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Found: Life on Earth That Could Exist on Mars

By THE ASSOCIATED PRESS

DENVER, Jan. 16 (AP) - Scientists plumbing the bubbling, black depths of a geothermal hot spring in Idaho have discovered a unique community of microbes that thrive without sunlight or oxygen.

Scientists say the organisms are very similar to life as it might exist on Mars and other planets.

The one-celled organisms, Archaea, grow by consuming the hydrogen produced by hot water reacting with bedrock 600 feet below the Beaverhead Mountains. They produce tiny amounts of methane as a byproduct of their weird metabolism.

Although types of Archaea have been found before, this community is unlike anything else on Earth, because of the concentration.

Most life on Earth flourishes not only in the presence of water, but relies also on oxygen, sunlight and organic carbon. Conditions on the rest of the planets - and perhaps beyond the solar system - are far more hostile.

Astrobiologists said the microbes closely resemble what they imagine might be beneath the dry, barren surface of Mars or the thick glaciers of Europa, a moon of Jupiter.

The researchers, led by Francis H. Chapelle, a geochemist at the United States Geological Survey, reported their discovery in Thursday's issue of the journal *Nature*.

Microbes like these have been the subject of speculation for 30 years. Finding them, however, was another matter. Just for this study, a team of seven government and university scientists spent more than a decade looking for promising sites.

The research team surveyed the volcanically active Yellowstone region, home to 80 percent of the world's geysers and half of its geothermal features.

They were looking for a subterranean environment that had water but no sunlight, oxygen or organic carbon.

They selected the Lidy Hot Springs welling up near the Idaho-Montana line. They sank specially designed instruments 600 feet into the springs, where the subsurface water was 137 degrees. They collected the microbes with filters.

In light of the findings, researchers said the question should no longer be whether extreme life exists on Mars and elsewhere.

"Rather, did life originate there, or was it transplanted from Earth?" said Bruce Jakosky, a planetary scientist at the University of Colorado.

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