

PLAGUES 4 TO 6: WILD ANIMALS, PESTILENCE, AND BOILS

H. Babich, Ph.D. Biology Department, SCW

The Ibn Ezra (*Shemos* 9:1) noted that the plagues of blood and frogs were mediated through the medium of water, of lice and wild animals through the medium of soil, and of pestilence and boils through the medium of the atmosphere. Plagues 4, 5, and 6, or, those afflictions caused by swarms of wild animals, microbial pestilence, and skin boils, are the subjects of this article.

Plague #4

“*HaShem* said to Moshe: Arise early in the morning and station yourself before Pharaoh - behold, he goes out to the water - and you shall say to him, So said *HaShem*. Send out My people that they may serve Me. For if you do not send out My people, behold, I shall incite against you, your servants, your people, and your houses, the swarm of wild animals; and the houses of Egypt shall be filled with the swarm, even the ground upon which they are” (*Shemos* 8:16, 17). A disordered assortment (Rashi) of roving (Ramban) animals, from the wilderness [1], invaded Egypt. Some of the species of animals were foreign to Egyptian soil (*Haamek Davar*) and fear of these unfamiliar creatures terrified the Egyptians. Undoubtedly, this assortment of animals included many species that, among themselves, were predator-prey associations, e.g., wild goats and lions. Yet, these species intermingled in harmony, without the stronger species (the predators) attacking the weaker species (the prey) [2]. Rav Avigdor Miller [3] connected this plague to the prior plagues of blood and lice. “Packs of rabid animals descended upon the towns, probably maddened by the foul water of the first plague and the harassment caused by the lice and ticks of the third plague.”

Peoples in the lands surrounding Egypt stood dumbfounded as hordes of wild animals stampeded from their natural environs towards Egypt. There is a thought that *HaShem* put out a worldwide call, commanding animals throughout the world to stampede towards Egypt [2, 4, 5]. If so, Eskimos may have stood in awe and in utter confusion as they watched polar bears dive into the frigid waters and swim towards Egypt.

Many commentators suggested that *HaShem* changed the inherent nature of these animals, causing them to uncharacteristically leave their natural forests, jungles, plains, and deserts and to

invade areas populated by human beings. The mixture of wild animals was not a new creation; the novelty of this plague was that the animals, normally denizens of forests and jungles, now invaded man’s habitat, something that was very untypical of their behaviors (Rabbeinu Bachya).

In the plague of wild animals, *HaShem* removed the instinct of wariness, thereby providing the animals with the courage to freely attack and harm human beings.

Since the time of Noach, *HaShem* implanted into the psyche of wild animals a degree of timidity towards human beings. During the year aboard the ark, Noach and his sons catered both day and night to the physical needs of the various species of animals. The animals, now accustomed to human beings, no longer feared them [6]. To assure the safety of Noach and his family upon their leaving the ark, *HaShem* said, “The fear of you and the dread of you shall be upon every beast of the earth and upon every bird of the heavens, in everything that moves on earth and in all the fish of the sea; in your hand they are given” (*Bereshis* 9:2). *HaShem* implanted in animals an instinctive fear or “wariness” of human beings (Abarbanal). Animal “wariness” describes their cautiousness and watchfulness of human beings; always on the alert to avoid risk. Animal wariness is their response to being preyed upon by hunters and to depletion of their natural habitats by human activities. Essentially, it is their inherent protective measure against annihilation. In the plague of wild animals, *HaShem* removed the instinct of wariness, thereby providing the animals with the courage to freely attack and harm human beings (Alshich; Rashi) [1].

A logical assumption is that upon seeing the swarms of invading wild animals the Egyptians quickly bolted the doors and closed the windows of their homes. If so, how did the wild animals gain entry into the Egyptian homes? This question apparently bothered various commentators. One thought is that huge aquatic creatures emerged from the ocean depths, entered Egypt, crawled over the Egyptian houses and, using their massively long

arms, tore off the roofs, doors, and windows (*Sefer HaYashar*). Note, in the Hebrew edition of *Me'Am Lo'ez* the term for this aquatic creature is “*silonis*,” which, in the English edition translated by Rav Aryeh Kaplan [5], was described as a giant octopus or a giant squid. Until recently, the existence of these creatures was known only from their large tentacles that occasionally washed upon shore or from dead specimens caught by commercial fishing boats. However, in 2004, Japanese scientists photographed the first images of a live large squid (*Architeuthis*), roughly 25 feet in length, at a depth of 2,950 feet beneath the north Pacific Ocean. These large creatures were found to be active predators, with sperm whales as their diet [7]. Giant octopuses have also been identified in the Pacific Ocean. The world's record giant octopus (*Enteroctopus dofleini*) weighed live at 156.5 lb, with a length of 23 feet [8]. Another thought was that *HaShem* agitated the ocean currents, igniting giant waves to smash against the doors of the Egyptian houses, thereby opening the houses for entry by the wild animals [2]. The tsunami of 2004, in which >300,000 people perished, exemplifies the force of ocean waves.

Other commentators focused on the end of the *pasuk* 17, “even the ground upon which they are.” Ibn Ezra suggested that “ground” included “deserts,” as swarms of animals invaded both the inhabited and uninhabited areas of Egypt. Others (S'forno; *HaKetav Vehakabbalah*) suggested that “ground” referred to burrowing animals, e.g., amphibians, reptiles, snakes, insects, spiders, and worms, which invaded the Egyptian homes by burrowing through the soil. Even in their locked houses, the Egyptians felt insecure.

Another thought is that “even the ground upon which they are” referred to a specific creature, the *adnei basadeb*. There are four distinct suggestions to identify the *adnei basadeb*: (1) a creature intimately attached to the ground (G'ra in *Kol Eliabur*; *Tosfos B'racha*); (2) a human; (3) a humanoid; or (4) a primate. The *adnei basadeb* is introduced in *Kilayim* (8:5), when discussing whether touching a corpse of the *adnei basadeb* confers the same impurity as touching a human corpse. According to Rav, the *adnei basadeb* is a ferocious animal, human-like in appearance, attached to the ground by a (“an umbilical?”) cord, through which it obtains its sustenance from the soil. Hence, for this creature to migrate to Egypt, the connecting cord and ground must accompany it. The Artscroll edition of *Kilayim* expanded the discussion on the *adnei basadeb* noting that its movements were limited to the radius of the cord, that it was extremely dangerous and killed anything within its circle of movement, and that its life depended on the cord's connection remaining intact to the ground. To kill this creature,

hunters would stand outside the creature's radius of movement and shoot at the cord, which upon being severed, the *adnei basadeb* emitted a loud groan and died.

The other suggestions of the identity of the *adnei basadeb* eliminate its cord attachment to the ground. In the Mishnah cited above, Rav Yosi assumed that the *adnei basadeb* had the status of a human being. The Talmud Yerushalmi, *Kilayim* (8:4) described the *adnei basadeb* as a “mountain man.” Aruch considered the *adnei basadeb* either as a feral human who grew up in the jungle or as a species of wild human. Rav Shimon Schwab [9] considered the *adnei basadeb* to be “man-like creatures with some intelligence who were able to cultivate fields, hence their name.” He further explained that they were “most likely identical with the so-called “prehistoric men” which in spite of their similarity to men, were not created in the image of G-d and not endowed with a Divine soul. Nevertheless, they were capable of cultivating the soil, building settlements, fashioning all kinds of artifacts, and even drawing pictures inside the caves where they lived.” Other identities of the *adnei basadeb* included those of various primates (Rav Phinchus Kahati; Malbim and *Sifra* on *Vayikera* 11:27), including the orangutan (*Tifereth Yisroel* (see Boaz)) and the chimpanzee (Rambam in *Perush HaMishnayos* to *Kilayim* 8:5, specifying a primate that chattered incessantly without interruption).

HaShem continued the narrative: “And on that day I shall set apart the land of Goshen upon which My people stand, that there shall be no swarm there; so that you will know that I am *HaShem* in the midst of the land. I shall make a distinction between My people and your people - tomorrow this sign will come about” (*Shemos* 8:18, 19). For the prior two plagues, frogs and lice, no specific mention was made to distinguish between Goshen and Egyptian land. Several commentators (*P'nei Rosa*; Rabbeinu Bachya; Ramban; Rashbam) suggested that the mixture of wild animals was different from the frogs and lice, whose mobility was limited. The greater mobility of the wild animals and their nature to freely roam from area to area necessitated a specific statement that a distinction will be seen between Egyptian and Jew.

“*HaShem* did so and a severe swarm of wild animals came to the house of Pharaoh and the house of his servants; and throughout the land of Egypt; the land was being ruined because of the swarm” (*Shemos* 8:20). How did the animals ruin the land? One thought was that defecations from the alien species of animals polluted the Egyptian soil (Abarbanel; *Me'Am Lo'ez*).

Eventually, Pharaoh had his fill of this plague and (insincerely) relented to Moshe's demand. “Pharaoh summoned Moshe and Aaron and said, “Go! Sacrifice to your G-d in the land” (*Shemos*

8:21). In a few sentences further, *HaShem* caused the animals to leave Egypt. “Moses left Pharaoh’s presence and prayed to G-d. *HaShem* did as Moshe requested and He removed the wild animals from Pharaoh, his servants, and his people. Not a single one remained” (*Shemos* 8: 26, 27). Many commentators contrast the removal of the frogs with that of the wild animals. When the frogs died, “they piled them up into heaps and heaps and the land stank” (*Shemos* 8:10). The animals did not die, but left and returned to their original habitats. If they had died, the Egyptians would have profited from their valuable hides and furs (*Me’Am Lo’eaz*) and from their use as food (Rabbeinu Bachya). The Rosh (as translated by Rav Munk [10]) noted that the wild animals did not reproduce during their invasion of Egypt. They returned to their natural habitats, in numbers equivalent to those that left, and, thus, they did not adversely affect the carrying capacities of their natural environments. The carrying capacity, or the maximum population size that an ecosystem can support indefinitely, is determined by the sustained availability of two resources: (a) renewable resources (e.g., water, light, nutrients) which are replenished by natural processes and (b) nonrenewable resources, such as space [11]. If the animals had reproduced, coupled with the suspension of predator-prey relationships, the larger numbers of animals returning to their natural ecosystems would possibly have overwhelmed the carrying capacities of their various ecosystems.

Plague #5

Pestilence, the fifth plague, potentially is any virulent, highly contagious infectious disease that can reach epidemic or even pandemic proportions. Such diseases could be of microbial (e.g., bacterium, fungus, or parasite) or of viral (e.g., swine flu) origin. The highly contagious nature of such diseases was recognized, as noted in *Bava Kama* (60b), “If a pestilence is in the town, gather in the feet,” meaning that people would lock themselves in their homes to avoid contact with others.

The destruction of the Egyptian economy, principally that component mediated by livestock and transport animals (Alshich), was the focus of the fifth plague. Agricultural field work was dependent on oxen for plowing, terrestrial transport of materials was accomplished with donkeys (for domestic commerce) and with camels (for foreign commerce), military strength and operations through chariots drawn by war horses, and food and clothing was obtained from sheep, goats, and cows. The fifth plague abruptly crippled the Egyptian economy and greatly lessened the international importance of Egypt as the center of commerce in the Middle East [1, 12].

There is some disagreement among the commentators as to

the extent of the epidemic, whether it affected only those animals in the fields or also affected those animals that were housed indoors. The *pasuk* (*Shemos* 9:2) stated “For if you (i.e., Pharaoh) refuse to send out and you continue to grip them (referring to *B’nei Yisrael*), behold, the hand of *HaShem* is on your livestock that are in the field, on the horses, on the donkeys, on the camels, on the cattle, and on the flock - a very severe epidemic.” According to Rashi (9:10), only those animals in the field were killed, whereas according to Ramban (9:1), the plague extended to those livestock housed indoors. Ramban, as well as Rabbeinu Bachya and Sifsei Cohen, further noted that pestilence is usually associated with harmful changes in air quality (i.e., in the terminology of today, “airborne transmission” of disease-causing microbes or viruses). Thus, it would be expected that the disease also affected livestock housed indoors.

According to this theory, the skin lesions were caused by radioactive fallout.

The description of the plague continues (*Shemos* 9:4), “*HaShem* shall distinguish between the livestock of Israel and the livestock of Egypt, and not a thing that belongs to the Children of Israel will die.” According to Ramban, Rabbeinu Bachya, and Sifsei Cohen (see *Me’Am Lo’eaz*), because of Egyptian abhorrence of shepherds (*Beresheet* 46:34), the Egyptian-owned flocks were pastured very far from their cities. Rather, they were pastured in fields bordering Goshen. Undoubtedly, Egyptian-owned and Jewish-owned flocks intermingled and yet, albeit pastured side-to-side, the contagion spread only to the Egyptian-owned sheep. Airborne transmission of this plague was recognized (Ramban; Rabbeinu Bachya, and Sifsei Cohen) and the miracle was further compounded by the lack of death of these Jewish-owned sheep. Although not explicitly mentioned in the *chumash*, the death of thousands upon thousands of livestock in Egyptian soil must have caused an unimaginable stench across the entire country, similar to that caused by the rotting fish in the first plague and the rotting piles of decaying frogs in the second plague [13].

Rabbi Eliyahu Munk [10, 14] in his translations of the Tur and Rabbeinu Bachya, specifically noted that the plague of pestilence was caused by an unspecified airborne microbe. It is interesting to postulate on the identity of this microorganism. Although many microbes are potential candidates, my colleague, Dr. Jennifer Suss (SCW graduate and noted veterinarian practicing in New Jersey)

suggested *Bacillus anthracis*, the causative agent of anthrax, as the bacterial tool used by *HaShem* to generate the fifth plague. Interestingly, this bacterium is the microbial agent of choice by those involved in bioterrorism; in 2002, the strange white powder placed in sealed envelopes generated much excitement and stress in the United States. This bacterium occurs in two physiological states, (a) a growing vegetative cell and (b) a dormant endospore. The vegetative state is the actively growing, reproducing form that causes the disease. In infected cattle, the course of the disease is short, with death occurring one to three days post-infection. Symptoms of cattle anthrax include fever, cessation of rumination, excitement followed by depression, uncoordinated movements, respiratory difficulty, convulsions, bloody discharges from natural body orifices, and finally death. After death, if the carcass is opened for necropsy by a veterinarian, for food by a carrion-feeding animal, or through decay, the vegetative bacteria are exposed to air and quickly sporulate to form endospores. *B. anthracis* endospores are resistant to environmental stresses, remain viable, albeit inactive, for years, and are the form in which the disease is transmitted. When endospores enter another animal, either through airborne transmission or through grazing on contaminated vegetation, the endospores germinate to their vegetative forms and initiate the diseased state [15].

Plague #6

The sixth plague was skin boils and blisters (*Shemos* 9:8-12). *HaShem* commanded Moshe and Aaron to fill both their hands with furnace soot. Aaron and Moshe then transferred all four handfuls into one of Moshe's hands, which miraculously held all the furnace soot. Holding the four handfuls in one hand, Moshe forcefully hurled it heavenward before the eyes of Pharaoh. The Middle East is, at times, inundated with hot southerly winds coming from the Sahara (*khamsins*) carrying ultrasmall particles of sand at a density significant enough to eclipse the sun. Perhaps, Moshe's hurling the soot heavenward needed to be done in front of Pharaoh, so that Pharaoh could not attribute this plague to a natural sandstorm (S'forno). The relatively small amount of furnace soot hurled upward spread over the entirety of Egypt, rained down as soot, and caused painful skin boils and blisters to erupt both on human beings and on livestock. The Tur [10], as well as the Ramban, suggested that winds carried the soot into the Egyptian homes, thereby afflicting those who remained indoors.

In describing the curses to befall *B'nei Yisrael* should they not observe the commandments, it is written, "*HaShem* will strike you with the boils of Egypt, with *garav* and with *cheres*, of which you cannot be cured (*Devarim* 28:27). According to Rashi, *garav* is an

affliction of moist boils and *cheres* is an affliction of dry boils. Rav Munk [16] suggested that the skin boils of the sixth plague were curable, either because they were supernatural (*Tosafos* to *Bechoros* 41a) or because they were of a different type (Maharsha) than mentioned in *Devarim*. Rav Sorotzkin [2], however, maintained that the boils of the sixth plague were incurable. Another thought is that the incurability of the skin boils noted in *Devarim* (28:27) referred only to those skin lesions that afflicted the *chartumim*, who were the priests, sorcerers, and educators of Egypt. This then explains why the sorcerers were unable to stand before Moshe, as these incurable skin lesions affected their knees and legs (*Devarim* 28:35). Rav E. Ginzburg [17] also postulated that the sorcerers were never healed of the boils and, therefore, never again appeared before Pharaoh to offer their advice. Rav Belsky [13] cited a Yiddish commentator who suggested that the *chartumim* were trained in special facilities in the city of Khartoum, the capital of Sudan, where they were trained in philosophy, science, astronomy, and the occult.

There are many opinions of the physical nature of these skin boils. In the Talmud (*Bava Kamma* 80b; *Bechoros* 41a), these skin boils are described as internal dry lesions which erupt through the skin surface to form an outer moist blister. Alshich (as interpreted by Rav Munk (2000) [18]) suggested that the plague caused blood blisters and pus pimples on the internal mucous membranes and a dry rash on the outer skin. The Rashbam, as translated by Rav Munk (2003) [19], noted that the boils were infected with bacteria and Rav S.R. Hirsch [1] described the skin boils as an inflammatory condition terminating in pus, tissue necrosis, and gangrene. *Sefer HaYashan* added that these gangrenous lesions were malodorous.

What caused the blisters and rashes? Ramban, *Sefer HaYashan*, and *Targum Yonathan* (as cited in *Me'Am Loez*) suggested that the ashes thrown into the atmosphere were hot and when deposited on the Egyptians and their livestock caused skin pathologies. Ramban, however, provided another thought, suggesting that the soot adversely affected the Egyptian atmosphere and it was this polluted air that caused the skin eruptions. Perhaps, mixtures of caustic gases (e.g., hydrogen cyanide; ammonia) were responsible for the rashes and blisters. Rav Aryeh Kaplan [5] adds a modern interpretation. When Moshe threw the fine ash "heavenward" (*Shemos* 9:8), it was hurled so far that it escaped the Earth's atmosphere and picked up "the elemental power of the sun," which he defined as cosmic radiation. According to this theory, the skin lesions were caused by radioactive fallout. Beta burns are shallow surface skin burns caused by beta particles in radioactive fallout,

usually seen after nuclear tests. On July 16, 1945, the first atomic bomb was tested in an isolated desert region in New Mexico. The code name for the test was Trinity. After the Trinity test, radioactive fallout, appearing as small flaky dust particles, caused localized burns on the backs of cattle in the area downwind of the test. Castle Bravo was the code name of the first U.S. test of a thermonuclear hydrogen bomb. Detonated on March 1, 1954, at Bikini Atoll, Marshall Islands, radioactive fallout again was generated. A snow white dust-like powder fell for 12 hours and poisoned the islanders who inhabited the test site, as well as the crew of Daigo Fukuryū Maru (“Lucky Dragon No. 5”), a Japanese fishing boat

in the test area. Both the native islanders and the crew of the fishing boat suffered severe skin lesions [20]. These descriptions of radioactive fallout and the skin lesions that ensued are reminiscent of the sixth plague.

Pharaoh was a stubborn person and it would take another four plagues and the total destruction of his army before he understood that *HaShem* controls the world. Interestingly, in our tradition, Pharaoh flees to, and becomes the ruler of, Nineveh, the same city that, later in history, Yonah relayed *HaShem*'s command of repentance (*Baal HaTurim*; *Shemos* 14:28). Apparently, Pharaoh learned his lesson and the city repented (at least, temporarily). ■

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