

BIBLICAL PLAGUES IN MODERN TIMES

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With the assistance of media and technology, anthrax has become a ubiquitous household fear. The anthrax scare made the world conscious of epidemics and its greater detrimental effects on society. However, *Bacillus anthracis*, the causative agent of anthrax, and airborne pathogenic microbes are not as familiar in present times. Allusions to anthrax and other epidemics causing dermatopathologies are referenced to ancient Egyptian civilization. One example is the skin disease of *shechin*. Mentioned in various places in Tanach, *shechin*, a skin disease reaching epidemic proportions, has stirred the curiosity of many biblical commentators and physicians. Commonly and loosely translated as boils, it is most famous for its service as the agent of the sixth plague in Egypt. It is also recorded that *shechin* affected King Chezariah and Iyov (*Malachim Bet* 19:8, *Iyov* 2:6-8). After closer examination of the symptoms of *shechin*, its definition as “boils” seems too vague and may possibly be a misnomer.

Scientists and physicians differ in their conclusion of the identity of the dermatological disease termed *shechin*. Many argue as to whether *shechin* is a skin condition or rather, a metaphysical affliction. It is hard to arrive at a concrete decision based on the limited knowledge from the texts. Nonetheless, some detailed descriptions of *shechin* seem unique to specific skin epidemics, implying *shechin*'s dermatological pathology. In reference to the ten plagues, the text states (*Shemot* 9:9):

“And it [the handfuls of soot from the furnace that Moshe and Aharon threw towards the sky] shall become small dust in all the land of Egypt, and it shall be boils breaking out in blisters upon man, upon beast throughout all the land of Egypt.”

Rabbi Shlomo ben Yitshack (Rashi) explains that the word *shechin* (boils) means “hot” (*Shemot* 9:9), understood by many scholars as a description of an inflamed skin lesion. The Talmud adds (*Nega'im* Chap. 9, Mishnah 1) that the lesions were wet on the surface and dry on the inside. This added commentary might suggest that the lesions were “ruptured vesicles or pustules”. [1] Dr. L. Hoenig combines these two biblical commentaries and concludes that *shechin* can be attributed to viral diseases of either smallpox or cowpox. [1] The white appearance of the lesions serves as evidence of *shechin*'s origin as smallpox or cowpox, affecting both humans and animals alike. [1]

Physician Dr. J.S. Marr and public health analyst C.D. Malloy argue that *shechin* is an actual dermatological condition. They compiled a list of various proposals of the disease and noted evidence to support each proposal, as suggested by various sources. Marr and Malloy took notice that the *shechin* affected both human and animals, indicative of the epidemic's epizootic nature. [2] The first suggestion, from G. Hort (Netherlands, 1957) and H.W. Blanc (U.S., 1890), credits *shechin* as an ulcero-glandular anthrax, transmitted by various flies. [2] Another, presented by H. M. D. Hoyte (Australia

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1993), states that *shechin* was a combined staphylococcal-streptococcal bacterial infection, specified as 'ecthyma'. Ecthyma can also be transmitted by flies to both humans and animals. [2] While both anthrax and this staphylococcal-streptococcal infection cause severe skin infections and can be transmitted by flies, physical contact, or contaminated food, anthrax spores, unlike the bacteria responsible for the staphylococcal-streptococcal infection, can be airborne and associated with more widespread damaging effects. [2] It is more likely, then, that such a devastating plague was caused by anthrax or some other airborne microbes.

Marr and Malloy suggested yet another alternative bacterial candidate for *shechin*. They propose *shechin* is glanders disease (causative agent, *Pseudomonas mallei*), a highly contagious airborne bacterial disease transmitted by direct contact or by fly bites. [2] Glanders, currently found within the Middle East and Africa, is primarily a respiratory infection that afflicts horses, donkeys, mules, and goats, but can affect humans, as well. [2] Marr and Malloy described the symptoms in humans: “Human disease consists of nodular eruptions on the face, legs, arms, involvement of the nasal mucosa and later pyemia, and metastatic pneumonia”. [2] This class of glanders may be another possible description of the biblical *shechin*.

Dr. L. Ben-Noun, of the Ben-Gurion University provides the most conclusive evidence, remarking that the symptoms of *shechin* match the clinical symptoms of anthrax. [3] On the contrary, Dr. A.R. Freilich, a physician, claims that *shechin* is characterized in the Torah as lesions on previously abnormal skin, which often develops white hairs or an increase in size in the lesion. In other words, *shechin* is hypopigmented skin patches arising on already irregular skin. Abnormal skin can involve erythema, vesicle formation, crust, weeping, or erosions. It also includes any skin that has undergone a burn, traumatic injury, or eczematous dermatitis. Dr. Freilich claims

that although it would appear that *shechin* is postinflammatory hypopigmentation, it is unusual for postinflammatory hypopigmentation to develop secondary changes including white hairs and an increase in size. Therefore, he concluded that *shechin* may no longer exist. [4]

Regardless of what is the exact definition of *shechin*, most evidence seems to indicate that *shechin* was caused by an airborne microbial pathogen. The time gap of the Bible with present commentary may be what is leading commentators astray to no one final concrete answer. ■

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