

GEOGRAPHY

Alaska Defense Discussed

Problems of this northern territory, close to Russia, engage the attention of scientists. "Permafrost" presents one of the toughest problems.

► **RESEARCH** for the defense of Alaska, vital strategic area only 50 miles from Russian territory, was discussed in Washington by more than 300 scientists attending the first Alaskan Science Conference, sponsored by the National Academy of Sciences.

Thousand-foot Frozen Layer

"Permafrost," the underlying earth layer of the Alaskan Arctic which never thaws, is one of the toughest problems facing scientists and engineers, the conference was told.

In certain localities the permanently frozen layer extends downward to at least 1,020 feet below the surface, Dr. Gerald R. MacCarthy, of the U. S. Geological Survey reported. This discovery was made in studies of oil wells drilled for the Navy in World War II. Thermal cables were lowered as far as 2,400 feet. Scientists are now ready, Dr. MacCarthy said, to sink their instruments even deeper, down to 6,000 feet into the earth.

From these studies, Dr. Louis L. Ray of the Geological Survey said, will come better understanding of Alaskan vegetation and farming problems, soil, drainage, water supplies, and construction work done over permafrost—a problem vital to military defense of Alaska.

Caribou Almost Extinct

Thanks to a combination of wolves and game-hungry natives armed with high-powered rifles, Alaska's "millions" of caribou no longer exist, Dorr D. Green, chief of predator control in the U. S. Fish and Wildlife Service, told the conference.

Game herds have been reduced far below any possibility of spontaneous recovery, he said, and can be maintained only by careful wildlife management methods. One of the most promising of these is wolf poisoning with baits soaked in fetid seal oil.

Wildlife Service scientists have found that valuable fur animals, such as mink, otter, marten and weasel, turn up their noses at such fare, but wolves are strongly attracted by the evil smelling bait.

Dogs Carry Worms

An embargo against any shipment of Arctic dogs to the United States was recommended by Dr. Everett L. Schiller of the U. S. Public Health Service in Anchorage. Tapeworm infections carried by dogs as well as wolves, Alaskan foxes, voles and other mammals are a serious health problem in the territory, he said.

Huskies and other sledge dogs are an apparent reservoir of tapeworms which can

cause internal tumors when transmitted to human beings.

Archaeological Sites Rifled

Serious damage to Alaskan archaeological sites is being done by Eskimos digging for ivory and U. S. soldiers and sailors hunting for curios, Prof. Frederica de Laguna, Bryn Mawr, Pa., College anthropologist, told the conference. Records of fast-vanishing native cultures are being endangered, she warned, despite a 44-year-old law providing legal protection to such sites against vandalism.

Forecast Volcanic Eruptions

The possibility that volcanic eruptions can be forecast with accuracy is being studied in Alaska, Dr. Joel H. Swartz of the U. S. Geological Survey reported. Particularly in the Aleutians, volcanos are a risk to military and civilian installations. Experiments in predicting approaching eruptions by instruments which pick up earthquake tremors are being made. Three seismic stations have already been set up on Adak and Great Sitkin Islands in the Aleutians, where measurements of "ground tilt" and magnetism are also being tested as possible eruption indicators.

Salt Varies in Ice

You cannot tell the thickness of Arctic ice by use of electrical equipment like that employed in prospecting operations. Resistivity of ice to direct current varies with the temperature of the ice and with how much salt is in the ice, William J. Dichtel and George A. Lundquist, of the U. S. Naval Ordnance Laboratory, told the scientists.

A quick method of finding ice thickness is important to many of the Armed Forces' naval and aerial operations. The two scientists said also that temperature varies with the thickness of the ice and that there is a great variation in the amount of salt in different parts of the ice.

Cortisone for Eye Ill

Cortisone, famous arthritis remedy, promises to control the major eye disease in the native populations of the Arctic circle and to prevent the blindness it causes.

Cases in which this hormone drug brought dramatic recoveries in 24 to 48 hours, instead of 10 days to three weeks or longer, were reported by Drs. Milo H. Fritz of Anchorage, Alaska, and Phillips Thygeson of San Jose, Calif., to the Alaskan Science Conference in Washington.

The eye disease is called phlyctenular keratoconjunctivitis. Little blister-like bumps

that come in crops attack the lining of the eyeball and lids and scar the cornea. Eyesight is impaired by the scars and in some cases is lost entirely.

The cause of the disease is not known. The best theory at present is that it comes from an allergy to the products of the TB germ.

While cortisone can be used to stop the acute attack of the disease and prevent scarring of the eye cornea and blindness, full control of the disease will not come until tuberculosis is eliminated.

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PHYSICS

Physics Nobel Prize For Meson Research

► **PROBING** the inner secrets of atoms to find out more about how they are made brought Dr. Cecil F. Powell of Bristol University the 1950 Nobel Prize in physics.

Mesons are the tiny elusive particles formed when cosmic rays smash an atom to bits and in cyclotrons. Their life is short, measured in millionths of a second. They are considered key particles of the atom, perhaps holding the secret of its binding force.

For his method of photographing these nuclear processes and his discoveries about mesons, Dr. Powell received the prize.

One of the photographic emulsions that Dr. Powell developed in his laboratories contains eight times as much silver bromide as older emulsions. This aids in magnifying the path of a particle on the photographic plate. The emulsion is also loaded with boron, which prevents the tracks left by the particle from fading.

By studying meson tracks on plates exposed on mountain tops or suspended from balloons soaring miles above the earth, scientists are learning about the different types of mesons, their masses and other facts ex-



DR. CECIL F. POWELL