

# Insight to Be Gained From Antarctic Lake

February 09, 2012

**The**  **Moscow Times**

If scientists find microbes in a frigid lake two miles beneath the thick ice of Antarctica, it will illustrate once again that somehow life finds a way to survive in the strangest and harshest places.

Lake Vostok could hold living organisms that have been locked in icy darkness for some 20 million years, as well as clues to the search for life elsewhere in the solar system.

Touching the surface of the lake, the largest of nearly 400 subglacial lakes in Antarctica, came after more than two decades of drilling and was a major achievement avidly anticipated by scientists around the world.

A Russian team made contact with the lake water Sunday at a depth of 3,769 meters.

Valery Lukin, the head of Russia's Arctic and Antarctic Research Institute, said reaching the lake was akin to the Americans winning the space race in 1969.

American and British teams are drilling to reach their own subglacial Antarctic lakes, but Columbia University glaciologist Robin Bell said those are smaller and younger than Vostok,

which is the big scientific prize.

"It's like exploring another planet, except this one is ours," she said.

University of Colorado scientist Ted Scambos is sure that there will be microbes found in Lake Vostok when the long process of examining samples starts.

Lukin said he expects the lake to contain bacteria that feed on chemical reactions in pitch darkness, probably similar to those existing deep on the ocean floor but dating back millions of years.

Studying Lake Vostok will also yield insights about the origins of Antarctica, which is believed by many to have been part of a broader continent in the distant past.

And the project has allowed the testing of technologies that could be used in exploring other icy worlds.

"Conditions in subglacial lakes in Antarctica are the closest we can get to those where scientists expect to find extraterrestrial life," Lukin said.

Still, what makes Lake Vostok more important than other extreme environments is its incredible isolation.

Drilling through the ice crust in the world's coldest place brought major technological challenges.

The effort has drawn fears that the more than 60 tons of lubricants and antifreeze used in the drilling may contaminate the lake's pristine waters.

Lukin, who made numerous trips to Antarctica, said the physiological challenges of extreme cold and thin oxygen were aggravated by isolation.

"If something happens to you or your colleague, there is no one to help," he said. "It's actually easier to help an astronaut in space."

Russian researchers plan to continue exploring with robotic equipment that will collect water samples and sediments from the bottom of the lake.

The prospect of lakes hidden under Antarctic ice was first put forward at the end of the 19th-century by Russian scientist and anarchist Prince Pyotr Kropotkin.

Russian geographer Andrei Kapitsa noted the likely location of the lake and named it following Soviet Antarctic missions in the 1950s and 1960s, but it wasn't until 1994 that its existence was proved by Russian and British scientists.

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