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## Geologists probe deep sea vents to find minerals

OTTAWA (CP) — Canadian and American geologists are poking around sea vents thousands of metres below the ocean's surface to improve technology which may help them find mineral deposits on land.

A research team has been studying a volcanic ridge, off the west coasts of the two countries, which they hope will be the key to better land-exploration techniques.

The underwater Juan de Fuca ridge contains vents which spew hot water laden with such metals as silver and zinc from the depths of the earth into the cold ocean waters.

The minerals are deposited as ores around the vents and could be mined if the technology existed to bring them to the surface, University of Toronto geologist Steven Scott told a Canadian Science Writers' Association seminar Monday.

However, he called the deposits a "resource of the future" and stressed there are no immediate plans to mine them because similar but vastly larger ones exist on land which are still untapped.

But the goal of the research, for which Scott's group will receive federal grants worth an average of \$132,000 for each of the next three years, is to give scientists a better insight into the process which brings minerals from the interior of the earth and deposits them where they can be mined.

Jim Franklin, a geologist with the federal government's Geological Survey, said large on-land deposits which were formed by the same process Scott's group is studying in action, exist in such mining regions as Timmins, Ont., Noranda, Que., Flin Flon, Man., and Bathurst, N.B.

But with a better understanding of the process, geologists may then be able to pinpoint other regions in Canada which could also yield rich quantities of minerals.

The key features scientists look for when seeking likely candidates for such deposits are a layer of hard rock covering another layer of softer volcanic rock through which sea water could have passed when the continent was submerged under the ocean in prehistoric times.

These could be thousands of metres deep and Scott cautioned the technology will have to be developed which would allow mining operations at those depths to be profitable.

Current mining operations can go to depths of about 1,500 metres, he added.

Mining the deposits found beneath the ocean is also limited by technology, since currently available drills cannot bite through more than about 10 metres of the hard surface rock.

TORONTO STAR?

## Ocean yields mining secrets

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