

GEOGRAPHY

Antarctic Hot Spot

Antarctica's recently-discovered warm area with never-freezing lakes of strange colors is duplicated here in the U. S. Other hot springs areas are in the Far North.

➤ ANTARCTICA'S new-found "Shangri-La", with the strangely-colored, never-freezing lakes reported by Adm. Byrd's explorers, is by no means the world's first-known spot kept free of snow and ice through polar weather by the warmth of thermal waters.

Yellowstone National Park, right here at home, has several such areas. Temperatures on the Park plateau drop to the truly Arctic levels of 60 and more below zero, yet the various geyser and hot-springs areas not only remain snow-free, but green grass and small shrubs grow along the banks of the warm streams that flow from them. There is enough of such natural hot-house vegetation to maintain a few elk in the upper geyser basin when all the rest of the herd has migrated to the lower-level winter pastures. Hot springs on the shore of Lake Yellowstone maintain an ice-free zone for yards off shore, where overwintering little flocks of pelicans and seagulls manage to pick up a living. And the strange colors reported from the Antarctic can be duplicated in Yellowstone's warm pools and weird mud geysers.

The same story can be repeated, with variations, of hot-springs areas in the Far North. There are hot springs and natural steam vents on the Alaskan mainland, among the volcanoes that rise on the Aleutian chain like knuckles on a long finger, and along the shores and in the valleys of Kamchatka, the peninsula that faces Alaska from the northeast corner of Asia. All of these keep at least little areas snow-free the year round. It is even reported that the people of

one small Russian settlement near the coast of Kamchatka have put a captive hot spring to work keeping a greenhouse warm, so that they may have otherwise unobtainable green vegetables.

Classic of all hotwater areas in northern lands, of course, is Iceland. That island's one major periodic hot spring, the Great Geysir was known for centuries before Yellowstone was discovered, and has given its name to all geysers everywhere. The little river on which Iceland's capital stands never freezes, and is believed to be responsible for the city's name of Reykjavik, which means "smoking creek".

None of these northern thermal areas is nearly as close to the North Pole as the new-found warm spot in Antarctica is to the South Pole. They are all below the Arctic Circle.

The one thing that all such areas have in common is association with volcanoes, either active or extinct. The steam and hot water that flow up through vents in the surface are believed to be partly from water trickling down and contacting deeply buried hot lavas or magmas, partly from steam given off by the melted rock itself.

There are more than enough evidences of volcanic activity in Antarctica to account for a thermal area like the one reported. Geologists with former expeditions have reported an abundance of volcanic rocks, and at least one of Antarctica's mountains, Erebus, has been seen several times in at least mildly active eruption.

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MEDICINE

Blood May Provide Cures

See Front Cover

➤ TWO NEW CHEMICALS from the blood, that doctors may use some day to cure ills, were announced by Dr. Edwin J. Cohn of Harvard, famous for his blood plasma researches.

Green, not red, was one of these blood fractions when Dr. Cohn added a copper solution to the colorless fluid as he demonstrated before Washington chemists.

Alone among the 25 known chemicals of the human blood plasma, this par-

ticular chemical binds either copper or iron firmly to itself to transport these elements through the body.

It turned a dark, brownish red when Dr. Cohn added iron instead of copper.

"It is my job to make these chemicals from the blood available," Dr. Cohn explained. "It is the task of physiologists and physicians to discover what role they play in the body and how they can be used to treat sick patients."

Already some of the blood fractions isolated and made available by Dr. Cohn and his coworkers are fighting disease:

Little children are being protected against measles by injections of one of the blood chemicals.

Sufferers from hemophilia, the hereditary bleeders' disease called the "curse of the Hapsburgs", may be helped by another.

Better treatments of anemias and other blood diseases are being explored with other blood chemicals.

The new iron-copper carrying blood chemical is known as beta one globulin, or fraction IV-7. It is one of the chemicals obtained as a sort of by-product to the war-time production of serum albumin for transfusion of the wounded. First obtained in a mixture of other blood chemicals, it has now been obtained in crystalline form as a single chemical. Dr. Bernard Koechlin, working in Dr. Cohn's laboratory, was responsible for this advance.

The other new blood chemical separates from human serum albumin as a mercury salt. This was obtained by Dr. W. P. Hughes, Jr., another of Dr. Cohn's associates at Harvard.

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CHEMISTRY

Chemical "Frost" Matures Cotton, Hastens Opening

➤ FAILURE of cotton bolls to open up all at the same time has been one of the main problems of cotton picking, whether by hand or machine. Noting that a light frost, sufficient to cause the leaves to fall off, also causes unopened bolls to hasten their maturity and come open, Dr. John F. Kagy and D. T. Prendergast of Long Beach, Calif., sought a chemical that would have the same effect. This they found in an organic compound known as pentachlorophenol, applied as a dilute spray. Patent 2,416,259, covering this process, has been assigned to the Dow Chemical Company.

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