

CANADA'S 10,000-YEAR OLD PLANTS

Botanists of the National Museum of Canada have grown normal healthy plants from seeds believed to be 10,000 years old.

The seeds, Arctic lupines, were discovered in frozen soil in rodent burrows near Miller Creek, some 100 miles north of Dawson, Yukon Territory, by a mining engineer in 1954. Though unaware of their scientific significance, he kept the seeds in a dry place until a National Museum paleontologist, who learned of their existence in Dawson last year, brought them to Ottawa for study.

Dr. A.E. Porsild, a retired chief botanist of the Museum, and his colleagues believe these specimens to be the oldest living organisms in the world. They had lain dormant surrounded by frozen ground for more than 10,000 years, constant refrigeration and lack of oxygen having arrested all growth.

For the past year, the plants have been growing in a greenhouse at the Central Experimental Farm, Ottawa. One, which bloomed during the summer, had a blue spike. Seven of the original two dozen seeds unearthed have now germinated and resemble the modern lupine seen in gardens across the country.

ALOUETTE I FIVE YEARS OLD

Alouette I, Canada's topside-sounder satellite celebrated its fifth birthday in space last month with the completion of its 24,918th orbit of the earth. This remarkably successful spacecraft, the first to be designed and fabricated by a nation other than the U.S.S.R. and the U.S.A., is considered to be one of the most productive research satellites to have been launched by the Western world. For five years it has been looking down on the ionosphere, the electrically-charged curtain of electrons, ions and other gaseous components that exist above the earth and normally reflect radio waves.

The electronic observation by *Alouette I* of the ionosphere's composition and of the phenomena that take place there when solar activity creates disturbances, has resulted in 1,770,000 ionograms. Studied by upper-atmosphere specialists, these traces of events in the ionosphere have been processed from 11,249 miles of magnetic tapes that record scientific data telemetered from the satellite to receiving stations on earth. A quick-scanning technique makes it possible for the Defence Research Telecommunications Establishment in Ottawa and associated scientists to spot variations from the normal. Detailed studies of ionograms that indicate the unusual have resulted in expanded scientific understanding of the ionosphere and of its complexities. This information is important to Canada because the nation's vastness demands communications of a high order, particularly for the Armed Forces. Improved communications systems can only be developed following a thorough understanding of the electrically-charged curtain employed to reflect radio signals.

Alouette I has travelled 720 million miles since "liftoff", has executed 54,452 commands and has logged a total telemetry transmission-time of about 8,376 hours. The craft now operates for 2.5 hours a day from its virtually circular orbit about earth at altitudes varying from 616 to 642 statute miles. The travel-time for each orbit is 105.4 minutes.

Its successor, *Alouette II*, which is nearing its November 28 second birthday and is expected to match the success of its namesake, has already produced 595,050 ionograms.

A third DRB satellite, *Isis A*, weighing 485 pounds (165 pounds heavier than its predecessors) and carrying 11 experiments, will be launched next year.

CANADIAN EXHIBIT IN LIMA

Work is nearing completion on the Canadian pavilion being erected by the Department of Trade and Commerce on the site of the Pacific International Trade Fair in Lima, Peru. The pavilion will be ready for use during the entire fair, which will run from October 27 to November 12.

The new 2,000 square-metre building, designed by the Canadian Government Exhibition Commission, will mark Canada's return to the fair after an absence of six years. It will feature Canadian materials, including Douglas fir plywood box-beams and panels.

Canada's exhibit in 1967 will be five times larger than that of 1961. The pavilion will house displays by some 45 Canadian companies exhibiting products and services varying from fruits and poultry feed to domestic and industrial appliances and maintenance chemicals. Many displays of heavy hydraulic and electronic equipment will be included, as well as an exhibit by the Association of Consulting Engineers of Canada.

The adjoining circular tower, built of Canadian plywood panels laid vertically, will house an information exhibit on Canada.

CONSULATE IN DALLAS

Mr. Paul Martin, Secretary of State for External Affairs, announced recently that a Canadian Consulate had been opened in Dallas, Texas, on October 16, with Mr. C.M. Forsyth-Smith of the Trade Commissioner Service, Department of Trade and Commerce, as Consul and Trade Commissioner.

Besides providing consular services within the State of Texas, the new office will foster Canadian export interests in Texas, Oklahoma, Kansas, Arkansas and New Mexico. This territory, of vast export potential, has a population about the same as that of Canada. The annual value of manufacturing in these states is about \$10 billion, while retail sales exceed \$22 billion a year. The Dallas and Fort Worth region is the fourteenth largest metropolitan area in the United States.