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Dwelling with Animals: Zoonotic Disease, Kashrut, and Jewish Animal Ethics

 The Coronavirus 2019 pandemic has stirred universal interest in zoonotic diseases, their etiology, and how they are transmitted.[[1]](#footnote-1) As Lu Di comments, the pandemic as zoonotic disease “provokes historical reflection on the role of animals in human infectious diseases.”[[2]](#footnote-2) Zoonoses are diseases transmitted from animals to humans either directly or indirectly in which the particular pathogen, be it virus, bacterium, fungus, helminth, or prion, originates in an animal. There are also a host of reverse zoonoses, humans infecting animals. “More than 60% of human infectious diseases are caused by pathogens shared with wild or domestic animals, and over 75% of emerging diseases are zoonotic in origin.”[[3]](#footnote-3) At least 13 zoonotic diseases have been directly linked with the deaths of 2.2 million people each year as reported by the CDC and its affiliated agencies. [[4]](#footnote-4) [[5]](#footnote-5) Some of these infectious diseases are classed as reemerging diseases.[[6]](#footnote-6) For example, tuberculosis, brucellosis, and tapeworm cysticercosis are examples of reemerging zoonotic diseases with antecedents in the ancient world.[[7]](#footnote-7)

 The range of diversity in animal zoonotic hosts is impressive and includes both domestic and wild animals. Excluding vectors such as mosquitos and ticks, 80 percent of the animal hosts are mammalian, followed by avian hosts. Of the mammalian orders, “humans share the most pathogens with artiodactyls (frequently in proximity), followed by rodents, carnivorans, and primates.”[[8]](#footnote-8) The mammalian order artiodactyl includes both wild and herd animals: antelope, deer, cattle, goats, sheep, camels, llamas, giraffes, hippopotamuses, hogs and pigs. The order chiroptera includes all species of bats, which are confirmed reservoirs of a high number of viral zoonoses and the special focus of SARS-CoV-2 studies.[[9]](#footnote-9)

Zoonotic Diseases in Ancient Times

Many diseases of the past and present likely originated with animal hosts either in agricultural settings with herd animals or through human contact with wild animals. Zoonoses spread from animals to humans through ingestion of animal flesh or products, contact with living or dead animals, bites or stings from intermediate vectors such as fleas, ticks or mosquitos, and conduits such as water or airborne pathways. Research in paleopathology and zooarchaeology has shown through studies of fossilized bone and soft-tissue lesions, dental enamel erosion, and fossilized fecal matter that many modern zoonotic diseases have ancient antecedents.[[10]](#footnote-10) A 2008 review of the archaeological record of ancient livestock (cows, sheep, and goats) and wild-animal diseases revealed that evidence for infectious diseases (brucellosis or tuberculosis) date at least as far back as the Neolithic B (pre-pottery) period.[[11]](#footnote-11) A 2009 review of animal-derived parasites in prehistoric human remains showed evidence for over 10 Old World species across various geographical regions, including Western Europe, Africa, and Asia and at least 14 New World species (North, Central, and South America). The identified helminths include herd-animal species such as lung and liver flukes, beef and fish tapeworm and poultry roundworm. The host animals included cattle, pigs, dogs, cats, birds, rodents, and fish.[[12]](#footnote-12)

According to Di, in ancient China, contagious diseases were “often associated with diet and the concept of *du* (poison/poisonous, etc.), and while not a primary focus, they were also considered to be transferrable between animals and humans.”[[13]](#footnote-13) Zoonotic diseases recorded through ancient mummy research include tuberculosis, malaria, brucellosis and others. A 2010 integrative study, joining the methods of paleopathology and phylogenetics, confirmed the likelihood of syphilis emerging 5000 years before present or earlier although the place of origin is still unclear if the claims of precolombian venereal syphilis are considered.[[14]](#footnote-14)

Rabies, still known as the world’s most lethal infectious zoonosis, is considered an Old World disease antedating to 2000 BC or earlier. A description of rabies, including its most salient feature, furious raging, is found in the Mesopotamian Codex of Eshnunna, two cuneiform tablets dated to 1930 BC. The tablets indicate their writers’ knowledge of the infectious nature of the disease and required that an owner of a dog showing symptoms take preventive measures against dog bites for the owner’s health and that of others. “If a dog is viscious and the ward authorities have had (the fact) made known to its owner, but he does not keep it in, it bites a man and causes (his) death, then the owner of the dog shall pay 2/3 of a mina of silver (par. 56:A iv 20-23).”[[15]](#footnote-15) The fine of 2/3 of a mina (forty shekels) was considered a hefty sum at the time, as a common laborer’s wage was one shekel per month.

According to Arnaud Tarantola’s 2017 study, to date “no progress . . . has been made in etiological treatment, leaving clinicians who provide care to animals or patients with symptomatic rabies as powerless today as their colleagues in Mesopotamia, 40 centuries ago.”[[16]](#footnote-16) Only preventive vaccines can be used for suspected rabies bites, and those must be given as immediately as possible.

Levitical Dietary Laws and Disease Epidemic Prevention in Ancient Israel

 Current understandings of zoonotic and food-borne diseases may illuminate the reasons for the Levitical designation of clean versus unclean foods in the context of the Exodus. The prohibitions on certain meats along with quarantine and cleanliness laws may have been given based on the threat or incidence of zoonotic diseases as the Israelites travelled and camped together in close proximity with their herd animals.[[17]](#footnote-17) Campground rules minimized disease transmission and environmental pollution with physical cleanness as symbolic of spiritual cleanness.

Dietary laws given to and practiced by the ancient Israelites are laid out in Leviticus 11 and in Deuteronomy 14 through Yahweh's instructions to Moses and Aaron on the consumption of animal flesh at Mount Sinai.[[18]](#footnote-18) As well The food laws emphasized local species, those of Middle-eastern regions though the general rules and examples can be extrapolated and applied to species around the globe. The laws center around determining the difference between forbidden and unforbidden food, and they are categorized simplistically according to three environmental elements: land, sky, and sea. For land mammals, there are two simple rules given. Clean (permissible) mammals are 1) those with cloven feet and hooves, and 2) those who chew or digest *gerah,* grass and herbs. Chiefly, then, the permissible land mammals were ruminants with the exception of camels, which chew the cud but do not have hooves but soft-padded feet with toenails, and horses, which chew cud but do not have split feet or split hooves.[[19]](#footnote-19) Animals that walk on paws such as dogs, cats, and rabbits, were also off-limits.

 Clean aquatic animals were identified by the presence of both fins and scales. Intensive language is used to describe the unclean water creatures. Even their carcasses were to be considered *tshaqetzu,* polluted and possibly contagious.

 For open-air animals, such as birds and bats, and creepers, such as rodents and insects, no hard, fast rules were given, but rather lists of the unclean animals from which heuristics can be derived. The majority of unclean birds listed were raptors, birds-of-prey, and carrion eaters, including falcons, crows, owls, hawks, eagles, vultures, swans, storks, egrets, and pelicans. Bats (though mammals) were included in this list apparently because they fly. Again, even the carcasses of these animals were to be considered filthy and polluted. Unclean small creeping insects include nearly all species with the exception of locusts, katydids, crickets, and grasshoppers. All lizards, gastropods and members of the murid, mustelid and testudines families were considered unclean: weasels, ferrets, mice, rats, turtles, geckos, skinks, chameleons, ferrets, and moles.[[20]](#footnote-20) The mandate to not eat of the creeping or swarming creatures was the most repeated one, stated up to eight times in Yahweh’s discourse in Leviticus 11.

Though the reasons for Yahweh’s dietary laws have provoked much debate, from a simple textual standpoint, these laws were given to define Israel as God’s own people, holy and therefore distinct from the surrounding nations in terms of their lifestyle and forms of worship.[[21]](#footnote-21)

In her book *Purity and Danger*, Mary Douglas famously extends the definition of holiness to “wholeness” in regard to the dietary laws. She writes, “To be holy is to be whole, to be one, holiness is unity, integrity, perfection of the individual and of the kind.”[[22]](#footnote-22) Douglas deemphasizes pragmatic reasons for these laws, such as environment, health, and hygiene, and rather focuses on the concept of congruence between a creature’s habits of motion and its habitat. In Douglas’s conception, then, grasshoppers are considered clean because their locomotion, leaping, keeps them off their bellies as they move across the ground. In contrast the prohibited swarming animals in Leviticus 11: 29-43 (listed as rodents and reptiles in vss. 29-30) slither on their bellies or misuse their hands and arms as legs and feet to crawl across the ground. The unclean creatures, therefore, lack integrity of motion in their given spaces and are, in Douglas’s view, “imperfect members” of their class and not considered “whole.”

Agreeing in part with Douglas and also with Jean Soler’s separate symbolic-order approach, Robert Alter moves beyond them in discussing Kashrut, the Jewish cultural rules of preparing, cooking and eating that have developed from the Second-Temple period. Alter takes issue with Soler’s view that the food-restriction laws were given to draw lines of difference between the divine and the human, finding that Soler erroneously conflates Israelite and Canaanite religious beliefs. “If God looks askance at man’s carnivorous impulse,” writes Alter, “it is not to draw a zone of difference between man and God but, quite to the contrary, because God wants man to emulate Him.” Alter continues by stating,

The dietary prohibitions, then, may well express a sense for the necessity of taxonomic order in the world, built on a principle of firm differentiation. But far from differentiating man from God, they are intended to lead man into the greatest possible resemblance to Him.[[23]](#footnote-23)

Alter points out that the vegetarian-ideal argument made by Rav Kook and others is based on the original diet given to humans by God in Genesis 1 and 2. Had humans continued in their original unfallen state, they would have continued as vegetarians without destroying animal life for food, thereby reflecting their Creator’s attribute of not taking innocent life.[[24]](#footnote-24) In this way of thinking, food restrictions were the next best thing to the ideal Edenic diet and represented greater harmony with God’s original plan of creating humans in His own image. Taking Alter’s view of the *imago dei* as the primary reason for the dietary laws, it is plausible to reconsider the vegetarian-ideal argument for the food laws especially in the context of current research on zoonotic diseases and wet-market meats in which the target animals studied either as primary or secondary hosts or as models of susceptibility to SARS-CoV-2 fall into the category of unclean: bats, cats, minks, primates, hamsters, and ferrets.[[25]](#footnote-25) In this way, instead of minimizing the hygiene and physical health rationales for these laws, as both Douglas and Alter do, we would instead see physical wellness as a vital part of Douglas’s definition of wholeness. To be whole, or to be set apart, involves an absence of illness and the promotion of optimal health. To be whole physically, then, is also to be like God. This wellness aspect to wholeness is suggested in Exodus 15:26 in which Yahweh promises not to bring on the Israelites any of the diseases He has brought on the Egyptians if they live in accordance with His commands.

Ethical Argument for Dietary Laws

Beyond health reasons for dietary laws are ethical ones and a reverence for life, as Jacob Milgrom has shown.[[26]](#footnote-26) Milgrom writes,

Quadrupeds that qualify for the table must chew the cud and show split hoofs. (11:3). These criteria sound absurd. But consider: They effectively eliminate the entire animal kingdom from human consumption except for three domestic herbivores: cattle, sheep, and goats. Moreover, these are the same three animals permitted on the sacrificial altar (17:3). The implications are clear. All life is sacred and inviolable. Only these three stipulated quadrupeds are eligible for the human table because they are eligible for God’s altar/table. The dining table symbolically becomes an altar, and all the diners are symbolically priests.[[27]](#footnote-27)

For Milgrom a relationship exists between the permitted animals for common consumption and the sacrificial system, which also allowed for only clean animals. Likewise, there was a sacred shadow extending from Yahweh’s altar over each Israelite family table just as holiness was to be part and parcel of everyday life, even in the conversations among those at the table.

 Taking a similar ethical stance, Ellen F. Davis sees the daily involvement of Israelites with their herd animals as playing a role in their conception of holiness as they took part in a symbolic system of eating and ritual sacrifice, especially as the sacrificial animal was often part of the household. Therefore, the consumption of an animal became a consecrated act. Davis further argues that, as part of an agrarian culture, Israelites understood that their wellbeing was intimately connected to that of their animals and their land, so animal caretaking became a part of their sacred responsibility.[[28]](#footnote-28)

Rules Regarding Animal Carcasses

 Not only were the Israelites instructed not to consume the flesh of unclean animals, but they were also commanded not to touch their carcasses" (Lv. 11:8, 31). If anyone did touch a carcass, that person was to shed and clean his or her clothing and remain "unclean" until evening, referring probably to self-isolation for the remainder of the day. Any containers that came into contact with the dead animal were also considered unclean and had to be either sanitized with water or destroyed (Lv. 11: 32-35). There is no mention of whether another cleansing agent aside from water is used such as soap or lye although cleansing agents were available, such as salt and a ritual-cleansing antiseptic made from the ashes of a red heifer, hyssop*,* cedar-wood, and wool (Nm. 19). Cleansing agents may have been used, or the water may have been purified with the plant, ‘*ezob,* translated as either as hyssop or marjoram.

Infectious Disease Control in the Old Testament

 While the dietary laws were seemingly given with disease *prevention* in mind, the Israelites were also instructed on how to prevent the spread of already-occurring diseases, specifically categorized as skin diseases and bodily-discharge diseases. The treatment for those with skin diseases was committed to the priests, who were to isolate, check on, and pray for the sick. The quarantine period was usually one week, after which time the priest would look in on the individual and perform a second inspection of his skin. Highly specific guidelines were used for this inspection process that depended on discoloration of skin and hair, inflammation, depth of infection, and evidence of breakout. As with the dietary laws, the difference between clean and unclean was the chief concern. A sick individual could be pronounced clean or unclean or there could be a period of waiting in which the individual was isolated for a second week and then reexamined. Unclean or indeterminant pronouncements were followed by periods of isolation.

 Most cases of skin-disease isolation could be handled inside the camp through "shutting up" a person, but in the more serious case of head plague, or baldness leprosy, it appeared that more drastic measures were needed to keep contagion at bay. The person's clothing was to be torn, and he was to wear a facial wrap (veil or mask) over his upper lip and cry out "unclean, unclean" as a warning if approached by someone (Lv. 13:45). In place of isolating for merely one week, the individual was to "dwell alone" outside the camp for an indefinite period of time specified as "all the days of the plague" until the skin was healed (Lv. 13:46).

 Clothing was also to be inspected and quarantined if there was evidence of disease such as red or green discoloration in the "warp and woof" of the wool or linen or in animal skins. Infected garments were to be put away for seven days, reexamined and either washed and set aside again or burned. If there was evidence that the red or green color had spread in the garment, this was considered a "fretting leprosy." At that point, it was to be declared unclean and destroyed through burning. If no evidence could be found for the spread of the disease in the garment, then it could be washed and shut up for another seven days and inspected again. (Lv. 13:47-59).

Once someone’s skin condition cleared, the individual could apply for readmission to the camp through the priest, who would go outside the camp to examine the skin and perform a sacrificial symbolic ritual with two clean birds, water, and a mixture of cedar wood, scarlet wool, and hyssop.[[29]](#footnote-29)

After the ceremony of the two birds, the cleansed individuals were readmitted to the camp through stages, staying one week outside of their tent and participating in a process of bathing, shaving, and washing their clothes followed by an atonement offering on the eighth day. The return to camp for those with contagious skin diseases was done in stages perhaps with social reintegration and the welfare of the camp community in mind.

Contemporary Kashrut and Jewish Animal Welfare

The dietary laws outlined in Leviticus and Deuteronomy form the foundation for contemporary Jewish dietary and butchery regulations, also recorded in Second Temple sources and in later rabbinic writings such as the Talmud.[[30]](#footnote-30) For example, the dietary laws of Halakha prohibit the eating of sick and diseased animals. Kashrut practice includes both plant- and animal-based foods. While nearly all plant-based foods are permissible, the plants are “strictly examined to prevent non-Kosher by-products or insects from being consumed inadvertently.”[[31]](#footnote-31) Lettuce leaves, for example, are rinsed one-by-one with each crease and fold being carefully inspected. Animal foods include domestic and wild species. Kosher laws prohibit the consumption of wild animals that are hunted, shot by bullet or arrow, pierced by spear or stake, starved in a trap, or poisoned.[[32]](#footnote-32) Instead, all permissible mammals are slaughtered according to shechita techniques that involve cutting off airways quickly with a properly-sharpened blade (chalaf) to render instant loss of consciousness, thereby minimizing suffering. Only animals killed by a trained shoichet can be certified as Kosher.

The practices of Kashrut and shechita (food-preparation) laws are central to Jewish identity and have contributed to an increased consciousness of human and animal welfare, as witnessed in streams of Jewish thought and practice today.[[33]](#footnote-33) Former Chief Counsel for the Food and Drug Administration, Peter Barton Hutt, writes, “*Kashrut* is one of the pillars of Jewish religious life and virtually every aspect of eating and preparing food implicates some Jewish dietary law.”[[34]](#footnote-34) Similarly, Haskell J. Greenfield and Ram Bouchnick, in their review of animal remains from ancient Israel, contend that Jewish cuisine and dietary behavior is the one of the clearest markers of this group’s cultural identity.[[35]](#footnote-35)

In Jewish circles, the concept of *tikkun olam*, repairing the earth, has been increasingly influential in food choices across all major denominations of Jews. Maria Diemling writes that dietary choices inspired by *tikkun olam* and Halakha are innovative and move beyond Kashrut to shape Jewish identity within their practice of animal welfare promotion and cruelty-free production.[[36]](#footnote-36) Chaim Loike of the Orthodox Union is an expert on kosher birds. and serves as the rabbinic coordinator of certification of eggs, spices, and chemicals. He also directs the Biblical Ornithological Society, an animal conservation group. The group maintains several aviaries of ancient, endangered kosher bird breeds to prevent their extinction and to enhance their genetic diversity. They send ambassador birds to schools, summer camps, and petting zoos with curriculum designed to expand children’s learning about the importance of conservation efforts.

Conclusion

 The surge of scholarly interest in zoonotic diseases brought about by the current pandemic brings a fresh approach to the Biblical dietary, quarantine, and slaughter laws and reveals a pragmatic, care-oriented, and relevant element to the religious practices of ancient Israel. Yahweh’s dietary and quarantine laws make more sense to us in a post-pandemic world with its increased appreciation for cleanliness at home and at work. Knowledge about zoonotic disease processes, reservoirs, and transmission routes is integral to current notions of Kashrut and their scriptural antecedents. Understanding the diseases inherent in unclean animals listed in Leviticus and Deuteronomy leads to an increased understanding of why Yahweh delivered such laws to His people as their identity was being shaped in their sojourn through the wilderness and beyond it. Yahweh’s people were to stand out from all others on the face of the earth as they became more and more like Him. Israel’s lifestyle practices and habits of disease prevention were part of the worship of Yahweh through which a reciprocal cycle of blessing would come. This cycle of blessing has trickled down in the form of Kashrut and Jewish animal-welfare laws. As spiritual cousins to Jews, Adventists can find much room at this table. Current scientific findings on zoonoses, especially as they relate to unclean animals as special reservoirs of disease, shed light on laws that many have felt are arbitrary and irrelevant to contemporary life. The post-pandemic world sounds a clarion call for Adventists, with their emphasis on holistic health, to further explore the connections between zoonotic diseases and current dietary and hygienic practices and to better understand the relationship between our own health message and Yahweh’s holiness.

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1. Zoonoses are defined simply as pathogens that are transmitted from animals to humans. [↑](#footnote-ref-1)
2. Di, Lu, “History of Epidemics in China: Some Reflections on the Role of Animals.” *Asian Medicine,* (August 13, 2021) Brill, accessed September 29, 2021. [↑](#footnote-ref-2)
3. John S. Mackenzie, and David Williams. 2020. “Zoonoses.” *Microbiology Australia* 41, no. 1: 3–5. [↑](#footnote-ref-3)
4. Jeanna Bryner, "13 Animal-to-Human Diseases Kill 2.2 Million People each Year." *Live Science*. 6 July 2012. https://www.livescience.com/21426-global-zoonoses-diseases-hotspots.html. See also Delia Grace, Florence Matua, Pamela Ochungo, Russ Kruska, Kate Jones, Liam Brierley, Lucy Lapar, Mohamed Said, Mario Herrero, Pham Duc Phuc, Nyuyen Bich Thao, Isaiah Akuku, Fred Ogutu, "Mapping of poverty and likely zoonoses hotspots: Zoonoses Project 4: Report to the Department of International Development, UK," International Livestock Research Institute, June 18, 2012, https://

cgspace.cgiar.org/bitstream/handle/10568/21161/ZooMap\_July2012\_final.pdf?sequence=4&is

Allowed=y. [↑](#footnote-ref-4)
5. The CDC's office, One Health, an agency founded in 2009 to raise awareness of and prevent zoonotic diseases, heads the World Organisation for Animal Health Collaborating Center for Emerging and Reemerging Zoonotic Diseases and is affiliated with the Food and Agricultural Organization of the United Nations. One Health, along with The Department of the Interior and the USDA, has prioritized eight zoonotic diseases of most concern in the U.S.: zoonotic influenza, Salmonellosis, West-Nile Virus, Plague, SARS-MERS, Rabies, Brucellosis, and Lyme Disease. [↑](#footnote-ref-5)
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7. Joseph Zias, "Current Archaeological Research in Israel: Death and Disease in Ancient Israel," *The Biblical Archaeologist* 54, no. 3 (September 1991): 146-159, https://www.jstor.org/stable/pdf/

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18. Of note, the dietary laws pertain only to animal-flesh foods and not to grains, fruits, nuts, legumes, and vegetables. [↑](#footnote-ref-18)
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23. Ibid. [↑](#footnote-ref-23)
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28. Ellen F. Davis, “Identity and Eating.” [↑](#footnote-ref-28)
29. Lv. 14:5-7. [↑](#footnote-ref-29)
30. Peter Barton Hutt, “The Jewish Dietary Laws and Their Foundation,” 2-8. [↑](#footnote-ref-30)
31. Ibid, 108. [↑](#footnote-ref-31)
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