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A Skeleton 4,000 Years Old Bears Evidence of Leprosy

By NICHOLAS WADE
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The oldest known skeleton showing signs of [leprosy](#) has been found in [India](#) and may help solve the puzzle of where the disease originated.

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Possibly the oldest skeletal evidence of leprosy includes tooth loss and root exposure on this 4,000-year-old mandible.

The skeleton, about 4,000 years old, was found at the site of Balathal, near Udaipur in northwestern India. Historians have long considered the Indian subcontinent to be the source of the leprosy that was first reported in Europe in the fourth century B.C., shortly after the armies of Alexander the Great returned from India.

The skeleton is described in [the journal PLoS One](#) by Gwen Robbins, an anthropologist at Appalachian State University, and colleagues in India. The authors say the skull shows signs of erosion typical of leprosy.

The authors say their find confirms that a passage in the Atharva Veda, a set of Sanskrit hymns written around 1550 B.C., indeed refers to leprosy, a reading that had been doubted because until now the oldest accepted written accounts of the disease were from the sixth century B.C.

The bacterium that causes leprosy seemed to have spread worldwide from a single clone, biologists reported three years ago. But for lack of sufficient samples, they could not tell whether the bacterium was disseminated when modern humans first left Africa about 50,000 years ago, or spread from India in more recent times.


Other biologists have contended that because the bacterium is not very transmissible, requiring prolonged intimate contact between people, it would not have started to spread until around the third millennium B.C., when people started living in dense populations in cities and long-distance trade sprang up.

Helen D. Donoghue, an infectious disease specialist at University College London, said the new finding was fascinating and fit in with the theory that Alexander's army had brought leprosy back from its campaigns in India.

This was the right period for leprosy to have spread from India to Europe, Samuel Mark,

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an anthropologist at [Texas A&M](#), argued in an article in 2002. But he doubted that Alexander's troops were the mode of transmission. More likely, in his view, is the possibility that leprosy arrived with women imported as slaves by ship from India to Egypt.

Dr. Robbins said she planned to extract ancient bacterial DNA from the Indian skeleton and hoped it might resolve how the disease originated.

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