Mendel Schneersohn, *Teshuvot Zemah Zedek*, *Yoreh De'ah*, no. 70, asserts that a forbidden substance that can be recognized only upon “great effort” does become nullified. That is apparently also the position of *Arukh ha-Shulhan*, *Yoreh De'ah* 100:7. Rabbi Viya, *Bedikat ha-Mazon ke-Hilkhatah*, I, 7: introd., note 1, states that a similar conclusion can be inferred from the discussions of *Teshuvot ha-Rashba*, I, no. 259 and R. Chaim Halberstam, *Teshuvot Divrei Hayyim*, II, *Yoreh De'ah*, no. 54.

Even more akin to the case at hand is the ruling of *Issur ve-Hetter* 32:9, cited by *Darkei Moshel*, *Yoreh De'ah* 104:1, to the effect that a prohibited substance that falls into a liquid but which can be removed by straining is not subject to nullification. Copepods can readily be eliminated from the tap water by means of filtration.

V. BOILED WATER AND COOKED FOOD

There are, however, circumstances in which *bittul*, or nullification, may be applicable. With regard to fruit that requires examination for possible insect infestation, *Shulhan Arukh*, *Yoreh De'ah* 84:9, rules that, if the unexamined fruit has been cooked in a manner that renders subsequent examination impossible, *post factum*, the cooked fruit is permissible. As explained by *Shakh*, *Yoreh De'ah* 84:29, that ruling is predicated upon the principle of *sefek sefeika* or “double doubt,” i.e. first, the presence of an insect is doubtful and secondly, even if present, it is possible that the insect has been crushed and hence has become nullified in the larger quantity of permissible foodstuff. Citing earlier sources, *Shakh* concludes that, in a locale in which infestation

by insects has been established “*hubzeku*,” the presence of insects in the fruit must be regarded as tantamount to a certainty and hence the food is forbidden.⁴⁴

However, *Taz*, *Yoreh De’ah* 84:17, disagrees with *Shakh* in maintaining that, upon cooking, the foodstuff is permissible even if it is known that such fruit is commonly infested. According to *Taz*, even if there is but a “remote possibility” (*zad rahok*) that no insect was present, the food is permissible on the basis of the principle of *sefek sefeika*.⁴⁵

Rabbi Oberlander seeks to relate that controversy to the situation of unexamined water used for cooking. Applying the principle of *sefek sefeika*, he asserts that the cooked food is permissible. Even in situations in which the presence of copepods is widespread, the cooked food or boiled water, he argues, is permissible according to *Taz*. However, in the opinion of this writer that conclusion is not warranted. It is surely the case that insects typically found in fruit quite often become crushed or dismembered in the process of cooking; hence the status of such an organism in food that has been cooked is indeed a matter of doubt. There is, however, to the best of this writer’s knowledge, no evidence that such crushing takes place when extremely miniscule, barely visible organisms (such as copepods) find their way into a pot. Such tiny creatures, it would seem, will remain intact unless a concerted effort is made finely to grind the food in question. Accordingly, insofar as use of boiled water for tea, coffee and the like is concerned, there is no reason to assume that any organism becomes crushed in the boiling processes. Moreover, as noted by *Teshuvot Maharam Lublin*, no. 27, *Teshuvot Shirat Zion*, no. 28, and *Teshuvot Rav Pe’alim*, IV, *Yoreh De’ah*, no. 8, although in cooking, a process in which food is often rinsed by hand and stirred by means of a cooking utensil, there is a realistic likelihood that any organism present may become crushed, such crushing is not likely to occur when water is simply boiled in a kettle or a pot.

Indeed, R. Yitzchak Bistrisky, *Or Yisra’el*, p. 203, reports that, after boiling water for three quarters of an hour, he found copepods that were completely intact.⁴⁶ Hence, empirically, there is no *sefek sefeika* that would render such cooked food permissible. Moreover, as Rabbi Oberlander himself notes, tea or coffee can readily be strained even after it has been fully prepared. Obviously, although it is not permitted to cook forbidden objects in reliance upon nullification, coffee that has already been brewed by a method in which a filter is employed is permissible.

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VI. USE OF FILTERS ON SHABBAT

Use on *Shabbat* of a faucet to which a filter has been attached presents an entirely different problem. Removal of an insect from a food product or from a beverage on *Shabbat* presents a problem of *borer*, i.e., the prohibited “selection” or removal of a waste product or undesired object, e.g., from food to be eaten or from other objects to be used for some other purpose. Ordinarily, an insect might be removed together with a small quantity of the food or beverage in which it is found rather than in isolation. Since a portion of the perfectly desirable foodstuff is removed together with the disdained entity, the separation remains incomplete and hence permissible. However, a filter will remove only the insect as well as any other fragments of undesired dross. Hence the problem of *borer*, or impermissible separation, arises.

The problem, however, exists only if there is a desire and need to achieve a separation. A person who does not suspect the presence of a forbidden organism and who would be perfectly willing to drink unfiltered water may open a faucet to which a filter has been attached. By the same token, there is no problem with using filtered water for washing one’s hands on *Shabbat* since there is no reason to be concerned with the presence of insects in water used for that purpose. A similar problem is identified by R. Joshua Neuwirth, *Shemirat Shabbat ke-Hilkhatah*, I, 3:56, note 163, who reports that R. Shlomoh Zalman Auerbach expressed astonishment at the use of a filter on the first and last days of *Pesah* by individuals concerned with regard to possible contamination of the water supply by *hamez*.

Comprehensive discussions of the issues involved in straining water on *Shabbat* are presented by R. Chaim Oberlander and R. Joel ha-Levi Rosner in the Tishri 5765 issue of *Or Yisra’el*.⁴⁷

The issue of straining water on *Shabbat* for a comparable purpose was first addressed by *Kaf ha-Hayyim*, *Orah Hayyim* 319:120. *Kaf ha-Hayyim* ruled that, in Jerusalem, water might be strained on *Shabbat*. Apparently, during the period in which that work was written, there was concern that insects might be present in the Jerusalem water supply. However, even if present, those insects were not forbidden aquatic creatures since they spawned in cisterns. The concern was solely due to the fact that consumption of insects is revolting to most people and hence is forbidden by virtue of the prohibition “You shall not make yourselves repulsive” (Leviticus 11:43). However, that prohibition is operative only if the presence of insects is known with certainty; if their presence

is merely doubtful there is no revulsion attendant upon drinking the water. Basically, *Kaf ha-Hayyim*'s position is that, if straining is required as a matter of Halakhah, it is forbidden of *Shabbat* but, if straining is not normatively required, it is permissible. However, in a subsequent comment, *Kaf ha-Hayyim*, *Orah Hayyim* 319: 223, cites earlier authorities who ruled that straining is indeed required. Nevertheless, *Kaf ha-Hayyim* permits straining on *Shabbat* with the stipulation that the straining be performed by two persons acting simultaneously and that the straining be performed in an unusual manner.

R. Abraham Chaim Noe, *Kezot ha-Shulhan*, IV, 125:14, *Badei ha-Shulhan*, no. 37, cites *Hayyei Adam*, *Hilkhot Shabbat*, *Nishmat Adam* 16:5, who suggests that it may be permissible to strain insects that are not repulsive on *Shabbat*. Rabbi Noe asserts that, since the individual has no personal desire to effect the separation but rather the sole consideration motivating a person not to imbibe such insects is the prohibition attendant upon them, there is no prohibition of *borer*. The argument is that the prohibition is attendant only upon separation of something that is not desired from something that is desired. The insects in question are neither objectively nor subjectively undesirable for any mundane reason; they are eschewed only because of concern lest a halakhic prohibition be violated. Selection and separation on the basis of a consideration that is best described as metaphysical, he argues, does not entail a forbidden act of *borer*. However, *Nishmat Adam* regards that distinction as questionable.⁴⁸

Kezot ha-Shulhan observes that whether or not insects are present in the water is itself a matter of empirical doubt. Consequently, *Kezot ha-Shulhan* concludes that, according to *Nishmat Adam*, straining on *Shabbat* would be permissible on the basis of the principle of *sefek sefeika* or "double doubt." The identical consideration would render filtering New York City water on *Shabbat* permissible since at any given time the presence of insects is doubtful. The "double doubt" lies in the combination of the doubt with regard to the fact, i.e., the presence of copepods, and the halakhic doubt regarding the permissibility of straining such copepods on *Shabbat*.

Kezot ha-Shulhan, however, draws an inference from a ruling of *Shulhan Arukh ha-Rav*, *Orah Hayyim* 319:23, that serves to establish that straining on *Shabbat* is forbidden even if the purpose is to remove insects that are not repulsive. On the basis of that inference, *Kezot ha-Shulhan* rules contrary to the position of *Nishmat Adam*. The source for the ruling that a foodstuff not intrinsically disdained, but rejected

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only because of its nature as a halakhically prohibited substance, is not subject to the prohibition of *borer* is a statement of *Magen Avraham, Orah Hayyim* 500:12, with regard to separation of prohibited fat (*helev*) from meat on *Shabbat*.⁴⁹ A similar statement made in a different context appears in *Magen Avraham* 466:8. *Kezot ha-Shulhan* observes that *Magen Avraham*'s ruling is limited to situations in which both the separated portion and the consumed portion are of the same species, e.g., both are meat, and hence fungible other than because of the prohibition.⁵⁰ However, insects and water are intrinsically different substances and hence, asserts *Kezot ha-Shulhan*, even if insects are eschewed only because of an attendant prohibition, the restriction of *borer* applies.

Hazon Ish, Orah Hayyim: Mo'ed 53, suggests that a filter may be used on *Shabbat* to assure that insects are not present in water flowing from the faucet on condition that the glass or container in which the water is collected be removed from the faucet before the spigot is turned off so that a portion of the water filtered in that manner is wasted in the act of filtration.⁵¹ However, *Hazon Ish* concludes that the expedient is of no avail if the water is infested by "many" insects.⁵² Nevertheless, R. Ya'akov Yitzchak Weisz, *Teshuvot Minhat Yizhak*, VII, no. 23, advises that the expedient suggested by *Hazon Ish* be employed on *Shabbat*.⁵³

VII. CONCLUDING COMMENTS

During the period in which the attention of some sectors of the Jewish community in New York City was focused upon possible halakhic problems regarding drinking water the parasitic disease section of the Centers for Disease Control and Prevention engaged in an active campaign to inform the public of potential health hazards associated with swimming in any body of water. The concern of the Centers for Disease Control focused upon swimming pools because of the prevalence of a parasite called cryptosporidium that may be responsible for eye, skin and respiratory infections as well as for gastrointestinal disorders.⁵⁴ Clearly, swimming pools are not risk free.

Nor is New York City drinking water free of contaminations that pose risks to human health. In the *New York City 2003 Drinking Water Supply Quality Report* published by the Department of Environmental Protection that city agency advised that a significant majority of water samples taken from the Kensico Reservoir and the New Croton Reservoir were positive for giardia and cyptosporiduum, microscopic

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pathogens that may cause intestinal illness.⁵⁵ The DEP advises that immuno-compromised persons, such as patients undergoing chemotherapy, transplant recipients, person suffering from Crohn's disease or HIV, as well as the elderly and infants "should seek advice from their health care providers about their drinking water"⁵⁶

Elsewhere in the same document, the DEP reports that treatment of water with chlorine to destroy microorganisms results in the forming of haloacetic acids and concludes with the following observation:

*New York State requires the following statement: Some studies of people who drank chlorinated drinking water for 20 to 30 years show that long term exposure to disinfection by-products (possibly including haloacetic acids) is associated with an increased risk for certain types of cancer. However, how long and how frequently people actually drank the water as well as how much haloacetic acids the water contained is not known for certain. Therefore, we do not know for sure if the observed increased risk for cancer is due to haloacetic acids, other disinfection by-products, or some other factors. The individual haloacetic acids dichloroacetic acid and trichloroacetic acid cause cancer in laboratory animals exposed to high levels over their lifetimes. Dichloroacetic acid and trichloroacetic acid are also known to cause other effects in laboratory animals after high levels of exposure, primarily on the liver, kidney and nervous system and on their ability to bear healthy offspring. Chemicals that cause effects in animals after high levels of exposure may pose a risk to humans exposed to similar or lower levels over long periods of time.*⁵⁷

Certainly the authors of that material do not anticipate, nor do they desire, that all readers immediately desist from utilizing New York water for drinking purposes. The physicians and epidemiologists employed by the Centers for Disease Control find it their duty to make the public mindful of potential harm so that individual members of society may make their own determinations with regard to the risks they are willing to assume.

The United States has difficulty exporting its grain to European countries because of a perceived danger associated with genetically engineered food products. One need only enter any supermarket to observe organically grown produce and non-organically grown produce displayed side by side. The price discrepancy between organic and non-organic fruits and vegetables is justified solely on the basis of the fact that organic produce is free of carcinogens associated with pesticides. Obviously, some consumers are willing to pay a premium

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for avoidance of even a slight health risk. Dentists routinely seek a full set of x-rays of a patient's teeth annually. Some patients just as routinely decline the potential benefit of dental x-rays despite the low dose of the radiation involved because the effects of radiation are cumulative over a lifetime and no one has definitively established an absolutely safe threshold.

There is little question that in each of these cases the risk involved is well within the category of "*shomer petai'im Ha-Shem*—the Lord preserves the simple" (Psalms 116:6)⁵⁸ and hence is halakhically acceptable. But to say that a specific form of conduct is halakhically acceptable is not to say that it is sagacious or even prudent. Some people are more prudent than others; some are more open to risk-taking than others. Such variations of temperament serve to explain why two equally intelligent individuals may make different choices with regard to assumption of minimal, albeit real, risk of life or well-being. Where real risks exist, or when the absence of risk cannot reasonably be excluded, a person who seeks to avoid the risk in question is neither neurotic nor irrational and should not be regarded in that light by a person willing to assume the risk, just as a person who is willing to accept a degree of risk associated with an unsecured financial venture in return for the anticipation of a higher return on his investment should not be regarded as irrational by a person who willingly forgoes a higher return in favor of guaranteed preservation of capital.

The same is true with regard to potential transgression and its attendant spiritual harm. Halakhah generally forbids even acts that are doubtfully forbidden. However, again generally speaking, when the chance of transgression is remote, Halakhah does not forbid such acts. Nevertheless, concerned individuals to whom the onus of transgression is as serious as is the fear of bodily harm will refrain from acts that harbor even the possibility of transgression.

It seems to this writer that this is the thrust of the remarks of R. Moshe Chaim Luzzato, *Mesilat Yesharim*, chap. 14. The topic addressed by *Mesilat Yesharim* is "*perishut*," literally, asceticism. Asceticism is certainly not an ideal in Judaism. Yet certain forms of self-denial are regarded as salutary. One of those is identified by *Mesilat Yesharim* as "*perishut be-dinim*" or "asceticism with regard to laws." As *Mesilat Yesharim* explains, persons who eschew certain pleasures or benefits because of fear of transgression, even when Halakhah does not mandate such a high state of vigilance, act in a commendable manner.

In small towns in Europe inhabitants not only raised chickens for

food but often maintained cows in their backyards in order to obtain milk. R. Israel Meir ha-Kohen, the *Hafez Hayyim*, also kept a cow for that purpose. Members of *Hafez Hayyim's* family relate that one day he suddenly stopped drinking milk or eating any dairy products prepared from milk given by that cow. When questioned about the sudden change in his eating practices, *Hafez Hayyim* turned a deaf ear and refused to respond. Repeated questioning elicited only adamant refusal to answer. Eventually, the cow stopped giving milk. Since there was no longer any reason to maintain the cow it was slaughtered. Lo and behold, upon examination by the *shohet*, adhesions were found on the lungs and the cow was pronounced non-kosher. Suddenly, *Hafez Hayyim's* earlier demurrals to drink milk derived from the cow became cogent: the milk of a non-kosher animal is non-kosher.

How did *Hafez Hayyim* become aware of the fact that his cow had developed adhesions? Certainly not on the basis of some prophetic inspiration. Had such information been revealed to him, presumably he would have been duty-bound to inform his family so that they not inadvertently fall into transgression.⁵⁹ There is a quite simple explanation for *Hafez Hayyim's* behavior. As animals age, they, no less so than humans, become prone to illness. *Hafez Hayyim* realized that his cow had reached a stage in bovine life at which disease and illness were more than remote possibilities. Concern for his spiritual welfare caused him to eschew milk that might be tainted with even the suspicion of spiritual harm. Was he halakhically required to act as he did? Certainly not. Unless empirically rebutted, the halakhic presumption that the majority of animals are not *tereifot* applies even to aging animals. *Hafez Hayyim's* avoidance of the milk of that particular cow reflected a finely-honed sensitivity to the possibility of transgression.

The concern with regard to New York water is far more profound. It is quite conceivable that, at least in some neighborhoods, the incidence of infestation does not rise to a level that serves to generate a halakhic concern. The general rule, subject to limited exceptions, is *lo mahazikin rei'uta*, i.e., one is not required to suspect halakhic contamination of one type or another unless there is basis for such suspicion. In the absence of halakhically recognized grounds for suspicion, subjective concern may be grounds for personal stringency but not for a normative prohibition. However, when cogent grounds for fear rising to the halakhic threshold of suspicion do exist, the obligation not to risk transgression becomes a matter of normative law. The fundamental issue with regard to New York water is whether the grounds for suspicion rise to that level.

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An isolated sighting of a forbidden insect would not result in a mandatory requirement for examination of all water. Such an event might be dismissed as an isolated occurrence. Animals are not routinely examined upon slaughter for every possible anomaly. Since the majority of all animals are not *tereifot*, there is no halakhic requirement to suspect that any given animal is a member of the minority class of *tereifot*. However, examination of the lungs for the presence of adhesions is required despite the fact that the majority of animals do not develop disqualifying adhesions. Examination of the lungs is required because, unlike other *tereifot*, adhesions are present in a *mi'ut ha-mazui*, i.e., in a significant minority of animals.⁶⁰ *Shakh, Yoreh De'ah* 84:28, indicates that examination of food products for the presence of insects is required as a matter of normative law if insect infestation represents a *mi'ut ha-mazui*.⁶¹

Thus, the crucial question with regard to whether or not a halakhic problem exists with regard to the New York water supply is whether the incidence of infestation rises to the level of a *mi'ut ha-mazui*.⁶² The answer is not necessarily uniform for all areas throughout the city. Some areas may be *muhzak be-tola'im*, i.e., they may be known to be plagued by repeated instances of infestation; other areas, and even some buildings within infested areas, may have repeatedly been shown to be free of infestation. Although copepods are known to be present in the reservoir, water in buildings shown to be free of infestation has, in effect, undergone a self-filtration process.⁶³ In this writer's opinion, where copepods have been found, filtration of water is certainly to be advised; in buildings shown to be free of infestation, filtration is not required.

NOTES

1. See “Jewish Watergate: Does Drinking Water Need to be Filtered?” *Kashrus Magazine*, July, 2004, p. 28 and *New York Times*, June 1, 2004, p. B2.
2. See *Kashrus Magazine*, July, 2004, p. 36 and *New York Times*, *loc. cit.* A somewhat different version of the events leading to discovery of the problem is recounted in *Yated Ne’eman*, 28 Iyar 5764, p. 107.
3. The dominant species is *Diacyclops thomasi*, commonly known as *Cyclops*. *Cyclops* have five pairs of legs and divided tail-like appendages called furca as well as two sets of antennae. As the name suggests, *Cyclops* have one black or red eye in the middle of the head. Adults of the species range in size from 0.8 millimeter to 1.4 millimeters. Other species of copepods are present in the water supply as well.
4. See *Yated Ne’eman*, 23 Iyar 5764, p. 107. The New York State Attorney General’s office has indeed filed a number of actions over a period of years in repeated attempts to force the city to filter water that is vulnerable to contamination. Despite a hue and cry raised in some quarters regarding a possible health hazard the Attorney General does not appear to have based his complaints upon the presence of copepods. Cf., *Yated Ne’eman*, 22 Sivan 5764, pp. 89 and 98.
5. See *Yated Ne’eman*, 29 Elul 5746, p. 19.
6. See the *Jewish Press*, June 4, 2004, p. 72 and June 18, 2004, p. 82. See also the statement of R. Hershel Schachter, *Kashrus Magazine*, October, 2004, p. 199.
7. In addition, a pamphlet authored by Rabbi Yitzchak Raitport, *Teshuvah Halakhah le-Ma’aseh be-Din ha-Mayim she-be-Brooklyn*, New York, dated Elul 5764, permitting use of New York City water has been circulated within the rabbinic community. An article authored by R. Israel Belsky permitting New York water appears in *Sha’ashu’ei Oraita*, no. 3 (Kislev 5765). This article has been reprinted in the 5765 issue of *Ha-Mesivta*, published by Mesivta Torah vo-Daath. The reprinted version includes an additional section in which the author rules against use of a filter on *Shabbat*. The Yiddish-language publication, *Der Yiddisher Flam*, Av 5764, features a survey of the problem by Yitzchak Shlomoh Dresner as well as two halakhic articles, one by R. Elchanan Breisch forbidding use of unfiltered water and a second by R. Naphtali Oshry permitting use of such water.
8. Cf., *Hokhmat Adam* 38:6.
9. It has been asserted that there can be no halakhic problem associated with drinking New York water because innumerable glasses of water containing copepods have been consumed by pious and learned Jews over the course of decades. In light of the talmudic dictum “The Holy One, blessed be He, does not permit the beasts of the righteous to sin in error, how much less the righteous themselves” (*Hullin* 5b), it is argued, it is unthinkable that such individuals should have been guilty of even inadvertent transgression. See David Berger, “On the Prohibition of Water: An Appeal to *Poskim*,” *Jewish Press*, October 22, 2004, p. 7. Quite apart from the fact that the cited talmudic generalization has never been recognized as a dis-

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- positive consideration in ruling a questionable foodstuff to be permissible, considering the far from ubiquitous presence of copepods in New York water, there is no evidence that any of the luminaries named by Professor Berger did actually imbibe such creatures.
10. See *Jewish Press*, June 18, 2004, p. 82.
 11. See Yaakov D. Lach's unpublished report commissioned by the Orthodox Union, "Copepods in NYC Tap Water" (July 19, 2004), p. 9 and pp. 30-31.
 12. For other areas of Halakhah in which this issue arises and further discussions of the issue see R. Shlomoh Kluger, *Teshuvot Tuv Ta'am va-Da'at, Mahadura Tinyana, hashmatot*, no. 35; R. Shalom Mordecai Schwadron, *Teshuvot Maharsham*, III, no. 357; R. Benjamin Aryeh Weiss, *Teshuvot Even Yekarah, Mahadrura Tinyana*, no. 33; R. Ovadiah Yosef, *Yabi'a Omer*, IV, *Yoreh De'ah*, no. 20, sec. 8 and no. 21 sec. 7; R. Ze'ev Wolf Leiter, *Teshuvot Bet David*, no. 8; R. Moshe Feinstein, *Iggerot Mosheh, Yoreh De'ah*, II, no. 146; R. Betzalel Zolti, *Mishmat Ya'avez*, no. 66; R. Moshe Stern, *Teshuvot Be'er Mosheh*, V, no. 16; R. Eliezer Waldenberg, *Ziz Eli'ezer*, VII, no. 15, sec. 10; R. Menasheh Klein, *Mishneh Halakhot*, IV, no. 129; *Darkei Teshuvah* 18:18; and *Mishnah Berurah* 648:46. Cf., *Teshuvot Divrei Yosher*, no. 30. See also R. Moshe Sternbuch, *Mo'adim u-Zemanim*, VIII, addenda to vol. II, no. 124.
 13. For a further discussion of this question see this writer's "Stem Cell Research," *Tradition*, vol. 36, no. 2 (Summer, 2002), pp. 65-67.
 14. See, however, R. Yechezkel Michal Epstein, *Arukh ha-Shulhan, Yoreh De'ah* 83:15, who stipulates that the scales must be visible to the naked eye and also readily removable from the skin. See also *Teshuvot Sho'el ve-Nish'al*, V, *Yoreh De'ah*, no. 64. Cf., however, *Teshuvot Yashiv Mosheh*, no. 214, who rules that such fish are permissible.
 15. See also *Hazon Ish, Yoreh De'ah* 14:6, s.v. *u-be-ma'aseh* and R. Ovadiah Yosef, *Yehaveh Da'at*, II, no. 47, as well as R. Moshe Feinstein, *Iggerot Mosheh, Yoreh De'ah*, II, no. 46 and *Even ha-Ezer*, III, no. 33. Cf., however, R. Jacob Emden, *She'ilat Ya'avez*, II, no. 124, who advises that rice be examined for ants "in the sun or by means of a magnifying glass." In stark contradiction, both Rabbi Raitport, p. 11, and Rabbi Oshry, p. 33, cite the position of *Halakhot u-Minhagei Rabbeinu Shalom me-Neustadt*, ed. Shlomoh Spitzer (Jerusalem, 5737), sec. 464, who ostensibly maintains that insects that are visible only in bright sunlight are not prohibited. Cf., however, the note appended by the editor in which he assumes that authority's position to be consistent with the accepted view.
See also R. Elyakim Dworkes, *Be-Shevilei ha-Halakhah*, II (Jerusalem, 5752), 52, who cites unnamed sources who understand *She'ilat Ya'avez* as merely commending use of a magnifying glass in order to ease the difficulty of close scrutiny with the naked eye. See also *Mo'adim u-Zemanim*, VIII, addenda to vol. II, no. 124.
 16. See also the discussions of R. Israel Veltz, *Divrei Yisra'el*, III, nos. 110 and 111; R. Samuel ha-Levi Wosznier, *Teshuvot Shevet ha-Levi*, I, no. 7, sec. 8; R. Shammai Kehot Gross, *Teshuvot Shevet ha-Kehati*, I, no. 36 and R. Menasheh Klein, *Mishneh Halakhot*, IV, no. 128 and VII, no. 9.
 17. Cf., however, R. Joseph Lieberman's comment in one of a series of notes

appended in unnumbered pages to R. Elyakim Dworkes' *Be-Shevilei ha-Parashah* (Jerusalem, 5762). Basing himself upon a responsum of R. Akiva Eger published in *Drush ve-Hiddush R. Akiva Eger* (New York, 5709), I, 176, Rabbi Lieberman asserts that an *etrog* missing a portion of its flesh must be disqualified even if that fact can be ascertained only upon magnification. R. Akiva Eger cites *Magen Avraham, Orah Hayyim* 648:16, who rules that a *hazazit*, i.e., lichen or a scab on the surface of an *etrog*, disqualifies the *etrog* only if it is perceived by the eye (*nireh le-ayin*). R. Akiva Eger, however, asserts that *Magen Avraham's* comment is applicable only to a *hazazit* which disqualifies an *etrog* because the fruit is no longer *hadar* or "beautiful." Since "beauty" in the first instance is literally determined by the eye of the perceiver, a blemish that cannot be perceived cannot mar the beauty of the fruit. However, asserts R. Akiva Eger, despite the terminology employed by *Magen Avraham, Orah Hayyim* 648:9, when the disqualification is not because of the requirement of *hadar* but because of the removal or the absence (*haser*) of a part of the *etrog*, the *etrog* is disqualified even if the affected area is much smaller. Based upon that comment, Rabbi Lieberman concludes that, according to R. Akiva Eger, halakhic determinations must take cognizance of perceptions that may be experienced only upon magnification.

However, a close reading of R. Akiva Eger's comments does not support that conclusion. R. Akiva Eger carefully states: ". . . whatever is actually separated and is perceived by precise placing of the eye (*nireh besimat ayin be-diyuk*) is disqualified because it is *haser*." R. Akiva Eger carefully speaks of "precise placing of the eye"—not of artificial magnification—as opposed to mere "perception by the eye", i.e., that which can be perceived only by close scrutiny as distinct from that which strikes the eye immediately. Only a *hazazit* that "strikes the eye" disqualifies an *etrog*; one that can be detected only upon "precise placing of the eye" does not. In contradistinction, *haser* is a disqualification even if the absence of a very small portion of the *etrog* can be determined only upon close visual scrutiny. There is, however, no reason to conclude that R. Akiva Eger would disqualify an *etrog* missing a portion of its flesh so minute that the imperfection can be determined only upon artificial magnification.

See also R. Joseph Mashash, *Teshuvot Mayim Hayyim*, no. 259, who rules unhesitatingly that such an *etrog* is kosher.

18. For a comprehensive survey of the bases and ramifications of those opinions see R. Jacob Gershon Weiss, *Midot u-Mishkalot shel Torah* (Jerusalem, 5745), pp. 198-264.
19. R. Abraham Chaim Noe, *Shi'urei Torah* (Jerusalem, 5707), p. 249, calculates the *amah*, or cubit, as 48 centimeters (18.897 inches). The identical calculation was earlier advanced by R. Shalom Mordecai Schwadron, *Da'at Torah* 35:116, and *Darkei Teshuvah* 19:27. Accordingly, the *mil*, which equals 2,000 cubits, is equal to a distance of 960 meters (3,149.60 feet). Rabbi Noe gives alternative calculations of the *amah* as equal to 47 centimeters (18.5 inches) or 49 centimeters (19.29 inches). The *mil* would then be the equivalent of 940 (3,083.98 feet) or 980 meters (3,215.22 feet).

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20. *Hazon Ish*, *Kuntres ha-Shi'urin*, *Orah Hayyim*: *Mo'ed* 39:5-6, and 39:9, calculates the *amah* as 58 centimeters (22.83 inches) and, accordingly, a *mil* would equal 1,160 meters (3,805.77 feet). *Hazon Ish* also cites a report to the effect that R. Shmu'el Salant accepted calculations that would render the *amah* 60 centimeters or 23.62 inches and the *mil* 1200 meters or 3937.01 feet. Nevertheless, for purposes of stringency, R. Shmu'el Salant is reported to have accepted calculation that would yield 48 centimeters or 18.90 inches for the *amah* and 960 meters or 3149.61 feet for the *mil*.

Cf., R. Ya'akov Kanievsky, *Shi'urin shel Torah* (Bnei Brak, 5729), who, in a note on p. 63, calculates the *amah* as 57 $\frac{2}{3}$ centimeters (22.70 inches) and possibly, according to Rashba, as 59.66 centimeters (23.49 inches). The *mil* would then be the equivalent of either a bit more than 1,153.2 meters (3,783.46 feet) or a bit more than 1,193.2 meters (3,914.6 feet). Actually, according to Rabbi Kanievsky's own premises, the calculation of the *amah* as 57 $\frac{2}{3}$ centimeters is somewhat imprecise. Rabbi Kanievsky reports that "according to that which has been received by us from *gedolei hora'ah*, that the *amah* equals 13 *vershak* . . ." The *vershak* is a Russian measuring length equal to 1.75 inches or 4.445 centimeters. If so an *amah* is the equivalent of 57.78 centimeters (22.73 inches) and thus a *mil* is equal to 1,155.7 meters (3,791.66 feet). See *Encyclopedia Britannica*, 15th ed. (Chicago, 1995), XIX, 735 (where the term is transliterated as *verchok*).

A table compiled by Moshe, Rosa and Shimon Bodenheimer, *Shi'urin u-Middot Hazal* (Jerusalem, 5725), gives the measurement of the *amah* as 57.6 centimeters (22.67 inches). Cf., the table published by Y. Avi-Zevi, *Shanah be-Shanah*, 5730, p. 125, that gives the measurement of the *amah* as 56 centimeters and that of the *mil* as 1120.37 meters. Those measurements presumably reflect the view of R. Chaim Jacob Sheftel, *Erekh Milin* (Berdichev, 5667), *erekh ezba*, according to whom the *amah* measures approximately 56 centimeters. See *Encyclopedia Talmudit*, II (Jerusalem, 5760), 29, note 56.

Other less frequently cited opinions with regard to the length of an *amah* include those of *Meshiv Davar*, I, no. 24; *Arukh ha-Shulhan*, *Yoreh De'ah* 201:3; *Teshuvot Hatam Sofer*, *Orah Hayyim*, no. 181; and the earlier noted view of *Erekh Milin*, *erekh ezba*.

Meshiv Davar rejects what he terms "the customarily accepted calculations" according to which the length of the *amah* would equal 60 centimeters and advances considerations that would yield the measurement of an *amah* as 48 centimeters. Nevertheless, in his concluding remarks he retracts that view and advances a calculation that would result in an *amah* measured "in excess of" 48 centimeters and endorses the practice of Frankfurt am Main according to which the length of the *amah* is calculated as 57 centimeters or 22.44 inches.

Arukh ha-Shulhan states that the length of an *amah* is 12 "*veierskes*," which is apparently the Yiddish term for the Russian *vershak*. Thus, according to *Arukh ha-Shulhan*, the length of an *amah* equals 53.34 centimeters or 21.0 inches. Cf., *Encyclopedia Talmudit*, II, 29, where the length of an *amah* is given as 54 centimeters according to *Arukh ha-Shulhan*.

Teshuvot Hatam Sofer states that the length of a fingerwidth is a “zoll.” Since a biblical *amah* is equal to 24 fingerwidths, the length of an *amah* according to *Hatam Sofer* equals 24 zoll. *Da’at Torah, Yoreh De’ah, Kuntres Aharon* 35:116 states that the zoll is equal to 2.6 centimeters. That calculation is apparently also assumed by *Darkei Teshuvah* and *Encyclopedia Talmudit*. [Cf., however, *Encyclopedia Britannica, loc. cit.*, which describes the zoll as a Swiss unit of measure equal to 3 centimeters.] *Encyclopedia Talmudit, ad locum*, indicates that, according to *Hatam Sofer*, the length of an *amah* is 62.4 centimeters or 24.567 inches. Thus a *mil*, according to *Hatam Sofer*, would equal 1248.0 meters or 4094.49 feet. *Darkei Teshuvah* 19:27 notes that the *amah* was marginally enlarged by rabbinic decree and, accordingly, should be calculated as $24\frac{1}{2}$ zoll. *Darkei Teshuvah* endorses the position of *Hatam Sofer* and states that the length of an *amah* according to *Hatam Sofer* is 63.8 centimeters. Thus, according to *Darkei Teshuvah*, an *amah* equals 25.12 inches and, accordingly, a *mil* equals 1276 meters or 4186.35 feet. *Hatam Sofer*’s calculations are thus significantly greater than those of the earlier-cited authorities.

Darkei Teshuvot also cites a certain “Rabbi of Yasi” who calculated the *amah* as “no more than” 52 or 53 centimeters and an anonymous scholar who differed and calculated the *amah* as approximately $58\frac{1}{2}$ centimeters. *Darkei Teshuvah* also quotes *She’erit Yisra’el, Parashat Mezora*, who calculates the *amah* as $21\frac{1}{6}$ zoll or 56 centimeters and further opines that one who calculates the *amah* as $22\frac{1}{8}$ zoll or 57 centimeters is to be commended. *Darkei Teshuvah* cites an additional source for the latter calculation as well.

Da’at Torah, Yoreh De’ah, Kuntres Aharon 35:116, cites authorities who variously posit the length of an *amah* as 47 centimeters, 55.25 centimeters, a bit more than 57 centimeters and 58.5 centimeters, as well as one authority who asserts that according to Rashi the *amah* equals 43.8 centimeters, according to *Shakh* 45.02 centimeters, according to *Taz* 47.34 centimeters and according to Rambam 50 centimeters. See also the measurements ascribed to earlier authorities by Rabbi Weiss, *Midot u-Mishkalot shel Torah*, pp. 198-264 as well as the table presented *ibid.*, introduction, p. 8. See also R. Moshe Shimshon Bacharach, *Hut ha-Shani*, no. 97.

For a table correlating many of these measurements of the *amah* with the volume of the liquid *revi’it* see *Midot u-Mishkalot shel Torah*, introd., p. 8. Rabbi Kanievsky, *Shi’urin shel Torah*, p. 51, cites a discussion in the Palestinian Talmud, *Terumot* 10:7, that is understood by some authorities, including Riva, *Commentary on the Pentateuch, Parashat Mishpatim; Ma’adanei Yom Tov, Berakhot* 3:30; and *Tosafot Yom Tov, Pe’ah* 6:6, as indicating that a *revi’it* equals 240 grams. If so, an *amah* would appear to equal 73.368 centimeters or 28.885 inches. Rabbi Kanievsky categorizes that calculation of the *revi’it* as “extremely large” and as “not imagined by early-day authorities.”

It may be of interest, albeit of no halakhic import, to note that, based upon Josephus’ description of the circumference of the pillars of the Temple,

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the renowned physicist Sir Isaac Newton postulated the length of the “sacred” cubit to be between 24.90 and 25.02 inches as distinct from the “profane” cubit of 20.63 inches that he believed was the measurement employed by the Egyptians in construction of the Great Pyramid. Newton’s calculations are the subject of his “De magnitudine cubiti sacri.” An English translation of that essay titled “A Dissertation Upon the Sacred Cubit of the Jews and the Cubit of Several Nations: in which, from the Dimensions of the Greatest Pyramid, as taken by Mr. John Greaves, the ancient Cubit of Memphis is determined” was published in the *Miscellaneous Works of John Greaves, Professor of Astronomy in the University of Oxford*, ed. Thomas Birch, II (London, 1737), 405-433.

21. In absolute terms, the distance a person possessing normal vision is capable of seeing with the naked eye is limited primarily by the curvature of the earth. Thus, when vision is not obstructed, a five-foot tall person standing at sea level can perceive objects, at least faintly, over a distance of 4.5 kilometers or 2.8 miles. See *Encyclopedia Britannica*, VI, 60. According to all calculations, the distance subject to a shepherd’s surveillance is much less. Presumably, then, contemporary inability to see objects at such a distance is due to atmospheric conditions, including, particularly in inhabited areas, pollution, rather than diminished visual prowess.
22. See also *Mo’adim u-Zemanim*, II, no. 124 and VIII, addenda to vol. II, no. 124.
23. See *infra*, note 37, and accompanying text.
24. As noted *surpa*, note 15, *Hazon Ish* does indeed endorse the view that microscopic organisms that could not have been visually perceived were not banned at Mount Sinai. Accordingly, he as well as the other authorities who rule that even creatures that cannot be readily identified as insects are prohibited, must be understood as maintaining that visual perception of such creatures as “black dots” creates a *safek*, or doubt, and as such are subject to the rules governing doubtful situations. Moreover, since the “doubt” is perceived and can now readily be resolved by means of magnification, this “doubt” can no longer be willfully ignored. That consideration is sufficient to prohibit ingesting such creatures. See R. Chaim Hizkiyahu Medini, *Sedei Hemed*, V, *Kellalim, ma’areket ha-samakh, klal 51*.
25. See *Kasbrus Magazine*, July, 2004, p. 376. See also R. Ephraim Zalman Margulies, *Teshuvot Bet Efrayim ha-Hadashot*, no. 62, cited in *Darkei Teshuvah* 84:28, who suggests that miniscule creatures having the appearance of “thin, moving kernels of wheat” are permissible because, in reality, they are not insects but nascent fishlings. There is no hint in that source that inability visually to identify those creatures as insects should in any way be a consideration. Cf. also, R. Chaim Halberstam, *Teshuvot Divrei Hayyim*, II, *Yoreh De’ah*, no. 54, who rejects the position of *Bet Efrayim*.
26. See, for example, *Darkei Teshuvah* 84:26-27. For the status of the water remaining in a reservoir that overflows its banks see *Darkei Teshuvah* 84:6.
Most significantly, since the water flows out of the reservoir into the distribution system, the reservoir cannot be deemed to be a pit of

stagnant water. See Ra'avad, *Sifri Parashat Shemini* 3:2; R. Moses Sofer, *Teshuvot Hatam Even ha-Ezer*, II, no. 30; and *Darkei Teshuvah* 84:6. There appears to be no distinction in this regard between a situation in which the water flows naturally into a canal and a situation in which the flow is controlled by man, i.e., by means of outflow valves, as in the case of a reservoir. Thus the statement published in the *Yated Ne'eman*, *supra*, note 5, indicating that the reservoirs in question have the status of rivers is entirely correct. In that ruling, Rabbi Feinstein, in accordance with the view cited, *infra*, note 28, states that the outflow system is sufficient to guarantee that status and adds that, since the reservoir is fed by flowing water, it must be regarded as having both an inflow and an outflow and hence must be deemed a "river" according to all authorities even though the water appears to be stationary. Cf., *Sha'ashu'ei Oraita*, p. 156.

27. A publication of the New York City Department of Environmental Protection, "Copepods in New York City Drinking Water" (July, 2004), p. 3, states that copepods "are found almost everywhere where water is available" and that "various species can be found in all kinds of freshwater habitats from small creeks to glacial lakes." *Cyclops* and other copepods that are predominant in New York water are limnetic, i.e., they live in open areas of still bodies of water. These species are not endemic to fast moving mountain streams or rivers and hence must breed in the reservoirs or at some point beyond the reservoir in the distribution system. See "Copepods in NYC Tap Water," p. 9.
29. See *Shakh, Yoreh De'ah* 84:8; *Pri Megadim, Yoreh De'ah, Sifte Da'at* 84:8; and R. Moses Sofer, *Teshuvot Hatam Sofer, Even ha-Ezer*, II, no. 30. Cf., however, *Tosafot, Hullin* 67a, s.v. *ba-mayim*; Rosh, *Hullin* 3:68; and *Teshuvot Mishkenot Ya'akov, Yoreh De'ah*, no. 27, who rule that such insects are permitted.

Rabbi Raitport's major argument for permitting Brooklyn water in which such insects are found is that Brooklyn water is derived from the Catskill/Delaware System which receives its water from reservoirs in the Catskill Mountains. Rabbi Raitport received a letter from the Assistant Director of the New York State Bureau of Water Supply Protection informing him that those reservoirs are "recharged by rainfall and snowmelt from the Catskill Mountain" area but have "no river intakes." See *Teshuvah Halakhah le-Ma'aseh*, p. 37. Rabbi Raitport develops the novel thesis that, for the insects to be prohibited, the stagnant water must not only flow out but water must also flow into the stagnant area. See *ibid.*, pp. 18-19. That thesis, however, is, contradicted by numerous sources, including Ra'avad, *Sifri, Parashat Shemini* 3:2; *Teshuvot Hatam Sofer Even ha-Ezer*, II, no. 30; as well as *Darkei Teshuvah* 84:6.

Moreover, the empirical premise upon which this argument is based is incorrect. The reservoirs in question are indeed "recharged by rainfall and snowmelt." However, the rainwater and melting snow are first absorbed by the ground and form aquifers which, in turn, form springs that flow into the reservoirs. See "Copepods in NYC Tap Water," p. 15. Such springs clearly do not have the status of rainwater. See R. Menachem Mendel

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- Schneersohn, *Teshuvot Zemah Zedek, Yoreh De'ah*, no. 176 and R. Naphtali Zevi Yehudah Berlin, *Teshuvot Meshiv Davar*, II, no. 41.
29. That argument has no validity if the highly novel thesis of the *Brisker Rav*, R. Yitzchak Ze'ev Soloveichik, is accepted. The *Brisker Rav* observes that, insofar as other members of the animal kingdom are concerned, the presence or absence of the criteria recorded in Scripture as distinguishing kosher species from non-kosher species is irrelevant with regard to determining the status of any individual contemporary animal. That point is evidenced by the rule that pronounces a pig born of a sheep to be a kosher animal while a lamb born of a pig to be non-kosher. See *Bekhorot* 5b. The principle of *yozei* defines membership in a species on the basis of the identity of the progenitor, or of the progenitors, of the animal in question. The anatomical criteria spelled out in Scripture are significant only in establishing the identity of the early progenitors of present-day animals. Not so with regard to “creeping things that creep on the ground,” asserts the *Brisker Rav*. In that context, he observes, Scripture fails to provide anatomical criteria and omits the phrase “according to their species.” Hence the *kashrut* of those creatures is determined by classification of each individual member of those species on the basis of its appearance (*to'ar*) as a “creeping thing.” The *Brisker Rav* makes the same assertion with regard to “creeping things that creep on the ground.” In support of that position he cites Rambam’s formulation of the prohibition in *Hilkhot Ma’akhalot Assurot* 2:23 and his ruling in *Hilkhot Ma’akhalot Assurot* 3:8 as well as the midrashic statement indicating that it was necessary for God to demonstrate a “creeping thing” to Moses in order for him properly to apprehend the characteristics of the prohibited species. This principle also seems to be reflected in Rambam, *Hilkhot Ma’akhalot Assurot* 2:12. See *Hiddushei ha-Griz al ha-Shas*, ed. Y. Cohen (Jerusalem, 5729), p. 259. For a fuller discussion see this writer’s *Be-Netivot ha-Halakhah*, I (New York, 5756), 132-133. Since “creeping things” do not acquire their status from their progenitors but are classified as kosher or non-kosher solely on the basis of their individual criteria, it should logically follow that organisms spawned in stagnant water are always permitted since 1) they are excluded from the requirement of fins and scales and 2) since there is no reference to identification “according to their species,” the identity of their progenitors is irrelevant.
30. See the novel thesis advanced by the *Brisker Rav* cited *supra*, note 29. The *Brisker Rav* would certainly concede *Hazon Ish*’s halakhic conclusion since *Hazon Ish* explicitly limits his thesis to species having the appearance of “creeping things” but not to fish whose status Scripture predicates upon the criteria of fins and scales. See also *Teshuvot Hatam Sofer, Yoreh De'ah*, no. 75 and *Be-Netivot ha-Halakhah*, p. 132. According to the *Brisker Rav*, the argument would be that the exclusion from the requirement for fins and scales is intrinsically limited to organisms that spawn in stagnant water and does not extend to organisms generated by sexual reproduction.
31. For an informative survey of the issues surrounding *kinim* see R. Nosson Slikin, *Mysterious Creatures* (Jerusalem, 2003), pp. 191-204.

In a non-halakhic context R. Avraham ben ha-Rambam writes: “The great stature and quality of the sages of the Talmud in perfection of their talent in explication of the Torah and its minutiae . . . does not necessitate that we argue on their behalf and substantiate their opinion in all of their dicta regarding medical care, natural science and astronomy.” See “Ma’amar al odot Derashot Hazal, Le-R. Avraham ben ha-Rambam Zal,” *Kovez Teshuvot ha-Rambam* (Leipzig, 5619), p. 41. That treatise was also published in *Kerem Hemed*, II (5676), 7-16 and in *Rabbeinu Avraham ben ha-Rambam: Milhamot ha-Shem*, ed. R. Reuven Margolies (Jerusalem, 5713), pp. 81-98 and is also included in the prefatory material published in the Vilna edition of *Ein Ya’akov* (Vilna, 5637) and its reprints.

The identical point was made much earlier by R. Sherira Ga’on with regard to the various medical remedies recorded in the Gemara. See *Ozar ha-Geonim*, ed. M. B. Levine (Jerusalem, 5744), X, *Gittin* 68b, *Ozar ha-Teshuvot*, no. 376. Cf. Abraham S. Abraham, *Lev Avraham*, II (Jerusalem, 5738), chap. 14, sec. 8 and the comment of R. Shlomoh Zalman Auerbach, *ibid.*, p. 19. Alternative explanations for the lack of efficacy of the medical remedies recommended by the Gemara are presented by *Tosafot*, *Mo’ed Katan* 11a, *Avodah Zarah* 24b and *Hullin* 47a; R. Shlomoh Luria, *Yam shel Shlomoh*, *Hullin* 8:12; R. Chaim Joseph David Azulai, *Brit Olam* (commentary on *Sefer Hasidim*), sec. 477; R. Israel Lipschutz, *Tiferet Yisra’el*, *Bo’az*, *Shabbat* 19:1; *Magen Avraham* 173:1 and 179:8; *Hazon Ish*, *Even ha-Ezer: Nashim* 27:3 and *Yoreh De’ah* 5:3; and R. Yair Bucharach, *Teshuvot Havot Ya’ir*, no. 234. Cf., the gloss of R. Akiva Eger to *Yoreh De’ah* 336:1 and *Kaf ha-Hayyim*, *Yoreh De’ah* 24:50. See also R. Joseph Mahsash, *Teshuvot Mayim Hayyim*, no. 259, who rules unhesitatingly that such an *etrog* is kosher.

32. See, for example, the opinion of R. Yehudah Brill, cited by R. Isaac Lampronti, *Pahad Yizhak, erekh zaidah*; *Sefer ha-Brit*, I, chap. 14, note 8; and R. Jonathan Eibeshutz, *Kereti u-Peleti, Pleti* 40:4. See also the comments of R. Chaim Joseph David Azulai, *Shem ha-Gedolim, Ma’arekhet Sefarim*, sec. 82, who staunchly affirms the inerrancy of the Sages of the Talmud with regard to matters of science and attributes their knowledge to the influence of the Holy Spirit and revelation by the prophet Elijah.

For statements in entirely different contexts rejecting scientific findings at variance with halakhic presumptions see *Teshuvot Rivash*, no. 447; R. Jacob Reischer, *Teshuvot Shevut Ya’akov*, III, no. 20; and *Arukh ha-Shulhan, Even ha-Ezer* 13:30. *Arukh ha-Shulhan* adds the comment that “he who question their words testifies with regard to himself that he does not believe in the Oral Law although he is ashamed to say this explicitly.” See also R. Chaim Oberlander, *Or Yisra’el*, Tevet 5757, pp. 210-214.

33. See *Teshuvot Shevet ha-Kehati*, III, no. 126. See also Herman Branover, “Torah and Science: Basic Principles,” *Encounter: Essays on Torah and Modern Life*, ed. H. Chaim Schimmel and Aryeh Carmel (Jerusalem, 1989), p. 239.

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Neither the thesis that there are exceptional species in which spontaneous generation is present nor the thesis that the *kinim* described by the Gemara are no longer extant resolves the broader problem posed by Rambam's comments in *Hilkhot Ma'akhalot Assurot* 2:13:

The species which originate in dust heaps and carcasses, such as maggots, worms and their like and which are born, not through intercourse between male and female, but out of putrefaction of dung and the like are called “*creeping things that move upon the earth*” (Leviticus 11:44). . . . On the other hand, “*all creeping things that creep upon the earth*” (Leviticus 11:42) refers to such that procreate by intercourse between male and female.

Rambam describes two dichotomous classes of “creeping things,” each subject to its own separate prohibition: those that procreate sexually and those generated by putrefaction. According to Rambam, *kinim* are not to be identified as members of an idiosyncratic and perhaps exotic species but are merely paradigmatic of the multitude of tiny organisms that do not reproduce sexually but arise out of putrid substances.

34. Regarding the nature of that retraction see also the comments of R. Yehudah Brill quoted by *Pahad Yizhak* and *Shittah Mekubezet, Ketubot* 13b, as well as the discussion of R. Shimon Schwab, *Kol Torah*, Tishri 5757, pp. 217-218.
35. Cf., the comments attributed to R. Eliyahu Dessler, *Mikhtav me-Eliyahu*, ed. Aryeh Carmell, IV (Jerusalem, 5743), 355-356, note 4 and R. Shimon Schwab, *Kol Torah*, p. 217.
36. See also R. Moses Schick, *Teshuvot Maharam Shik, Yoreh De'ah*, no. 244 and R. Chaim Oberlander, *Or Yisra'el, Tevet* 5757, pp. 212-214. Cf. also, *Hazon Ish, Yoreh De'ah* 5:3 and R. Moshe Feinstein, *Iggerot Mosheh, Even ha-Ezer*, II, no. 3, *anaf* 2.
37. R. Chaim Oberlander, *Or Yisra'el*, Tammuz 5764, pp. 188-189, notes that if the copepods in question spawn in stagnant water, and hence become forbidden only upon emerging from their natural aquatic habitat, they may not have the status of a *berayah*. Many early-day authorities maintain that a *berayah* that is not subject to nullification is, by definition, an entity that is prohibited as food from the moment of its creation. See *Encyclopedia Talmudit*, IV, 209. R. Jonathan Eibeschutz, *Kereti u-Peleti, Peleti* 100:4, rules that, since insects indigenous to fruit become prohibited only upon emerging from the fruit in which they develop, they do not have the status of a *berayah* and may become nullified. See also R. Shlomoh Kluger, *Teshuvot Tuv Ta'am va-Da'at, Mahadura Telita'a*, I, no. 160. Nevertheless, *Kereti* cautions that this ruling should not be relied upon in practice. A similar view was earlier formulated and rejected by R. Chaim Joseph David Azulai, *Shiyurei Berakhah, Yoreh De'ah* 100:4. See also *idem, Mahazik Berakhah, Yoreh De'ah* 84:10. See also R. Jacob Meshulam Orenstein, *Yeshu'ot Ya'akov, Yoreh De'ah* 84:1; *Teshuvot Tuv Ta'am va-Da'at, Mahadura Telita'a*, I, no. 162; *Teshuvot Bet David, Yoreh De'ah*, no. 22; and R. Shlomoh Drimer, *Teshuvot Bet Shlomoh, Yoreh De'ah*, no. 155. Cf., the gloss authored by R. Betzalel ha-Kohen of

Vilna cited by *Matteh Yehonatan*, *Yoreh De'ah* 100:1. See also R. Jacob of Lissa, *Havat Da'at* 100:5 and *Pri Megadim*, *Sifte'i Da'at* 84:31, who reject the position of *Kereti*. See also R. Ezekiel Landau, *Dagul me-Revavah*, *Tinyana*, *Yoreh De'ah* 84, and R. Raphael Joseph Hazan, *Teshuvot Hikrei Lev*, *Yoreh De'ah*, I, no. 63, who demonstrate that *Kereti's* position is contradicted by the comments of Rabbenu Nissim, *Hullin* 58b. See also *Teshuvot Kol Eliyahu*, *Yoreh De'ah*, no. 18; *Erekh ha-Shulhan*, *Yoreh De'ah* 84:2; and *Teshuvot Afarkesa de-Anyah*, no. 20, as well as sources cited by *Darkei Teshuvah*, *Yoreh De'ah* 100:4 and *Yehaveh Da'at*, VI, no. 47.

It should be noted that *Arukh Shulhan*, *Yoreh De'ah* 100:17, declares that repulsive creatures (*devarim ma'usim*) such as “flies and ants” are nullified when mixed with foods sixty times greater in quantity even if a whole insect is present in the mixture. However, Rabbi Gross, *Or Yisra'el*, p. 198, correctly points out that *Shulhan Arukh*, *Yoreh De'ah* 100:1, declares, “A *beriyah*, that is, an ant etc., is not nullified even [in food] a thousand times [as great].” That statement is in direct contradiction to the ruling of *Arukh ha-Shulhan*.

Nevertheless, it should further be noted that R. Abraham Benjamin Samuel Sofer, *Teshuvot Ketav Sofer*, *Yoreh De'ah*, no. 63, cites early-day authorities who maintain that a *beriyah* is nullified when adulterated in 960 parts of a permissible foodstuff and rules that, although that opinion is not normative, all authorities would agree that a *beriyah* that is itself disdainful (*pegumah*) becomes nullified in such a quantity of permissible food.

38. See the terminology employed by Rambam, *Hilkhot Ma'akhalot Assurot* 15:4.
39. See *Tosofot*, *Hullin* 95a, s.v. *sefeko* and *Sukkah* 9b, s.v. *ha*; Rosh, *Hullin* 7:37; *Taz Orach Hayyim* 632:3 and *Yoreh De'ah* 104:1; *Pri Hadash*, *Yoreh De'ah* 104:3; and *Hokhmat Adam* 51:1.
40. See also *Bedikat ha-Mazon ke-Halakhah*, I, 7: introd., note 1
41. Rashba, *Torah ha-Bayit*, *bayit dalet*, *sha'ar dalet*, rules that a non-kosher pot that becomes mingled with a larger number of kosher pots becomes nullified. Even though the pot can be rendered permissible by means of a *kashering* process, that procedure is not required because of the expense and labor entailed in such a procedure. R. Aaron ha-Levi, *Bedek ha-Bayit*, *ad locum*, disagrees and rules that, since the prohibited substance absorbed in the walls of the utensil can be purged by *kashering*, that substance is regarded as recognizable and hence not subject to nullification. That dispute is mirrored in a controversy between *Shakh*, *Yoreh De'ah* 102:8 and *Havat Da'at*, *Yoreh De'ah* 102:3. A similar dispute exists between *Pri Hadash*, *Yoreh De'ah* 102:8, who regard nullification to be efficacious even when the taste of a forbidden substance might be detected by a professional taster, and *Shakh*, *Yoreh De'ah* 109:8 and *Pri Megadim*, *Yoreh De'ah*, *Sifte'i Da'at* 102:3, who rejects that position.

The most obvious analysis of the controversy between *Torat ha-Bayit* and *Bedek ha-Bayit* is that it centers upon the issue of whether potential separation and removability of a prohibited substance renders it “recogniz-

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able” for purposes of Halakhah. If so, the dispute between *Kereti u-Peleti* and *Pri Magadim* simply mirrors the earlier controversy of *Torah ha-Bayit* and *Bedek ha-Bayit*. See R. Shimon Shkop, *Sha’arei Yosher, sha’ar gimmel*, chap. 19. Cf., however, R. Chaim Oberlander, *Or Yisra’el*, p. 182.

Rabbi Oberlander cites rulings in other areas of Halakhah that also seem to hinge upon the resolution of this issue. *Teshuvot Yad Eliyahu*, no. 88, discusses the case of a Torah scroll that is unfit for use because it contains an error that becomes mingled with other *kosher* Torah scrolls and rules that the invalid scroll becomes nullified among the valid scrolls. *Teshuvot Hatam Sofer, Yoreh De’ah*, no. 277, disagrees and asserts that, since by careful examination of the full text of each of the scrolls the invalid scroll may be identified, that scroll does not become nullified. Rabbi Oberlander suggests that the controversy between *Yad Eliyahu* and *Hatam Sofer* centers upon precisely this issue, i.e., whether potential identification of a defect, albeit only upon expenditure of significant effort, renders the defect presently “recognizable” for purposes of Halakhah. He also draws attention to the statement of *Arukh ha-Shulhan, Yoreh De’ah* 100:7, to the effect that, were it not a *beriyah*, a fertilized egg that could be recognized as such upon meticulous external examination, that becomes intermingled with a large quantity of unfertilized eggs, would become nullified despite the fact that the fertilized egg is potentially identifiable.

42. See *Bedikat ha-Mazon ke-Hilkhatah*, I, 2: introd., note 1.
43. See also *Hokhmat Adam, Binat Adam, sha’ar rov ve-hazakah*, no. 9.
44. See *Kereti u-Peleti, Kereti* 84:16 and *Pri Hadash, Yoreh De’ah* 84:31. Cf., however, *Zemah Zedek, Piskei Dinim, Yoreh De’ah* 84:9, who asserts that, even according to *Shakh*, the food is prohibited only if insects had been found in the fruit prior to cooking. For further discussions of the status of cooked foods that may be insect infested see *Darkei Teshuvah* 84:131.
45. *Hokhmat Adam* 38:5 explains *Taz’* position on the basis of the fact that the rule that a *beriyah* cannot be nullified is the product of a rabbinic edict. Hence, in principle, if there is a question with regard to whether the prohibited organism is still a *beriyah* or whether it has lost that status by virtue of having become crushed, the food may be regarded as permissible on the basis of the rule that rabbinic edicts do not extend to situations of doubt. That principle, explains *Hokhmat Adam*, does not apply in cases of *ithazek issura*, i.e., in situations in which the object was known with certainty to have been forbidden and the sole question is whether its status has changed. Hence, explains *Hokhmat Adam*, *Taz* maintains that, so long as there exists even a “remote possibility” that there never was a forbidden insect in the fruit, the foodstuff was never known to have been forbidden (*ithazek issura*) and hence, despite the fact that the majority of such fruit is infested, the cooked fruit is permitted because of the possibility that any organism that was present may have been crushed. Since it is certain that the insect represents but a tiny fraction of the entire quantity of cooked food, the resultant doubt is only with regard to whether the rabbinic edict canceling nullification in cases of *beriyah* is applicable. Since

the doubt is with regard to the applicability of a rabbinic prohibition, the food is permissible.

46. Cf., however, Rabbi Gross, *Or Torah*, p. 198, who assumes that this organism loses its status as a *beriyah* upon cooking. *Hazon Ish, Yoreh De'ah* 14:6, rules that an insect does not retain the status of a *beriyah* if its shape becomes distorted in cooking. It is not clear that that phenomenon is likely to occur with an extremely tiny organism.
47. Rabbi Oberlander, *Or Yisra'el*, Tishri 5765, pp. 111-115, endeavors, *inter alia*, to demonstrate that: 1) under these circumstances the act of *borer* is only rabbinically proscribed; 2) since it is unlikely that copepods are immediately present in the first gush of water released when the faucet is opened, the act of *borer* is in the nature of *gerama*, i.e. opening the faucet is not the proximate cause of any resulting separation; and 3) *gerama* is permitted with regard to rabbinic prohibitions. Of course, each of those points merits careful analysis and substantiation. However, Rabbi Oberlander's discussion is predicated upon a fundamentally flawed presumption. It is quite clear that it is extremely unlikely that copepods will be present in the first gush of water following attachment of a filter. However, if any such creatures are present in the water they will certainly be trapped by the filter when they do appear and will remain in close proximity to the filter at the time of every future use of the filter. Accordingly, if, for example, a filter is installed in an infested building early in the week, opening the faucet some days later on *Shabbat* will result in an immediate act of *borer*.
- In sharp contrast, Rabbi Rosner, *Or Yisra'el*, p. 126, cites the thesis propounded by *Hazon Ish, Orach Hayyim: Mo'ed* 36:1, with regard to culpability for use of a water mill on *Shabbat*. *Hazon Ish* asserts that, with regard to activities proscribed on *Shabbat*, there is no distinction between proximate cause and *gerama* with regard to acts that are customarily performed by way of *gerama*. *Hazon Ish, ibid.*, 156: *le-siman* 252, makes the same point with regard to agricultural irrigation, i.e., he regards opening a dam in order to facilitate the flow of water for the purpose of irrigating vegetables to be a biblically culpable act even in the absence of proximate cause and also adopts the same position with regard to setting electrical machines into operation on *Shabbat*. The paradigm upon which the principle is predicated is, according to *Hazon Ish's* analysis, acts of trapping that are forbidden on *Shabbat*, i.e., a trap is set by the hunter but the animal is caught only later by means of its own act of triggering the trap. *Hazon Ish* reasons that proximate cause is lacking but that the hunter is nevertheless liable because such is the normal manner of carrying out the act of trapping. Rabbi Rosner applies the same principle to use of a filter: since "removing the impediment" to the free flow of water through a filter is the usual form of "separation" of foreign objects from the water, such an act, he contends, constitutes a biblical transgression according to *Hazon Ish*.
48. Cf., however, R. Moses Schick, *Teshuvot Maharam Shik, Orach Hayyim*, no. 134, who regards such selection as involving a prohibited act of *borer*. Rabbi Joel ha-Levi Rosner, *Or Yisra'el*, p. 118, finds support for that posi-

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tion in the comments of Ramban, *Shabbat* 144b, who remarks that inability to partake of a particular food because of an ancillary Sabbath prohibition does not lead to a problem of *borer*. The implication of that statement is that an intrinsic prohibition attendant upon the foodstuff *qua* foodstuff does give rise to such a problem.

49. See also *Pri Hadash*, *Orah Hayyim* 500:6; *Shulhan Arukh ha-Rav*, *Orah Hayyim* 500:18; *Mishnah Berurah*, *Sha'ar ha-Ziyyun* 500:49; R. Abraham Borenstein, *Eglei Tal*, *mel'ekhet borer*, sec. 11; *Minhat Hinnukh*, *Mosekh ha-Shabbat*, *mel'ekhet borer*, sec. 6; R. Shalom Mordecai Schwadron, *Da'at Torah*, *Orah Hayyim* 500:6; no. 3; and R. Shimon Grunfeld, *Teshuvot Maharshag*, I, no. 47.
50. A similar distinction is drawn by *Eglei Tal*, *mel'ekhet borer*, sec. 20 and *Tehilah le-David* 319:25. Cf., *Magen Avraham* 466:8; *Pri Megadim*, *Orah Hayyim*, *Eshel Avraham* 319:3; *Shulhan Arukh ha-Rav*, *Orah Hayyim* 466:8; *Da'at Torah*, *Orah Hayyim* 500:6; *Shevitat ha-Shabbat*, *mel'ekhet borer*, sec. 10; and *Tehilah le-David* 319:25, who apparently maintain that separation of such a forbidden substance constitutes a rabbinic transgression. However, *Eglei Tal*, *mel'ekhet dash* 17:54, maintains that such separation constitutes a biblical prohibition.
51. See also *Tehilah de-David* 319:25. Rabbi Rosner, *Or Yisra'el*, pp. 121-122, takes sharp issue with *Hazon Ish's* position. *Hazon Ish's* ruling is based on the consideration that a beverage may be gently poured from a cup of liquid into which an inedible object has been introduced. Similarly, according to *Hazon Ish*, there is no problem of *borer* other than with regard to the last portion of water flowing from the faucet; hence if that water is wasted there is no act of *borer*. In the case of liquid into which an inedible object has fallen, argues Rabbi Rosner, the liquid is spilled in a normal manner and does not "appear as separation." However, use of a filter, he contends, clearly represents "separation" of any and all water in the faucet from the creatures left behind.

Minhat Yizhak also notes that the faucet always remains filled with water when it is turned off and, moreover, there is no separation between that water and the source of the water supply. Therefore, since some water always remains in the system, allowing some water to go to waste would be superfluous. Rabbi Rosner challenges that statement and indeed it would seem that in conventional sinks turning off the faucet impedes the flow of water and leaves the faucet empty. Hence there is "separation" of the filtered entities from a clearly demarcated body of water.

Minhat Yizhak further notes that *Hazon Ish* permits use on *Shabbat* of a teapot with a built-in strainer. *Minhat Yizhak* apparently understands *Hazon Ish* as maintaining that, since the strainer remains in place even when straining is not required, i.e., when there are no tea leaves in the teapot, there is no prohibition of *borer* provided that the tea is poured for immediate consumption. See *infra*, note 53. Similarly, argues *Minhat Yizhak*, since the filter remains in place even when water is drawn for washing, there is no prohibition of *borer*.

Rabbi Rosner, however, argues that *Hazon Ish* permits use of such a teapot only because the strainer is an integral and inseparable part of the

teapot. A filter, however, is readily removable and hence does not become part of the faucet. See also Rabbi Oberlander, *Or Yisra'el*, Tishri 5765, p. 110. Cf., *Shemirat Shabbat ke-Hilkhatah*, I, 3:57, note 166, who explains *Hazon Ish's* ruling on the basis of R. Shlomoh Zalman Auerbach's view that a utensil that is used only for food that will be consumed immediately is not regarded as a "utensil" for purposes of separation. Separation other than by means of a utensil for immediate consumption does not constitute a forbidden act of *borer*.

It should also be noted that *Hazon Ish* advances his opinion with regard to use of the teapot only tentatively (*mihu efsbar*), Cf., however, R. Chaim Kanievsky, *Ta'ama de-Kra: Hanhagot ha-Hazon Ish*, sec. 40, who reports that *Hazon Ish* permitted use of such a teapot in his household without care being taken to leave some residual liquid in the utensil with the tea leaves. See, however, R. Samuel ha-Levi Woszner, *Teshuvot Shevet ha-Levi*, I, no. 84, who refuses to permit use of a teapot with a built-in strainer on *Shabbat*.

52. For an analysis of *Hazon Ish's* position see R. Chaim Oberlander, *Or Yisra'el*, Tishri 5765, pp. 107-110.
53. Rabbi Oberlander, *ibid.*, p. 110, observes that according to *Minhat Yizhak's* understanding of *Hazon Ish*, use of a filter is permissible provided that some liquid is left behind and only if the water is obtained immediately prior to its consumption but not if the water is to be only consumed only at a later time.

The requirement that the water be used immediately would require that filtration take place at the point at which the water leaves the faucet rather than, for example, at the site of the intake valve since water filtered at a remote site will not necessarily emerge immediately. However, Rabbi Rosner, *Or Yisra'el*, pp. 134-135, finds grounds to permit even such filters. As has been stated earlier, there is no problem with regard to filtration of water to be used for washing since there is no reason to prefer insect-free water for such purposes. Filtration of water that remains in the plumbing system is an effect that is not at all intended by the person presently draining water from the faucet. An act producing an unintentional result is permitted unless the unintended result is a necessary outcome of the otherwise permissible act (*pesik reisha*). Since the next use of water remaining in the system may well be for purposes of washing, and since insect-free water is not required for that purpose, "separation" of insects from water to be used for such purposes is permitted. Accordingly, there is no certainty that a forbidden form of "separation" will indeed take place. Since forbidden "separation" is not a necessary outcome and, if it does result, is unintended, argues Rabbi Rosner, use of such filters on *Shabbat* is permissible.

54. See *New York Times*, June 8, 2004, p. F5 and www.healthyswimming.org.
55. *New York City 2003 Drinking Water Supply and Quality Report*, p. 11.
56. *Loc. cit.*
57. *Ibid.*, p. 9.
58. *Ketubot* 39a, *Yevamot* 12b and 72a and *Niddah* 45b.
59. Although the principle "it is not in heaven"(Deuteronomy 30:11) estab-

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lishes that subsequent to revelation of the Torah at Sinai there will never be a supplemental revelation of halakhic information, that principle does not preclude prophetic revelation of factual information having halakhic ramifications. See R. Zevi Hirsch Chajes, *Torat Nevi'im: Eleh ha-Mizvot*, chap. 2 and addendum to chap. 2, as well as R. Elchanan Wasserman, *Kuntres Divrei Soferim*, no. 5, secs. 3-7.

60. A determination of the percentage of animals presently declared non-kosher on the basis of *sirkhot*, or adhesions on the lungs, would not establish the definition of *mi'ut ha-mazui* for three reasons: 1) Determining the percentage of animals having *sirkhot* would establish only the threshold level of *mi'ut ha-mazui*, i.e., a percentage that certainly constitutes a *mi'ut ha-mazui*, but leave open the possibility that a lower frequency may also constitute a *mi'ut ha-mazui*. 2) Many types of *sirkhot* are declared non-kosher because of disputes among halakhic authorities with regard to their status. Thus, in talmudic times the number of animals actually declared non-kosher for that reason may well have been less since at least some of those *sirkhot* may have been accepted as kosher. 3) The incidence of *sirkhot* is subject to great fluctuation depending upon the age of the animal, the fodder it is provided and various other factors.
61. Cf., *Teshuvot Dvar Shmu'el*, no. 260. *Mishkenot Ya'akov, Yoreh De'ah*, no. 17, asserts that 10% constitutes a *mi'ut ha-mazui*. *Bedikat ha-Mazon ke-Halakhah* reports that this position was also endorsed by R. Shlomoh Zalman Auerbach. However, the same author reports that R. Joseph Shalom Eliashiv, R. Nissim Karelitz and R. Chaim Kanievsky maintain that *mi'ut ha-mazui* should be defined as 5% In the second edition of that work (Jerusalem, 5765) Rabbi Eliashiv is quoted as maintaining 4% is a *mi'ut ha-mazui*.
- R. Samuel ha-Levi Woszner, *Teshuvot Shevet ha-Levi*, IV, no. 81, challenges the relevance of the sources upon which that definition is based and asserts that examination may be required even when the percentage is much lower. However, *Shevet ha-Levi* fails to present a precise definition of *mi'ut ha-mazui* and implies that a decision to declare examination mandatory is to be made "in accordance with the judgment of the decisor." Cf. also, *Teshuvot ha-Rivash* no. 191, who asserts that a *mi'ut ha-mazui* is to be defined as a frequency close to one half (*karov le-mehezah*).
62. Assuming that *mi'ut ha-mazui* is defined as 10%, for purposes of establishing a *mi'ut ha-mazui* it would be necessary to determine that there is a 10% chance that a forbidden creature will be present in the quantity of water drawn on any given occasion. For other opinions regarding the determination of a *mi'ut ha-mazui* see *Bedikat ha-Mazon ke-Halakhah*, I, 4:2, note 4.

Moreover the concept of *rov* and the exclusion of *mi'ut ha-mazui* applies only when the presence of a forbidden entity has not been established with certainty, e.g., an animal or fruit. However, when the presence of a forbidden entity has been established in any particular place with certainty (*kavu'a*), but the person is in doubt as to whether the entity he has selected is permitted or forbidden, the principle of *rov* does not apply (*kol kavu'a ke-mehezah al mehezah dami*). It is arguable that since all the water

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in the faucet and plumbing as well as in the distribution system and the reservoir is contiguous and it is known with certainty that there are at least some copepods in the system, turning on the faucet is tantamount to removing the water from its source and hence the principle of *rov* does not apply.

63. The situation in such buildings is comparable to that which results from the procedure commonly employed to avoid the tedious and time-consuming examination of vegetables in which insect infestation is likely, *viz.*, the vegetables are soaked in a solution containing vinegar or some other agent that serves to dislodge insects that may be present. When and if the efficacy of the method used has been demonstrated, the foodstuff is no longer deemed to be *mubzak be-tola'im* and hence further examination is unnecessary.