

HEADLICE TO THE RESCUE

Relevant for: Science & Technology | Topic: Biotechnology, Genetics & Health related developments

Are there other sources of ancient DNA besides bone and teeth?

Scientists, for the first time, recovered DNA from cement on hairs taken from mummified remains that date back 1,500–2,000 years. This is possible because skin cells from the scalp become encased in the cement produced by female lice as they attach eggs, known as nits, to the hair.

Analysis of this newly-recovered ancient DNA – which was of better quality than that recovered through other methods – has revealed clues about pre-Columbian human migration patterns within South America (*Molecular Biology and Evolution*). This method could allow many more unique samples to be studied from human remains where bone and tooth samples are unavailable.

Dr. Alejandra Perotti at the University of Reading, who led the research, said in a release: “Like the fictional story of mosquitoes encased in amber in the film *Jurassic Park*, carrying the DNA of the dinosaur host, we have shown that our genetic information can be preserved by the sticky substance produced by headlice on our hair. In addition to genetics, lice biology can provide valuable clues about how people lived and died thousands of years ago”

“Demand for DNA samples from ancient human remains has grown in recent years as we seek to understand migration and diversity in ancient human populations. Headlice have accompanied humans throughout their entire existence, so this new method could open the door to a goldmine of information about our ancestors, while preserving unique specimens.”

Until now, ancient DNA has preferably been extracted from dense bone from the skull or from inside teeth. However, skull and teeth remains are not always available. Recovering DNA from the cement delivered by lice is therefore a solution to the problem, especially as nits are commonly found on the hair and clothes of well-preserved and mummified humans.

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The Parker Solar Probe flew through the solar atmosphere known as corona in April during the spacecraft's eighth close approach to the sun.

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