

ALTERNATIVE KEVURA METHODS

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This teshuvah was adopted by the CJLS on June 7, 2017, by a vote of 10 in favor, 7 opposed, and 3 abstaining. Members voting in favor: Rabbis Aaron Alexander, Pamela Barmash, Noah Bickart, Elliot Dorff, Joshua Heller, Jeremy Kalmanofsky, Amy Levin, Daniel Nevins, Micah Peltz, Avram Reisner and David Schuck. Members opposed: Rabbis Baruch Frydman-Kohl, Reuven Hammer, David Hoffman, Gail Labovitz, Jonathan Lubliner, and Paul Plotkin. Members abstaining: Rabbis Susan Grossman, Jan Kaufman, and Iscah Waldman,

Question: Contemporary Jews sometimes seek alternative mortuary methods in order to be more ecologically sustainable and economical. Can Jews utilize alternative methods or is burial required? What does Halakhic tradition demand for how Jews treat dead bodies?

Answer:

The Torah's very first chapters assert that human remains should decompose in the earth. Describing human mortality, God tells Adam [Genesis 3.19]: "You are dust and to dust you will return."

In this spirit, the optimal [לכתהילה] Jewish treatment for human remains has always been in-ground burial.

The Torah legislates this norm at Deuteronomy 21:22-23:¹

לא-תלין גבלתו על-העץ, כי-קבור תקברנו ביום ההוא

The Committee on Jewish Law and Standards of the Rabbinical Assembly provides guidance in matters of halakhah for the Conservative movement. The individual rabbi, however, is the authority for the interpretation and application of all matters of halakhah.

¹ This commandment comes in the context of the rules for executing criminals. It might seem off-putting to base the treatment of all bodies upon this unfortunate paradigm. Yet the meaning of the Deuteronomy passage appears to be this: *even a justly executed criminal, properly disgraced by public hanging or impaling, still deserves the same dignified burial due to all people.*

“Do not leave his corpse hanging on the post overnight. Rather you must bury him that same day.”

R. Yoḥanan [*b. Sanhedrin* 46b] derives from this verse both an explicit biblical prohibition against leaving a human body unburied as well as an allusion [רמז] to a positive biblical command to bury human bodies in the earth. Maimonides [*Sefer HaMitzvot* positive 231, negative 66], Nachmanides [Comments to *Sefer HaMitzvot*, Root 1, s.v. “Fourth Answer”], *Smag* [positive 197, negative 104], *Sefer HaHinukh* [536-7] and others consider each of these to be biblical mitzvot.

However, the *sugya* in *Sanhedrin* continues with argumentation that fits poorly with a putative positive biblical mitzvah to bury.² The Talmud considers the possibility that in-ground burial was merely the prevailing custom, but that other mortuary methods might also satisfy the prohibition against leaving a body unburied. As a result, important *Rishonim* and *Aḥaronim* [e.g. R. Ḥananel to *b. Sanhedrin* 46b, *Leḥem Mishneh* to *Avel* 12.1, and probably R. Yosef Karo himself in *SA YD* 362.1] dissent from Rambam’s view and consider in-ground burial to be a rabbinic norm, not required by the Torah itself. R. David Golinkin adopts this view in a 1996 responsum.³

Even if burial is “merely” a rabbinic imperative, Jewish treatment of bodies is not only a matter of personal preference. Rambam rules [*Avel* 12.1] that if a person asks to be left unburied, that request should be ignored. Nachmanides agrees that even if an individual or his family would consent to non-burial, that would be legally immaterial, for it would shame all humanity to leave any corpse unburied: “It is impossible that someone,

² There is no need to explore all the hermeneutical problems in the passage. I will note only that editorial voice poses questions and proffers answers that would be relevant only regarding rabbinical enactments, and named Sages decline to invoke a biblical law to explain their views. R. Yair Bacharach [*Havvot Yair* 139] considers this entire passage as only a rhetorical exaggeration [אסמכתא] and consider burial not technically a mitzvah, except in the case of those executed by the courts.

³ http://responsafortoday.com/vol6/2_6.pdf

somewhere, at the ends of the earth, would not object.”⁴ Ramban understands why funeral practices are so ethically and culturally important: how we treat dead bodies articulates our values about living people, and the dignity of all people would be at stake. Diverse cultures will assess honor and disgrace differently. But whatever our contingent cultural judgements, mortuary practices display attitudes toward human life. For many centuries, traditional Jews expressed their reverence by returning Adam to *adamah*, and burying bodies in the ground.

As in so many areas, modern life raises new questions and poses new problems. Jews are asking about the ecological and fiscal sustainability of our burial practices; cemeteries are filling up, especially in the Holy Land, as well as in many American population centers. One might legitimately ask how much flexibility Jewish law has for alternative mortuary methods. The evolving technologies examined below are not in common use today. So while this paper will address these proposed new methods, our first task is to identify the major Halakhic requirements of treating human remains, providing tools and frameworks for evaluating today’s alternative methods and future novel technologies.

A Mitzvah to Bury

As noted, many authorities, Maimonides foremost, consider in-ground burial a formal mitzvah דאורייתא. Given these authorities’ stature and Judaism’s long-standing traditions, לכתחילה we should always encourage interment and always discourage other practices.

However, perhaps there are other practices that might be defensible, if discouraged. In order to explore those possibilities, let us begin with a digest of the major rules and values of Jewish burial norms and customs.

First, while permanent in-ground burial [קבורת שדה in modern Hebrew parlance] has become the exclusive Jewish practice, it was not always the case. Jews have used various

⁴ *Torat HaAdam* in *Kitvei HaRambam* [Jerusalem: Mossad HaRav Kook, 1974] ed. Chavel, 2:118. Cf. RH 9b.
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methods to fulfill the demands of קבור תקברנו לא תלין, and to return human bodies to the earth. In the words of Tur [YD 362]: “In every place according to its own custom.”

Early sources attest that burial practices varied with climatic conditions. R. Natronai Gaon [d. 861] wrote:⁵

Not all lands are the same. In a place which is hot and dry like the Land of Israel they place the dead body in a cave and add no earth whatsoever, for they rely on the abundant dry heat to desiccate the body and prevent maggots. But in Babylonia, which lacks dry heat, the custom is to bury a body in a coffin and place earth on the eyes and the face. If it is the rainy season, we bring dry earth [i.e. not mud] to place upon the face, then cover the face with a garment, and place additional earth on top of the garments covering all the body. Once that earth has reached the height of a *tefah*, we place a board to close the casket, then continue heaping up much more earth until it reaches the height of a cubit or more. The reason we place earth upon the body is that earth is its healing, as it is said, *unto the earth you shall return*.

Maimonides [*Avel* 4.4] prescribes a similar method derived from *m. BB* 6.8 and *b. BB* 100b-101b: “One digs caves in the earth, and then hews a niche in the side of the cave. One buries the person there with his face upward. Then one returns the earth and stones. One should bury in a wooden coffin.”

Rambam’s recommendation of wooden caskets is actually a minority view, and permits a brief survey of coffin rules. Observant Jews are accustomed to the norm of the “plain pine box,” using only the simplest wooden coffin, unlined, without metal, fully biodegradable,

⁵ This responsum was quoted by several medieval authors, including Tur *YD* 362. I quote here the version cited by Nachmanides in his compendium of mourning laws, *Torat HaAdam, Kitvei Ramban*, 2:116. This version describes the Land of Israel as a place of שרב, dry heat, while Tur and most others witnesses describe it as a land of ברד, cold frost. As Chavel observes, this seems unlikely, and Ramban’s text seems better. R. Yosef Karo also considers the word ברד mistaken, but proposes instead that the Land of Israel is characterized by the availability of כוכין, or cave-crypts, rather than by any particular climate.

like the body itself.⁶ Yet Halakhah actually prefers eschewing coffins altogether. In *y. Kilayim* 9.3 (41b), R. Yehuda HaNassi is quoted as requesting that the lower boards be removed from his coffin, so that his body decompose directly into the ground. Based upon this, Nachmanides [*Torat HaAdam* 2:117] writes that “the optimal mitzvah is burial literally in the earth.” R. Yosef Karo reports this as law [*SA YD* 362.1]: “If one places the body in a coffin and buries it in the earth, one has not violated the prohibition. Nonetheless, it is best to bury in the earth directly.”

If using coffins, must they be of any particular material? No Talmudic texts legislate that caskets must be made of wood. T. *Ohalot* 2.2 and b. *Niddah* 27b discuss ceramic and stone coffins, without criticism. R. Yitzhak Yaakov Weiss [d. 1989] rules that “presumably [מסתמא] there must be some reason” that Jews use only wood, although he can find no textual evidence for the tradition [*Minhat Yitzhak* 5.91]. As the saying goes, “Israel’s customs have the force of law.”

One virtue argument for the simple pine casket emerges from the discussion [b. *MQ* 27a-b] about limiting funeral expenses so that rich and poor are treated equally. The Talmud states that the wealthy were carried to the grave on a fancy bed [דרגש], while the poor were carried in a simple box [כליכה]. Since the poor were embarrassed by this social gradation even in the moment of death, which should be the great equalizer, the Sages mandated that all be carried out in a כליכה. This story does not address coffins as much as the processional – as if the rich were carried in a Cadillac and the poor in a Hyundai – and says nothing about appropriate building material. But it does exhort us to spend minimally, so that all are treated comparably. The plain pine casket best fulfills this virtue. It can usually be obtained for around \$650-900, as of this writing, in 2017. Heavier wood, polished, lined coffins can run from \$1,250 up to \$10,000 and more, and therefore should be discouraged. Green firms sell wicker coffins that cost \$1,250 and more. Cardboard and corkboard coffins are available for less than \$500. Since using no coffin at all is permissible, certainly these light materials are also appropriate.

⁶ Indeed this is a venerable tradition, traces of which can even be found in Midrash *Bereshit Rabbah* 19.8, which expounds Adam’s attempt to hide from God “amidst the trees of the garden” as foreshadowing that his descendants would ultimately lay in “wooden coffins.”

Another optimal feature of in-ground burial is, in Nachmanides' words, that "each person should be placed in his own grave" [*Torat HaAdam* 2:119]. *M. BB* 6.8 limits the number of niches per cave in order to ensure a distinct place for each person. *Semaḥot* 13.8 states that two individuals nor their bones should not be buried in a single grave. Rambam *Avel* 14.16 and *SA YD* 362.4 codify this as law, regarding such mingled burial as disgrace, בזיון.⁷

In practice, lack of adequate space often prevented complete separation. Archaeological findings show that ancient Palestinian graves mingled bones, apparently grouping them into family piles. This was also common in biblical times, giving deep meaning to the idiom that the dead "lie with their ancestors."⁸ In early modern times, R. Jacob Reischer [1670-1733, *Shvut Yaakov*, 2.95] reported from central Europe: "Go examine the people's practice throughout all Israel's diaspora, for they bury one next to another and one on top of another, even though this does not conform to the law" of separating graves. This practice is instantiated in famous European cemeteries, like Prague and Vilna.

Also, ancient practices display further variety. Although we have come to expect permanent burial in individual graves, the norm among ancient Palestinian rabbis was not קבורת שדה at all, but two-stage burial: depositing a person's remains in a temporary grave or in a cave, then after the flesh decomposed, gathering the bones and re-burying them in a family plot, either within smaller stone boxes called ossuaries or in no box at all. Although this may strike modern readers as macabre, archaeological findings confirm that secondary burial was practiced even in biblical times and was dominant among Palestinian Jews until Amoraic times, in the 5th century CE.⁹ This method is described as ליקוט עצמות or "bone-

⁷ See also the responsum of R. Hai Gaon [d. 1038] – cited by Ramban, *Torat HaAdam* 2:119-20 and by *Tur YD* 363 – that "the Sages were concerned lest two individuals' remains would touch." This concern seems to animate R. Akiva's comment at *Semaḥot* 12.8 insisting that the bones of different individuals not be mingled but kept in distinct ossuaries. As will be discussed below, multiple bodies can share graves only if sufficient earth separates each person's remains.

⁸ Eric Meyers, "Secondary Burial in Palestine," *Biblical Archaeologist* (1970) v. 33, pp. 2-29.

⁹ Meyers, "Secondary Burial." *T. Megillah* 3.15 reports that among the social welfare societies in ancient Jerusalem was a ליקוט עצמות which helped people with that need, as other groups helped comfort mourners or celebrate weddings and circumcisions.

gathering,” and is attested in numerous texts, including *m. MQ* 1.5 and *m. Sanhedrin* 6.5, and the associated *Yerushalmi*, as well as the extra-Talmudic tractate *Semaḥot*. An excellent description of the practice comes from *y. MQ* 1.5 (5a): “Initially they buried people in ditches. After the flesh decomposed, they would gather up the bones and bury them in coffins.”¹⁰ R. Yosef Karo quotes this passage verbatim at *SA YD* 363.4, affirming that this practice is permitted “where it is local custom.”

Given the contemporary Israeli crisis in cemetery space, some scholars advocate that Jews resume secondary burial.¹¹ Their case seems persuasive to me, although whether the practice will catch on, either among Halakhists or the general public, remains to be seen.

One key feature of secondary burial was that people’s bones came to rest, box by box, in family tombs. Jewish law frowns on removing human remains from one grave to another, as the very concept of secondary burial demands. However, the paradigm reason to override that objection is to bring a person to rest amidst family, as in this passage from *y. MQ* 2.4 [9b]: “It is a joy [שמחה] for a person to dwell in his own [family plot] ... It is pleasant [ערב] for a person that he be laid to rest near his ancestors.” This phrasing is cited by medieval and modern authorities alike.¹² When evaluating new mortuary methods, one important Jewish question is whether they would permit maintaining family tombs.

¹⁰ Current editions of *Yerushalmi* [also *Semaḥot* 12.8] say bones should be buried בריון, which commentators understand as בארזים, or “in wood.” Ramban’s version of the *Yerushalmi* read ארונם, “their caskets.” The *Shulḥan Arukh* reads ארון ש. ארון הגר”ש holds that “caskets” is the correct rendering of a Greek term, *Soros*, which became ארון or ארזים only by flipping the letters Z and R. *Tosefta KiFeshuta to MQ*, 1235.

¹¹ R. Rafi Ostroff, *Bone Gathering as Practical Halakhah*, *Techumin* 32 (2012), 387-392, as well as in unpublished papers and [lectures](#) by Prof. Yair Furstenberg of Ben-Gurion University. In early 2016, Yad Ben Zvi and Herzog College held a [conference on this theme](#), with presentations by both the aforementioned and others, several of which are available on Youtube. The permission to deposit a subsequent body in a vacated grave can be found in the writings of R. Avraham Itzhak HaKohen Kook [*Daat Kohen* #207] and R. Eliezer Waldenberg [*Tzitz Eliezer*, *Kuntres Even Yaakov* 7.49.8]. Additionally, the space crisis has prompted many Israeli cemeteries to engage in multiple-level burials, separating each grave with at least three or six *tefahim* of earth.

¹² See e.g. *Or Zarua* 1.755, *Tur YD* 363. Several modern authorities apply a flexible definition of *ancestors*, permitting reburial for the sake of laying one to rest among relatives besides parents. See R. Yechezkel Michael Tucachinski, *Gesher HaHayim* 1.26, R. Moshe Feinstein *Iggerot Moshe YD* 1.238, and R. Ovadya Yosef, *Yabia Omer YD* 7.38.

Many Jewish mortuary norms are rooted in eschatological beliefs about the afterlife and resurrection. For instance, some authorities condemn any practice besides in-ground burial, especially cremation, as tantamount to denying resurrection of the dead.¹³ In this paper I avoid referring to this realm of lore, important as it may be. While religion is always a mixture of the rational and the mythopoeic, it seems unwise to condition behavioral norms on lore which some will reject as superstition. Our norms should make sense even if contemporary people do not accept ancient ideas linking bodily decomposition to redemptive suffering and ritual atonement.¹⁴ The idea that anything could be “pleasant” for a dead person might be an example of such mythicizing. Still, as any community rabbi can attest, people are often moved to think of themselves and their loved ones buried alongside each other. It seems to me empirically accurate that people take comfort in the existence of family tombs.

In summary: the optimal traditional Jewish practice has been to bury people in individual graves in the earth, ideally without coffins, or at least with perforated, bio-degradable coffins that would permit the body’s return to the earth, ideally alongside family members. Over time, this became the nearly universal pattern. But across history there has been no single legitimate style of grave, deviation from which would be forbidden. Indeed, the *tannaim* themselves practiced in a way that would seem strange to moderns, but which earned legitimacy because it permitted people to burying loved ones’ bones in family tombs. As R. Elazar b. R. Tzadok reports in *Semaḥot* 12.9 about carrying out his father’s death-bed instructions regarding bone-collection: “As he did for his father, so I did for him.”

All these practices comport with the positive requirement to bury in the ground. Most classical and modern authorities consider this a biblical or at least a rabbinic commandment. Any honest reporting of Halakhah must affirm that לכתחילה this is the proper Jewish mortuary method.

¹³ E.g. R. Ḥayim Ozer Grozinski, *Aḥiezer*, 3.72: ומי שקובר את מתו מאמין בתחיית המתים והשורף הרי הוא ככופר בתורה"מ

¹⁴ See e.g. David Kraemer, *Meanings of Death in Rabbinic Judaism* [New York: Routledge, 2000], 35, and Meyers, op. cit, 26-27.

Cremation and Mausoleums

An alternative view has some support, too. For instance, others hold that the essential mitzvah is the prohibition against הלנת המת, leaving a body unattended. Ancient Jews regarded an unburied corpse with horror. Abandoning a person's remains to putrefy in public or be eaten by scavenger animals was considered a disgrace worse than death.¹⁵ The core reason for mortuary norms, the Talmud [*b. Sanhedrin* 47a] proposes, is to avoid בזיון, abjection. This anxiety was so serious that it inspired the laws of *met mitzvah*, the command that even high priests or Nazirites must violate the purity of their special status to tend to abandoned corpses [*b. Berakhot* 19b-20, m. *Nazir* 7.1=47a].

If הלנת המת is the key norm, there might be various methods to prevent the abjection of bodies, and in-ground burial might be only a well-entrenched custom, not itself a requirement. That premise is necessary for any argument that would permit, even grudgingly, cremation and mausoleum burial. Since the 1980s, our committee discouraged those methods as deviations from Jewish tradition, but stopped short of forbidding them on technical Halakhic grounds. Let us survey those issues.

Once cremation became an efficient industrial technology in the late 19th century, a few rabbis favored it. R. Hayim Castiglioni, chief rabbi of Rome, endorsed cremation not only in theory but in practice: upon his own death in 1911 he was cremated and his ashes buried in the Jewish cemetery in Trieste. However, the substantial majority forbade cremation, with many forbidding burying ashes in a Jewish cemetery.¹⁶ Still, Castiglioni and others

¹⁵ E.g. Jeremiah 7.33. See R. Saul Lieberman, "Some Aspects of After Life in Early Rabbinic Literature," in *Harry A. Wolfson Jubilee Volume on the Occasion of His 75th Birthday* [Jerusalem: American Academy for Jewish Research], 2:495-532, esp. 513-522. Presumably ancient people had more occasions than we to witness corpses left exposed. Their horror was no doubt appropriate, given the sights, smells and, yes, sounds of open air decomposition, as recounted in Mary Roach's black-comic journalistic work *Stiff: The Curious Lives of Human Cadavers* [New York: Norton, 2003], 61-72, which describes the University of Tennessee's Anthropological Research Facility [AKA "the Body Farm"] where cadavers decompose under the eyes of researchers to help forensics experts estimate times of death of discovered bodies.

¹⁶ Adam Ferziger, "Ashes to Outcasts: Cremation, Jewish Law and Identity in Early Twentieth-Century Germany," *AJS Review* 36:1 (April 2012), 71-102. This article treats, among other themes, R. Meir Lerner of Altoona and his well-known book *היי עולם*, which contained anti-cremation responsa from rabbinic authorities around the world.

had their arguments, citing *Tosafot* to b. *Hullin* 125b s.v. *yachol* which states that אין דרך לשרפו, “it is not the custom to burn” a human body – untraditional but evidently not “forbidden” – and R. Avraham Gombiner [*Magen Avraham* 311.3] that ליכא הכא בזיון המת כשנשרף, “there is no disgrace to the dead when the body is burned.

Among our movement, in 1933, R. Michael Higger wrote enthusiastically in favor of cremation (beginning his essay by surveying views of “sages who permit” and “pilpulists who forbid!”)¹⁷ In the mid-1970s, R. Isaac Klein wrote a responsum rebutting Higger and forbidding cremation, which he states affirms CJLS rulings of 1939 and 1954.¹⁸ Neither Higger’s nor Klein’s papers were formally taken up by the CJLS. In 1986, the committee unanimously endorsed the opinion of R. Morris Shapiro that shared R. Klein’s negative assessment of cremation as a “deviat[ion] from sacred established tradition,” but stopped short of forbidding it. R. Shapiro found the textual arguments against the practice weak: “the taboo modern authorities have protested against cremation [is] of their own making. There is room for leniency among the *poskim*.” Rabbis should discourage the practice but could choose to perform funerals associated with cremation, he rules. Following the procedure, the ashes [“cremains”] should be buried in Jewish cemeteries.¹⁹ I concur with R. Shapiro and the others that there is a cogent, minority view that would permit cremation. But contemporary Jews should instinctively recoil before burning human remains, recalling the millions of our people whose bodies went up in smoke during the Shoah. R. Shapiro himself was a student of *Yeshivat Hokhmei Lublin* until September 1, 1939, whose family members were murdered, and who himself spent most of the war years hiding in a cave. In his memory, I would say that cremation is technically defensible, but to a Jew after the Shoah, I hope it is also repugnant.

¹⁷ *Proceedings of the CJLS, 1920-1970*, ed. David Golinkin 3:1393-1413.

¹⁸ http://www.schechter.edu/IM_Lib/Responsa.pdf

¹⁹ www.rabbinicalassembly.org/sites/default/files/public/halakhah/teshuvot/19861990/shapiro_cremation.pdf. Our committee re-affirmed this ruling in 2015, in R. Joshua Heller’s [paper on the postponed shiva](#).

Regarding mausoleums, in 1983 the CJLS nearly unanimously (with one abstention) endorsed the view of R. Morris Feldman that while rabbis should discourage above-ground burial as deviating from tradition, there no formal Halakhic impediment to it.²⁰

The conclusion emerging from those rulings, which have governed Conservative practice for decades, is that while we should always prefer in-ground burial, alternative methods of cremation and above-ground burial do not violate הלנת המת, do not expose a body to the abject disgrace of public decomposition, and do not constitute ניוול המת, desecrating a body.

²⁰ <http://www.rabbinicalassembly.org/sites/default/files/public/halakhah/teshuvot/20012004/20.pdf>, based largely on *b. MQ 8b*, and commentaries – suggesting the Sages knew of an above-ground קבר בנין, which he regards as resembling a modern mausoleum. R. Golinkin’s aforementioned 1996 responsum, accepted unanimously by the Israeli *Vaad Halakhah*, interpreted those sources differently. קבר בנין does not refer to above-ground burial, Golinkin holds, but rather to an above-ground memorial atop an in-ground grave.

Bodies and Graves are Forbidden for Use

Halakhah expresses reverence for bodies by prohibiting the use of human remains and graves for economic gain or personal convenience [*b. AZ 29b*, Maimonides, *Avel* 14.21, *SA YD* 349.1].²¹

This sounds at first like a ritual prohibition, but adumbrates a central imperative of modern philosophy: regard other people as ends in themselves, not as tools to attain your desires.²²

You might think people would not need Halakhah to restrain them from making tools from bones, or digging up coffins to build cabinets. Still, one has seen crazier things, both in text and in real life. *B. Niddah* 55a reports that the Sages declared a dead person's skin ritually impure (hair, skin and nails are considered not truly part of the body) "lest a person make a blanket from his father's or mother's skin." This seems bizarre, until you discover that for a few thousand dollars, companies can turn cremains, which are mostly carbon, into artificial diamonds so you can keep your loved ones around your neck, or in your earlobes.²³ I hope it is not necessary to say such "cremorials" are forbidden. As we will see, there is at least one common alternative mortuary proposal for which the prohibition on הגואה is relevant.

Cemeteries are also considered sacred. Jewish norms forbid eating there, and forbid using graveyards as pastureland or as a path for aqueducts and other public utilities [*b. Megillah* 29a, *SA YD* 368.1 and R. Moshe Isserles there]. As cemeteries age and fill up, some seek uses for unproductive land. For instance, a Spanish cemetery recently built solar panels around

²¹ Interestingly, Rambam and R. Karo apply this to all human bodies, although the commentators to *SA* bring a strong textual, if not moral, argument that this law should apply דאורייתא only to the Jewish dead, and to gentiles only by rabbinic legislation.

²² This is the famous "second" or "humanity" application of Immanuel Kant's "categorical imperative." *Groundwork of the Metaphysics of Morals*, ed. and trans. by Allen W. Wood, in the *Rethinking Western Tradition* series [New Haven: Yale, 2002] 46-47: "Act so that you use humanity - as much in your own person as in the person of every other - always at the same time as end, never merely as means." One could argue that the dead body has ceased to be the "rational being" deserving of this protection, but that would be precisely the irreverent view religious cultures should resist.

²³ <http://www.lifegem.com/index.php>

its graves, to use the space for public benefit.²⁴ We might admire that ingenuity, but Jewish norms would forbid using cemetery land to generate electricity.

As a technical matter, natural earth, קרקע עולם, cannot be rendered forbidden for use. Only bodies themselves and human-made burial accoutrements like coffins are proscribed.²⁵ Thus, according to many interpreters, plants grown in cemeteries are not technically forbidden for economic benefit. However, when plants grow directly upon graves, using them would be disrespectful to those interred there [*Tosafot to Megillah 29b, s.v. Ain; YD 368.2*]. Additionally, proceeds from plants growing elsewhere in cemeteries should be used only to honor the dead. For instance, *Bach* [R. Joel Sirkes, *YD 368, s.v. v'od nireh*] and *Hatam Sofer* [R. Moshe Schreiber, *YD 2.327*] report that *Hevra Kadishas* would fund themselves by selling fruit and flowers from the edges of cemeteries.

With these Halakhic values and norms in our minds, we might now consider some innovative mortuary practices.

Modern Problems

Even those devoted to Jewish burial traditions might find themselves wondering about the sustainability and wisdom of our current practices.

Some raise concerns about land usage. As existing cemeteries fill up, new ones must open. Two square miles of the United States is taken up each year with new graves.²⁶ While that rate will not soon exhaust the vast spaces of America, even here there is a finite amount of

²⁴ <http://content.time.com/time/world/article/0,8599,1862364,00.html>

²⁵ *b. Sanhedrin 47b*. The sources debate whether earth dug up and then returned to fill a grave becomes a matter of human artifice and thus forbidden. Most Ashkenazi authorities follow Rosh in ruling that it does not, remaining impervious to the איסור הנאה [Tur *YD 264*]. This appears to be the view of R. Moshe Isserles [*YD 264.1*], and I have assumed this stance in the body of the paper. However, Beit Yosef reports that most Spanish authorities ruled the opposite and leaves the matter as “requires further study.” Radbaz rules with the *Sefaradim* [2.741]. If one takes the stringent view, then plants growing directly above graves are forbidden not merely as a gesture of respect, but more strictly proscribed.

²⁶ Mark Harris, *Grave Matters: A Journey Through the Modern Funeral Industry to a Natural Way of Burial* [New York: Scribners, 2007], 56.

land, especially near population centers. Moreover, what will happen to graves in already filled cemeteries? Do we imagine that today's cemeteries, with one person per grave, will remain intact for two or three centuries? Forever? And in economic terms, funds once contributed toward "perpetual care" cannot sustain cemetery maintenance forever, as older cemeteries already know.

In Israel, the space problem is acute. Spaces for קבורת שדה are rapidly disappearing, and tens of thousands of people have already been buried in above-ground "parking garages." These differ from typical North American mausoleums. They are essentially human-made superterranean caves, built from concrete and natural earth. After a casket is consigned within, each burial chamber is filled with natural earth. This is unlike mausoleum burial, which seals bodies in stone, leaving only air pipes to emit the gaseous waste of decomposition. Israeli above-ground burial essentially reshapes the earth through landfill then buries within, rather than burying above the earth.

Another commonly raised problem concerns environmental damage of in-ground burial. The typical American body enters the earth bearing three pounds of formaldehyde, amounting to millions of gallons of carcinogenic embalming fluid deposited into the earth each year, set amidst hundreds of thousands of tons of metal coffins and millions of tons of concrete tombs.²⁷ On this count, traditional Jewish practices are as green as those suggested by alternative burial advocates. We typically bury unembalmed remains in simple, biodegradable wood caskets. As noted, we could also use woodchip, cardboard or plant fiber coffins that would degrade even faster, or even better, use no coffin at all.

To avoid ground pollution, some consider cremation to be a sensible, greener method. This is dubious. It takes fuel, usually natural gas, to heat crematoria to between 1500-1900 degrees Fahrenheit, adding greenhouse gases. Human bodies often contain toxins (e.g. mercury from dental fillings) which can be released into the atmosphere during burning. Given the immense waste of North American industry and transportation, crematoria are

²⁷ Harris, *Grave Matters*, 40, and http://homefuneralalliance.org/wp-content/uploads/2015/04/Green-Burial-Statistics_MaryWoodsen.pdf

small contributors to air pollution. However, in other countries, cremation is thought to be a significant source of mercury emissions.²⁸

People also raise questions about the economic dimensions to Jewish burial traditions. The cost of graves and memorial stones, cemetery care over time, the services of the funeral home, caskets, shrouds can all add up. Might other methods be more economical? Should that matter? Cremation is cheaper than burial, often by \$2,000-\$4,000. Mausoleum burial tends to be much more expensive than interment, often by more than \$10,000. However, this method is a one-time expense, while burial often entails subsequent maintenance fees, so the difference washes out over time.

For these and other reasons, innovators seek more environmentally friendly and sustainable mortuary methods, a few of which we will survey here. None of these are widely practiced today, but could become more common.

Alkaline Hydrolysis

Hydrolysis literally means “decomposition in water,” and is marketed as “green” “flameless” or “water cremation.” Those may sound like slick slogans but they are not misleading.²⁹ Cremation and alkaline hydrolysis [AH] have the same basic idea: dissolving the body in an external medium. Instead of intense heat, AH uses a solution of 95 percent water and 5 percent alkali, either sodium hydroxide or potassium hydroxide. The body is submerged in the solution and – depending on how high the temperature and pressure – the body’s soft tissue dissolves within three to 12 hours, washing into an inert, sterile solution, which can be discharged safely into municipal sewer systems. AH leaves a residue of decollegated and disarticulated bones. AH proprietors Brandon Ross of Biosafe

²⁸ Nearly all Japanese and around 85 percent of Indians are cremated, as are 75 percent of Britons, and 65 percent of Canadians and Australians. In France and the US, cremation and burial rates are about even, each around 45 percent.

²⁹ Most what follows derives from Philip R. Olson, “Flush and Bone: Funeralizing Alkaline Hydrolysis in the United States,” in *Science, Technology and Human Values*, 2014 39(5): 666:693, and from a private conversation with the author, a professor at Virginia Tech, on December 8, 2015. Mary Roach also discusses AH, which she calls “tissue digestion,” in *Stiff*, pp. 251-257.

Engineering and Steven Schaal of Matthews International inform me in email communication [Dec. 4, 2015 and Jan. 5, 2016] that they cannot guarantee how much of the skeleton would remain intact. But some bones certainly survive the process.

Although there are few commercial providers, alkaline hydrolysis is legal for human use in 11 American states, including some with significant Jewish populations: Florida, Georgia, Illinois, Maryland and Minnesota.³⁰ The first commercial AH provider was Anderson-McQueen in St. Petersburg, FL, which began offering the service in 2011.

Many people react instinctively to AH with disgust. Perhaps many would agree with the 2013 statement by the Catholic Conference of Ohio, arguing successfully to ban AH in that state: “Dissolving bodies in a vat of chemicals and pouring the resultant liquid down the drain is not a respectful way to deal with human remains.”³¹ Our traditional Jewish reverence for the body might awaken in us a similar sense that this method is a kind of בזיון, or contempt, not a loving return to God’s earth.

However, of all the proposed alternative technologies, AH finds the greatest textual precedent, albeit in medieval technology. R. Solomon ibn Adret [*Responsa* 1.369, cited by *Beit Yosef* to YD 363 and R. Moshe Isserles YD 363.2] relates that a person instructed his children to bury him in a distant family tomb. When the death came, they were unable to make the trip, so they buried him temporarily at home. By the time they were ready to make the journey, decomposition was too advanced and the smell too bad. Could they pour lime on the body to speed decomposition,³² so they could transport the bones sooner? Rashba agreed: “Whatever is done to accelerate the decomposition of the flesh, for the purpose of taking him to the place he had instructed, is permitted ... There is no disrespect

³⁰ California approved AH hospitals and medical schools, but not for private consumers. New York and New Jersey are said to be considering AH. See <http://biocremationinfo.com/legislative>

³¹ Olson, 674, 680-681.

³² I cannot know what Rashba meant by טיך, but if it was calcium oxide, it would probably have preserved the body, not accelerated its decomposition. See <https://bonesdontlie.wordpress.com/2013/08/08/new-morbid-terminology-quicklime/>.

in this.”³³ Rashba’s approach should be understood against the background of the ancient two-stage burial, in which the flesh is not abandoned to public disgrace as it breaks down, and the essential burial happens to the bones. In contemporary AH, while some bone matter would be dissolved, the process would yield bones one could bury amid family plots in much smaller graves. It seems to me that AH permits a 21st century version of ליקוט עצמות.

Other *posekim* develop Rashba’s argument to legitimate this practice לכתחילה. R. David ibn Zimra [*Responsa* 1.484] relates an aggadic view that when the biblical spies claim that the Holy land “eats its inhabitants” [Num 13.32], they mean to say that Palestine quickly consumes the flesh of those buried there, shortening their purgatory, ushering them into paradise sooner. Some diaspora Jews wanted to mimic that effect by putting lime in their coffins. Radbaz condemns a stratagem for avoiding divine judgment, finding that the righteous should let “nothing but time” affect decomposition. Nonetheless, he declares the practice permissible: “The principle is that anything done for the honor or benefit of the dead is not to be considered disgraceful.”³⁴

Radbaz’s case was not an aberration. Jerusalem’s Sefardic 18th and 19th century rabbinic elite applied chemicals to dissolve the flesh of their corpses. R. Yosef Molkho [*Shulhan Gavoha*, to YD 362 n.2], relates that when he moved from Salonika to Jerusalem in 1748 he found this common practice among the rabbinic class: “I, the author, have witnessed here in Jerusalem that great sages and pious people have commanded before their deaths that a *tefah* of lime be put all around their bodies, above and below and on each side, to speed the decomposition. And so have I commanded in my will that they should do the same to me.”

³³ See also *Shvut Yaakov* 2.97, who permits applying lime to accelerate bodies’ decomposition during a 1713 plague, enabling burial among family tombs within cities, rather than in unsettled woods.

³⁴ Radbaz extends the point in another responsum [2.611] about transporting bodies for burial in the Holy Land. He notes that *m. Shekalim* 8.2 describes tools employed during secondary burial, including a rake [מגרפה] and mortar [מריצה]. One might think raking scattered bones and smashing them so they fit into containers (as Rambam understands מריצה, contra the Yerushalmi) would be forbidden, Radbaz says; but even such ungentle treatment is permitted if it facilitates a respectful final burial: “It is obvious that whatever is done for the benefit of the dead is not considered disgraceful, but in fact, an honor.”

Hakham Bashi R. Hayim Avraham Gagin [1787-1848] reports this approvingly in his collection of Jerusalem customs [*Sefer HaTakanot v'Haskamot u'Minhagim*, YD #87].

This practice is not identical to today's AH. But it is surprisingly close. While in one the flesh breaks down into earth and in the other it liquefies into a solution, the common factor is that the flesh is not abandoned to abject public putrefaction, and the processes yield bones that come to rest in the earth. The *posekim* did not require that flesh decompose in a "natural" manner, unaided by human agency.³⁵ A further similarity is that the family considers its actions as gestures of honor. We might think there are invariant Judaic yard sticks of honor or disgrace, but as R. Moshe Feinstein wrote, "honor or disgrace should be evaluated based on the intention of the actors" [*Iggerot Moshe* YD 1.247]. Thus, the propriety of mortuary methods depends at least partly upon mourners' intentions. If people bury the bones in a family tomb in a Jewish cemetery, it seems clear they intend to honor their loved one.³⁶

AH should be regarded as Halakhically comparable to cremation: discouraged as a deviation from Jewish tradition, and cogent only according to the minority view that burial is not actually a requirement, but not technically forbidden. In fact, while individuals may sense more revulsion, more subjective "ick-factor," from a Judaic standpoint AH seems preferable to cremation. AH has no associations with Auschwitz, which makes cremation particularly repugnant to Jews today. Also, in addition to the precedents of Rashba, Radbaz

³⁵ It is common knowledge that that Halakhah bans embalming. Yet, interestingly, based on these sources, R. Shmuel HaLevi Wozner of Bnei Brak ruled that one can inject the body with chemicals to retard decomposition when the body is to be transported for burial. *Shevet HaLevi* 5.185:

וליתן זריקה למת הנוסע ממקום למקום כדי שלא יסריה ולעכב רקבון וכו' מן הדין אין חשש

³⁶ Conceptually, one might endorse the claim by Renee Mirkes, a Franciscan nun and bioethicist, that it is hard to distinguish between AH and other mortuary technologies. She notes that the Catholic church has permitted cremation and embalming since 1963, even though the blood drained from the body in that process is poured down the drain. Even in natural decomposition much of the body liquifies. "Is burning a dead human body any less aggressive and, at first blush, any less offensive or violent, than the process of alkaline hydrolysis? And yet the Church allows cremation. Or, when we understand the slow, relentlessly destructive disintegration process within the buried body, is natural decomposition really any less offensive or repulsive than that which happens in alkaline hydrolysis? ... The process of alkaline hydrolysis is, in and of itself, a morally neutral action." "The Mortuary Science of Alkaline Hydrolysis: Is It Ethical?" in *National Catholic Bioethics Quarterly* 2008 8(4):683-696.

and the Jerusalem sages, AH is greener than cremation, using much less energy. And while cremation produces only powdery ash, AH offers the real possibility of burying human bones amid family graves, the very act that was, in ancient Palestine, the culminating burial act.

To sum up: We should always recommend in-ground burial, which fulfills both Jewish tradition and likely a biblical norm. We should discourage AH as departing from ancestral practice and failing to uphold what is likely a biblical commandment. But especially if AH is performed in ways that maximize surviving bone matter, which should be buried among family members in a Jewish cemetery, it is not technically forbidden, and is preferable to cremation. Even if the bone matter is crushed and powdered (as AH customers may request), it should be buried, as the CJLS ruled in 1986 and confirmed in 2015 regarding cremains. Discarding scattering ashes without burial or dedicating a memorial to a person's life would be inappropriate.

An additional note about speedy disposition: if a family chooses AH, it still should execute this disposition and then bury the bones as quickly as possible, to avoid the prohibition against leaving the dead unburied. If the family will collect the bones immediately after AH and bury them at once, shiva would begin once burial occurs. If there would be some delay before final burial, shiva would begin once the family had "turned its face from the dead," that is when members had no more immediate action to take to dispose of their loved one's remains, such as having delivered the body to AH processors.³⁷

Promession and Composting

As Mufasa of the Pridelands said to Simba: "When we die, our bodies become the grass, and the zebras eat the grass." The Lion King³⁸ appears to be citing Ecclesiastes [12.7], who said:

³⁷ As per Rabbi Heller's 2015 paper.

<http://www.rabbinicalassembly.org/sites/default/files/assets/public/halakhah/teshuvot/2011-2020/heller-shiva-delayed-burial.pdf>

³⁸ Disney's 1994 animated classic. Produced under the leadership of Jeffery Katzenberg, does that make it a great American-Jewish text?

“the dust returns to the earth as it was before, and the spirit returns to God who gave it.”
Traditional Jewish burial is, more or less, composting.

It should come as no surprise that in our ecologically focused age, some have become explicit about technologies for human composting. Though none of these methods have been widely employed in practice, likely they will come before the public soon enough.

In-ground burial can be thought of as *anaerobic* decomposition, where microbes consume the body without oxygen. This process takes a relatively long time, one to two years, and emits unpleasant smells.

Home or garden composting, by contrast, is *aerobic*: digesting microbes use oxygen, produce no odors, and work much quicker. It took only six weeks for a human body to become entirely soil, when laid among cow manure and wood chips at the University of Tennessee’s forensics lab in 1998. But, as home composters know, one must turn the pile to keep it aerated; lab workers had to rake and break up the corpse every week during the decomposition.³⁹ Needless to say, this is not respectful Jewish treatment.

What if there were more reverent ways to apply aerobic decomposition to human remains? Maybe this would be an even better way to return a body “to the earth as it was before.”

A Swedish biologist and environmental activist, Susanne Wiigh-Masak, has spent 20 years advocating such a process, which she named “promession,” to indicate a sense of “promise.”⁴⁰ Her plan would freeze bodies in liquid nitrogen, making them extremely brittle; then subject them to vigorous ultrasonic waves, breaking them into small pieces; then freeze-drying those pieces, eliminating the 70% percent of our bodies that is water, producing an ashy substance, like cremains. Finally, these particles would be buried in very shallow graves, exposing them to oxygen without need for regular aeration. Wiigh-Masak prefers this method to cremation because it requires less energy, and, instead of producing

³⁹ Roach, *Stiff*, 264-5.

⁴⁰ See [Promessa Organic Burial](#), and a brief [report](#) about this work from Columbia University’s architecture and urban planning school’s “Death Lab,” which seeks better ways of memorializing the dead in public space.

inert ash, it yields biotic matter that can nurture new life. In less than 12 months, “promains” would become entirely soil. Wiigh-Masak favors planting trees and shrubs above the small graves, nourishing them by the human remains below. “Every living thing ... is a part of the ecological cycle,” says her website. “The plant stands as a symbol of the person, and we understand where the body went.” Promessa has won laudatory press and support from the Swedish government, but has not yet succeeded in offering the process commercially.

A technically simpler, socially ambitious approach has been initiated in Oregon in the “Urban Death Project.”⁴¹ This proposal, also far from actual construction, seeks to compost human bodies in a three-story pile of carbon- and nitrogen-rich organic material, like wood chips and alfalfa, aerated automatically by the structure itself. The bodies would be laid at the top of the pile, and decompose as they sink down. At the bottom of the structure, families could return after about two months to collect compost containing the residue of their loved ones. Farms and city governments could also make use of the compost, according the UDP website. “I love the idea that we could have a positive impact on the environment, from soil regeneration to climate change,” said Katrina Spade, the architect who leads the UDP. “Wouldn’t you like to go out on your lunch break and see the plants that are growing from the actual people who lived in this city before you?”⁴²

Many might find promession aesthetically unappealing, but I cannot see why we should distinguish among these untraditional methods. Like cremation and AH, we discourage “freeze cremation” but do not consider it technically forbidden. This method lacks AH’s advantage of permitting bone gathering into family tombs. But “promains” are no worse than “cremains,” and if a Jewish family employed this hypothetical technology, they should bury the residue respectfully in a Jewish cemetery. As with AH and cremation, a family choosing promession must execute this operation as quickly as possible.

⁴¹ www.urbandeathproject.org.

⁴² http://www.theatlantic.com/technology/archive/2014/09/the-new-urban-cemetery/379802/?single_page=true. See also http://www.slate.com/articles/life/faithbased/2015/07/urban_death_project_wants_us_to_compost_the_dead_can_religious_groups_get.html and <http://www.nytimes.com/2015/04/14/science/a-project-to-turn-corpses-into-compost.html?emc=eta1&r=0>

However, the production of usable compost raises the objection that these processes intentionally use dead bodies for tangible benefit. Even if natural soil is מותר בהנאה, it is dishonorable to eat fruits or pick flowers growing directly above graves, nourished partly by decomposing human flesh. That certainly describes the UPD, in which the soil produced is directly linked to the dead bodies entombed in its core.

The prohibition on הנאה seems tangential against promession, since one need not plant directly above a grave. But the objection seems decisive against the Urban Death Project, whose central theory is to turn people's bodies into socially, economically, agriculturally useful fertilizer which consumers could obtain. Spade may find it charming to imagine her deceased neighbors "pushing up the daisies" in her garden. But this is incompatible with Jewish norms of reverent treatment of the dead.

Another as-yet hypothetical project raises similar questions. Capsula Mundi⁴³ is an Italian outfit that proposes burying human bodies in the fetal position within a biodegradable egg-shaped pod, including a tree seed. As the bodies decompose, the trees would sprout into a "memory forest" nourished by human remains.

Capsula Mundi strays close the prohibition on הנאה from human remains, but seems to me to land on the safe side of that line. Commonly we plant decorative plants or ivy over graves, and these plants send roots into the soil of the grave that was once human flesh. Planting an oak tree is not logically different from planting a boxwood shrub. Alternatively, one might distinguish between building a grave and then adorning it with a plant, and deciding ab initio to use a person's remains to create a tree. Even if one did bury a loved one within such a "memory forest," it would be disrespectful to eat the fruit or use the wood from such trees.⁴⁴

⁴³ <http://www.capsulamundi.it/en/>

⁴⁴ See n.27, *supra*.

Less Radical Solutions

The environmental and land usage problems that inspire alternative mortuary methods are real. Fortunately, Jewish tradition already has a number of less radical, more traditional resources at hand we can favor before turning to these unusual methods.

As noted, a traditional Jewish burial is already quite “green.” We already use relatively inexpensive, unlined, untreated, biodegradable caskets and do not pump Jewish bodies full of toxic embalming fluid. How can we get better?

First, recall that the ideal Jewish burial uses no coffin at all but lays the body into the earth only in shrouds [YD 362.1]. My own unscientific survey of Jewish cemeteries in the New York City area found that all require caskets. This has no basis in Jewish law, and serves only to help the cemetery maintain level ground without the pitching that would occur over graves as bodies disintegrate. Similarly, there is no Judaic reason to insert concrete liners in graves, as some cemeteries demand. As far as I can ascertain, no local ordinances demand this either.⁴⁵ Here, too, concrete liners serve only to ease the cemetery’s maintenance. Rabbis can enhance the green quality of Jewish burials by working to have cemeteries change their own rules, and by advocating among our congregants that they choose the greenest possible options.

Second, the same informal survey found that all New York-area cemeteries will lay only one person in each grave, although other locales may differ. This rule strains land usage, and is Halakhically unnecessary. While each person must have her individual grave, it would be sufficient to separate coffins or remains by three to six טפחים of soil [SA YD 362.4].⁴⁶ This practice is known in the funeral industry as “multiple depth burial,” and is commonly used in non-Jewish cemeteries and very commonly in Israel. It requires simply digging the first grave in a plot at a greater depth, and digging subsequent ones at progressively shallower levels. There is no Judaic obstacle to this more efficient use of cemetery land.

⁴⁵ Obviously it would require exhaustive research to demonstrate that there is no such ordinance anywhere. I have determined that, at least at the state level, no US state has such a requirement, including Louisiana and Florida, with their very high water tables.

⁴⁶ Between 24-48 cm [ר"ה"ן] and 30-60 cm [ר"ה"א].

Notably, a small number of Jewish cemeteries have begun to offer more explicitly “green burial” alternatives, two of which I am aware of. Our colleague R. Stuart Kelman and other rabbis in the San Francisco Bay area created the Gan Yarok cemetery in Marin County, where caskets need not be used and all plantings and grave markers must be natural and locally appropriate. Also Michigan’s Hebrew Memorial Chapels opened a green section of Beth Moses cemetery in Roseville, MI, and in autumn 2015 buried its first inhabitant. Coffins are mandatory here, said Otto Dube, the funeral director (step-father of our colleague R. Yonatan Nativ), but burial takes place in woodland with only natural grave markers. Gan Yarok and Hebrew Memorial Park are aesthetic and environmental advantages over standard Jewish cemeteries, which can support both the traditional and green Jewish burials with less traditional ones, including metal caskets and embalmed bodies.

Piskei Din

1. In-ground burial is the optimal form of Jewish funeral, most likely a biblical commandment. When performed according to Jewish tradition, it is admirably environmental.
2. Where possible, Conservative rabbis should advocate for even more environmentally and economically sustainable burials, including multiple-depth burials, and burials without concrete grave liners.
3. Jewish law requires no coffin at all. When caskets are used, plain wood is the most appropriate, also for keeping expenses at a manageable level for all. Even simpler, lighter and more rapidly biodegradable materials, like plant fiber or cardboard are also desirable.
4. The prohibition against הלגת המת prevents the public disgrace that would inevitably follow from a body's public putrefaction. We affirm previous CJLS rulings discouraging cremation and mausoleum burial but do not consider these הלגת המת.
5. Like cremation, newly developed and proposed alternative methods such as alkaline hydrolysis or promession do not fulfill the ancient Jewish custom and possible positive commandment of in-ground burial. Also, many Jews will consider these untraditional methods as dishonoring and desecrating the deceased person's body. Rabbis should discourage these technologies as departures from tradition.
6. Nevertheless, there exist Halakhic theories that would permit these untraditional methods. If families choose to dispose of a loved one's remains through cremation, AH or promession, they must take every step to give those remains an honorable burial. All residual ash and organic material should be buried in a Jewish cemetery, in graves dedicated to each individual, not scattered, with full liturgy and mourning rites. In the case of AH, the process yields disarticulated bones, which should not be crushed, but which should be buried, in a modern version of the ancient rite of "bone gathering."
7. When mortuary methods produce soil or compost, it is forbidden to make economic, social or agricultural use of this compost.