

## Japanese satellite station in Canada

Canada and Japan have concluded an agreement on the establishment of a temporary satellite-support facility at the Churchill Research Range in Manitoba.

The station will be used in connection with a Japanese study of the aurora polaris and its related phenomena over the northern auroral region through the *Exos-A* satellite. The 127-kilogram *Exos-A* was launched into orbit from Japan on February 4 by the University of Tokyo's Institute of Space and Aeronautical Science.

The agreement is a further step in recent efforts to expand bilateral co-operation in science and technology between the two countries.

## British Columbia's roots

This year British Columbia celebrates the bicentennial anniversary of the landing of British explorer James Cook. Tall-masted ships from around the world will sail to Canada's west coast reliving Captain Cook's historic voyage.

Born in Yorkshire, England, James Cook began his career at sea in 1746. He rose quickly through the ranks of the Royal Navy, became a captain, and was soon recognized as one of the world's most famous maritime explorers and navigators. On his third voyage he was directed to seek a navigable sea route from the Pacific to the Atlantic. He left England in July 1776, aboard the H.M.S. *Resolution* accompanied by the *Discovery*.

In March 1778, he reached the western shores of Vancouver Island and anchored in Nootka Sound to refit his ships. Cook's log book records that his stay lasted for more than a month. It was his trading with the natives at Nootka Sound that established the British claim to the territory leading to the creation of British Columbia.

The following year, Captain Cook was killed by natives in Hawaii but he left his maps of Canada's west coast, which were the basis for future exploration.

During the year, James Cook will be honoured as Vancouver actor Kelvin Andrew, who bears a striking resemblance to the explorer, visits many communities in British Columbia.

This month the Royal Hudson steam

train leaves British Columbia with "Captain Cook" aboard to tour eastern Canada and the United States. During the summer he will be the star of the Heritage Performing Arts Festival in Vancouver and the Folkfest '78 celebrations. At that time, the tall ships will once again appear on Canada's west coast as British Columbians honour the accomplishments of Captain James Cook.

*The foregoing article, by Alyn Edwards, has been reprinted from Canadian Scene, February 17, 1978.*

## Common denominator discovery of meningitis vaccine

Meningitis, a disease of the nervous system which still plagues areas of South America and Africa, may soon be virtually eradicated thanks to a vaccine developed in Canada.

The vaccine was produced in 1974 through the collaborative efforts of three scientists: Harold Jennings and Ian Smith of the National Research Council and Paul Kenny of the Department of National Health and Welfare. The Frappier Institute of Montreal, which is licensed to manufacture vaccine for human use, has been conducting tests on the serum for the past 18 months and is now ready to submit it to the National Health and Welfare Department for approval.

Meningitis is caused by bacteria that normally produce only mild infection of the nasal passages and sinuses; however, in infants, youths and immunologically-deficient adults, the disease organism can invade the bloodstream, and thence the meninges, the membranes surrounding the brain and spinal cord, resulting in a serious and often fatal condition. Control of the disease by antibiotic drugs is difficult, since drug-resistant strains of the bacteria have arisen through natural selection. Moreover, until now, immunological control of meningitis has eluded medical science because of the existence of at least four disease-producing bacteria types; inoculation against one type would not immunize against other strains.

Dr. Jennings and his colleagues first determined the chemical structures of the various bacteria types. Next, an antigen, or molecular compound, common to all strains, was produced. Subsequent experimentation with mice demonstrated the "common antigen" to be an effective immunological agent. In laboratory tests,

90 per cent of experimental mice inoculated with the antigenic compound survived massive doses of meningitis, whereas 95 per cent of those not inoculated died.

If the vaccine is approved, blood sample studies will be conducted on human volunteers to determine its effectiveness. The vaccine will then be submitted to the World Health Organization for field trials in high-risk areas.

Dr. Jennings speculates that the "common antigen" approach to immunization may lead to vaccines for pneumonia, whooping cough and other diseases caused by more than one type of bacteria.

## Arctic wildlife protection



Special protection of a site containing the largest concentrations of birds and mammals in the high Arctic known to scientists has received approval in principle. The site, which spans Bathurst Island between Bracebridge and Goodsir Inlets, includes the Polar Bear Pass lowlands, described as a life-support system for herds of muskoxen and Peary's caribou and critical breeding habitat for many species of birds.

During a two-year consultation period conducted by the International Biological Program — a co-operative effort sponsored by the United Nations — "existing mineral and petroleum rights will be fully honoured and any surface use of the land will be closely regulated by special controls applied under the Territorial Land Use Regulations", announced Northern Affairs Minister Hugh Faulkner.