

Letter From the Desk of David Challinor
October 2003

At my invitation, this month's letter was written by Zoo Board member Richard Heller, M.D. and colleagues. It is a fascinating account of a mistranslation of an ancient Hebrew word that led to people in the Bible being described as having leprosy. Heller and colleagues assert that this disease did not exist in the Middle East when the Old Testament was written.

**EVIDENCE THAT THE WORD "TSARA'AT" AS USED IN LEVITICUS
SHOULD BE TRANSLATED AS MOLD, NOT LEPROSY, AND THE HISTORY
OF THIS CONFUSION**

Richard M. Heller¹, Toni W. Heller, and Jack M. Sasson²

¹Professor of Radiology and Pediatrics, Vanderbilt University Medical Center, Nashville, TN 37232. To whom correspondence should be addressed.

Email: richard.heller@Vanderbilt.Edu

²Mary Jane Werthan Professor of Jewish Studies and the Hebrew Bible, Vanderbilt University Divinity School, Nashville, TN 37240.

We gratefully acknowledge the assistance of Dr. William Schaffner, Professor and Chairman, Department of Preventive Medicine, Vanderbilt University Medical Center, who reviewed this manuscript and its many revisions.

The noun *tsara'at* occurs about two dozen times in the Hebrew Bible, almost exclusively in Leviticus 13 and 14, where it is understood to convey and encompasses the notion of ritual defilement manifested as a scaly condition of humans and of inanimate objects including woven cloth, leather goods, and the walls of houses (Wilkinson 1977). This affliction *tsara'at*, was handled by priests (descendants of Aaron), who were enjoined to maintain the norms governing ritual cleanliness in the community. So, for example, Lev. 13:2–3 states, “When a person has on the skin of his body a swelling, a rash, or a discoloration, and it develops into a scaly (*tsara'at*) affection (*nega*^c) on the skin of his body, it shall be reported to Aaron the priest or to one of his sons, the priests. The priest shall examine the affection on the skin of his body: if hair in the affected patch has turned white and the affection appears to be deeper than the skin of his body, it is a leprous (*tsara'at*) affection; when the priest sees it, he shall pronounce it unclean.” And in Lev.14:39–40, “On the seventh day the priest shall return. If he sees that the plague has spread on the walls of the house, the priest shall order the stones with the affection in them to be pulled out and cast outside the city into an unclean place...” (Tanakh 1988).

In the third century B.C.E., the Hebrew Bible was translated into Greek (The Septuagint). The authors of the Septuagint used the Greek words *aphe lepras*, “a plague of leprosy” to translate *nega’ tsara’at*, and the Latin Vulgate followed suit with *plaga leprae*. These translations encouraged all future identification of the affliction as leprosy. The Greek and Latin phrases, which implied an outbreak that spread over the body, are consistent with Lev 13:12, which spoke of the potential for *tsara’at* to erupt all over the body, but are not terms of ritual impurity. It is obvious, however, that the Greek translators simply guessed. In the absence of a word that referred to a ritual defilement, they selected a Greek word that described (as in Herodotus, *History*, I:138, about Persians affected by *lepre*, “scales” or *leuke* “white patches”) a known minor skin condition characterized by scaling of the skin (Baillie and Baillie 1982). That a prevailing Greek term *elephantiasis*, which may have described leprosy better, was not used indicated intentional distinction between the religious state of ritual or ceremonial defilement and the disease leprosy.

Despite the persistence of “leprosy” as a rendering for *tsara’at*, there is little evidence that the disease as described in contemporary medicine existed in the Ancient Near East when Leviticus was presumably written or compiled. Now known as Hansen’s Disease, after the Norwegian doctor who in 1873 viewed its bacillus, leprosy leaves hypopigmented or reddish skin lesion(s) on human extremities leading to loss of sensation, damage to the peripheral nerves, and deformation of fingers and toes. Collapse of nasal bridge, loss of incisors, and blindness can also occur. Historians of medicine cannot trace the presence of leprosy archaeologically before the fourth or even third B.C.E. (Beckett 1987). There is a dispute among scholars about the presence (or absence) of Hansen’s Disease in the ancient world. Egyptologists debate whether a disease called *ʿ3t. nt.h nsw* mentioned in medical papyri of the second millennium B.C.E. could belong to leprosy. As it is, the earliest skeletal evidence of the disease comes from a Ptolemaic cemetery, approximately 200 B.C.E., in the Dakhlah Oasis (Filer 1995). Assyriologists likewise discuss the status of a host of afflictions mentioned in cuneiform texts that have on occasion earned the label “leprosy”; but a recent authoritative study has cast doubts on their connection with it (Stol 1989). No pre-Christian skeletal evidence for leprosy has as yet come to us from Mesopotamia. Kaplan can therefore state categorically that “There is no literary, historic, artistic or osteoarcheologic evidence of leprosy in the Middle East before the return of Alexander the Great’s armies in 325-324 B.C.E.” (Kaplan 1993; Browne 1975).

Others have recognized that mold, or mildew, can cause scaling, depigmented lesions in humans, and can also infest houses, and have suggested that *tsara’at* should be translated as mold (e. g., Buchanan 1993). The recent identification of specific molds that can infect both humans and houses, and that cause symptoms similar to those described in the Bible, reinforces this suggestion (Belkin 2001).

In an article in the *New York Times Magazine*, Belkin described a particularly virulent uncommon mold contamination that is so severe that homes were uninhabitable and their total destruction and incineration were the only safe response. Mold-contaminated buildings could cause serious health problems, including respiratory illness, rash, fatigue, and memory loss, in their occupants. These symptoms appeared to be associated with mold of the genus *Stachybotrys*, although other molds may also be involved (Belkin 2001).

Stachybotrys is a greenish black mold that is thought to have existed for millennia (Restoration Consultants 2001). This mold thrives in a moist environment growing on drywall, wallpaper, insulation, as well as commonly found household items. The moist environment develops when roofs leak or plumbing fixtures leak or water seeps through foundations. When patients have been exposed to toxins produced by this fungus, they have reported the symptoms described above. Other studies suggest that *Stachybotrys* may be involved in suppression of immune function, and pulmonary disease including pulmonary hemorrhage. However, it should be noted that the implication of *Stachybotrys* as the cause of multiple symptoms and, pulmonary hemorrhage is controversial, and there is extensive literature on this topic. While the subject is controversial, the prevention of mold growth requires maintaining a dry home or work place where the species cannot grow. If a building is contaminated with *Stachybotrys*, chlorine can be tried on the moldy surface, but it may not be successful. In that regard, prevention is more effective than cure in that once a building has been contaminated with stachybotrys “many experts agree there is not way to remediate it” (Mold-Help 2001)

The mold implicated in the recent documentation *Stachybotrys* is thought to have existed for millennia (Restoration Consultants 2001). Johanning supported the notion that the “sick house syndrome” affecting humans includes a number of symptoms, including rash, respiratory illness, fatigue, and even memory loss, and suggested that mold infection can explain these manifestations (Johanning 2001). It is therefore tempting to associate mold with *tsara’at* which, as Lev 13 and 14 reveal, manifests itself in humans as skin condition and in inanimates, especially the walls of a house, as a blight. Since time immemorial, authors and translators have sought to label the affliction that can attack so broadly. The Biblical authors recognized the association between affected humans and affected houses, an association that is made more plausible by the recognition of the effects of *Stachybotrys*. We suggest that the word “mold,” logical in terms of history and mycology, is the perfect equivalent to Hebrew *tsara’at*. Thousands of years have passed since the Hebrews dreaded this mold contamination, deeming it the result of a cultic infraction and leaving its treatment to priests. We and our property are still the victims of molds, and we have yet to effectively control their ravages.

REFERENCES

- Baillie R. A., and E. E. Baillie. 1982. Biblical leprosy as compared to present day leprosy. *Southern Medical Journal* 17:855–57.
- Beckett, D.W. 1987. The striking hand of God: Leprosy in history. *N.Z. Medicine J.* 100:494–97.
- Belkin, L. 2001. Haunted by mold. *New York Times Magazine*. August 28, 28ff.
- Browne, S. G. 1971. “Leprosy” in the New English Bible. *Bible Translator*, 22(1):45–46.
- Browne, S. G. 1975. Some aspects of the history of leprosy: the leprosie of yesterday. *Proceedings Royal Society of Med.* 68:485–93.
- Buchanan, G. W. 1993. Leprosy. In *The Oxford companion to the Bible*, ed. B. M. Metzger and M. D. Coogan, 431–32. Oxford: Oxford Univ. Press.
- Filer, J. 1995. Egyptian bookshelf: Disease. Austin: Univ. of Texas Press.
- Herodotus. 1998. The histories/Herodotus; translated by Robin Waterfield; with an introduction and notes by Carolun Dewald. I,138. New York: Oxford Univ. Press.
- Johanning E. ed. 2001. Bioaerosols, fungi and mycoplasmas: Health effects, assessment, prevention and control. Proceedings of the Third International Conference on Fungi, Mycotoxins and Bioaerosols, Health Effects, Assessment Prevention and Control, December 23–25, 1998. 2nd Ed. New York, New York: Mount Sinai School of Medicine, Department of Community Medicine, Fungal Research Group.
- Kaplan, D. L. 1993. An anachronism whose time has come. *Journal of the American Academy of Dermatology* 28(3):507–10.
- Mold-Help. 2001. Stachybotrys. <http://www.mold-help.org> Accessed 13 November, 2002.
- Restoration Consultants. 2001. Mold, mildew, fungus, fungi. <<http://www.restcon.com/>> Accessed 20 August, 2002.
- Stol, M. 1989. Leprosy: New light from Greek and Babylonian sources. *Jaarbericht van het Vooraziatisch-Egyptisch Genootschap “Ex Oriente Lux.”* 30:22–31.

Tanakh. The Holy Scriptures. The New Holy Scriptures. The New JPS Translation According to the Hebrew Text. The Jewish Publication Society. Philadelphia, New York, Jerusalem, 1988.

Wilkinson, John. 1977. Leprosy and Leviticus: The problem of description and identification. *Scottish Journal of Theology* 30:153–69.

Heller, Richard, Mold: ‘Tsara’at,’ Leviticus and the History of a Confusion. *Perspectives in Biology and Medicine* 46:4 (2003),. ©The Johns Hopkins University Press. Reprinted with permission of The Johns Hopkins University Press.

David Challinor
Phone: 202-673-4705
Fax: 202-673-4686
E-mail: ChallinorD@aol.com