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[\[International Cooperation\]\[Life Sciences\] NTU Research Team Participates in "Lost City" International Cooperation Project, Posing a Challenge to Darwin's Evolutionary Theory](#)

[International Cooperation][Life Sciences] NTU Research Team Participates in "Lost City" International Cooperation Project, Posing a Challenge to Darwin's Evolutionary Theory ([Chinese Version](#))

NTU Newsletter (Issue 993) & udn.com (2010/01/17) The international research team, including Associate Professor Chuan-Chou SHEN of the Department of Geosciences, NTU, and, Debbie Kelley of the University of Washington, Seattle, has published their findings on microbial evolution in Proceedings of the National Academy of Sciences of the United States of America, which does not support Darwin's evolutionary theory. This is the first time in the history of science using U-Th dating and genomic analysis to investigate the details of the evolving process of the rare biosphere in "Lost City" over the past 1200 years.

Lost City is located at the ocean bed of the North Atlantic near 30 degrees north latitude. Its carbonate chimneys hydrothermal field is very similar to the hot spring system in the earlier earth, which was produced by the reaction of inorganic minerals and sea water. Thus the microbes' propagation there contributes important clues to understand the origin of life, the earlier evolution and its principles. Geochemistry team of the Department of Geosciences, NTU, spent five years clarifying the behaviors of uranium-series isotopes in Lost City and developing a reliable and precise U-Th dating method for the specific hot spring system in Lost City. The findings suggest diverse survival strategy of these microorganisms. The dominant species varies from one another with different environments, however, the micro-biodiversity was not significantly altered. Microorganisms could remain rare for over 1,000 years before completely turning the tables to become dominant when environmental conditions changed. This observation of 1,200-year micro-bioevolution, supporting the Rare Biosphere Model, does not follow Darwin's ideas, such as that species are multiplied from single species, that complicated mechanisms are developed from simple ones, and that new species are descended from and replacing the old ones. This surprising microdiversity in hydrothermal chimneys of Lost City may also create an opportunity to depict the life development several billion years ago.

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Further Information:

[Lost City Expedition Website](#)

[NTU Newsletter Issue 993](#) (Chinese)

[Udn.com 2010/01/17](#) (Chinese)

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