
Canada-Spain-IAEA trilateral safeguards agreement

Canada and Spain signed a treaty on February 10 with the International Atomic Energy Agency in Vienna.

This procedure completes the bilateral arrangement Canada negotiated last year with Spain bringing safeguards into full conformity with the principles announced by the Government in December 1974 regarding nuclear supplies of Canadian origin.

The trilateral treaty deals with the safeguarding and verification of Canadian source nuclear material sold to Spain under contracts in effect before December 1976.

Conifer radiation sickness

The harmful effects, if any, of exposure to very low levels of radiation from radioactive materials may not show up in people for years, but in pine trees they manifest themselves quickly – and dramatically.

That discovery was made by a University of Toronto (U of T) radiobiologist, Dr. Gordon M. Clark, during experiments completed recently at a dump for radioactive waste at Port Hope, Ontario. Clark found, somewhat to his surprise he says, that 300 one-year-old spruce and pine seedlings he had planted there showed readily observable deviations from their normal growth patterns, after only one month of exposure. What's more, a row of Scotch pine that had been growing there for years were less than half the size of a similar row of Scotch pine planted about the same time nearby. And the pine cones looked much smaller. Close examination, in fact, showed that much of the seed in the cones had not matured.

Subsequent laboratory tests at the Ramsay Wright Zoological Laboratories at U of T confirmed what Clark had immediately suspected: the conifers were exhibiting a kind of radiation sickness. "There is little doubt about it," Clark says. "These trees are very sensitive to radiation."

That conclusion is of more than academic interest. Radiation at the dump site, where radium and uranium residues were discarded from 1949 to 1954, is very weak – outside the inner

fenced area at least – but it is still strong enough to be far in excess of what is considered a safe level for people. About one month's continuous exposure in the inner area would bring a person's dose up beyond the permissible level. What Clark foresees is the possibility of giving the Christmas tree a new job: that of radiation watchdog.

"It would be an ideal dosimeter – a biological dosimeter," he says. "And not only is it a good measurement system, it's also something people can relate to. A pointer going over a scale to indicate radiation – that doesn't mean anything to most people. But show them a pine cone – they know what that is."

The correlation between the level of radiation exposure and the trees' growth, in fact, appears so telling and consistent that Clark expects to be able to draw up so-called dose-response-curves that will make it possible to determine fairly precisely the radiation dose received on the basis of such factors as root and stem growth and biomass of pine seedlings.

Clark says he hopes to continue his investigation at the dump site, and may extend the research to small mammals. Another possible area of investigation is the study of the effects of radiation on aquatic life.

More Canadian place-names

The name of Calgary in Alberta borrowed from the Scottish Island of Skye, was bestowed by a homesick Canadian mounted police officer in memory of the parish of his birth, says Marcus Van Steen in another article on Canadian place-names in *Canadian Scene*.

And what could be more Canadian than Sudbury? This northern Ontario city has become world famous for nickel, of which Canada is the major world supplier. The name has nothing whatever to do with mining or industrial activity of any kind. The original Sudbury is a tiny rural community in Suffolk, England, and originates in the Saxon words *suth beri*, or South Fort. The name was brought to Ontario by James Worthington, construction chief, when the CPR was being laid in Northern Ontario in 1882-83.

In Quebec, St. Lin is a charming little community in the county of L'As-

somption on the north shore of the St. Lawrence, downstream from Montreal. It is of historic interest as the birthplace of Sir Wilfrid Laurier, the great liberal prime minister, but its name comes from Rome. St. Lin, or St. Linus, is mentioned in the New Testament as one of the brethren who stood firm in the face of persecution. Eventually, he succeeded St. Peter as Bishop of Rome and head of the Christian Church.

Heroes remembered – but rarely

It is perhaps symptomatic of our national character that so few of our place-names commemorate national leaders or military heroes. When Canadian towns are named after people, the name usually commemorates an early settler, surveyor, a postmaster, or a remote royal personage. One exception is Brockville, Ontario, named after the hero of the Battle of Queenston Heights in the War of 1812. And of all Canadian fathers of Confederation, only Sir George Etienne Cartier is commemorated, in Cartierville, Quebec.

On the other hand, a city in British Columbia was named after the commander of an invading force that was attempting to seize a part of Canada for Spain. This was in 1789, after the great British explorer James Cook had visited what is now known as Vancouver Island, and in trading with the Indians had discovered the magnificent sea-otter pelts. This brought a rush of traders to the Pacific coast which had already been claimed on behalf of Spain, although Spanish rule at the time did not extend north of California.

A Spanish fleet sailed into Nootka sound, seized a number of English trading vessels and landed an army under the command of Dom Pedro Alberni. He set about securing Spanish rule over the area, which remained in effect until 1794 when a British fleet under Captain George Vancouver reached the West Coast and persuaded Captain Alberni to pack up and go home. The site where the Spanish captain had established his headquarters is called Alberni, still a port of some importance.

Captain Vancouver's name is remembered in the island and in British Columbia's great port city, but strangely enough no name recalls Captain Cook, who attracted European attention to the area.