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## Grapes improved by cloning

A cloning technique for grape plants that could have a significant impact on the Canadian wine industry has been developed at an Agriculture Canada research station in Saanich near Victoria, British Columbia.

The cloning process will help vineyards produce more virus-free plants and help meet the strict regulations of the fruit industry, says Bob Harris, head of the research station.

"By using conventional methods, which is usually by making cuttings, it takes quite a few years before you can get enough grape plants to start a vineyard, and you can't be sure they'll all be virus-free," he said.

"But with cloning, you can get a million or more virus-free plants in a year and it requires far less space."

The cloning procedure involves an "explant", or part of a plant, grown in a test tube in a solid medium made of essential nutrients solidified with agar jelly.

After about four to six weeks, when the explant has grown to about one centimetre, it is placed in a liquid medium, also made of essential nutrients.

The explant then produces shoots that are cut off and placed in a diluted medium of one-quarter strength. After the shoots root, they are placed in soil and grown like any other plant, with one difference — they are identical to the parent plant.

Cloning is not new, Mr. Harris said, but the techniques for cloning grapes — getting the right nutrient medium and the right sequence of procedures — were developed at the research station.

## Virus-free plants

Mr. Harris said the station now is developing a technique by which virus-free plant material can be reactivated for later use.

"We're working on a method where we can keep a piece of tissue in a test tube as a source of virus-free material. When you want new plants, you'll just go to the test tube and reactivate the material," he said.

Plant viruses can be eliminated by cloning tissue cultures, he said. Viruses kill plants or dramatically reduce their yield.

"If a plant is growing fast, particularly at a high temperature, it can outgrow most viruses. If a small piece is taken from a fast-growing point on the plant, it is often virus-free," said Mr. Harris.

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## Spanish galleon taking shape

Steve Martin, a lithographer who works in London, Ontario, owns a canoe but has always wanted something bigger.

Ten years ago he went shopping for a Spanish galleon in a library and, armed with blueprints he drew up from pictures of historical vessels, began building his dream.

Mr. Martin and his wife, Jeanie, have devoted themselves to the steel frame ship for years, and hope to have it seaworthy next summer. He estimates the cost of building the six-metre (20-foot) vessel at about \$35,000.

Tentatively called the *Golden Lion*, the ship has a steel frame that is a concession to modern times, as are the 150-horsepower engine and the contemporary appliances they hope to include.

Otherwise the ship, which is being built at their home here, should resemble galleons of armadas past, with wood trim, deck and interior.

The frame's welding is just being completed and work will now begin on the interior.

The Martins hope to sail their galleon to South Africa and Australia, but before the galleon can face the sea it must first be transported by flatbed truck to Lake Erie.

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## Forest centre of calm

Some 35 miles (56 kilometres) northwest of Montreal, at Mirabel, is an agricultural forest, situated within minutes of one of Canada's most modern international airports.

Where the airport is a hive of modern urban living, with giant jets from all over the world whining down miles of concrete runways, the forest Centre is a haven of beauty, tranquility and greenery.

Arriving at the Centre, the visitor quickly forgets the cares of city life. The air of calm begins upon meeting the six Centre guides, most of them students, who receive visitors and help them orient themselves for a communion with nature.

The Centre's architecture is designed to assist the guides to prepare visitors for their tour of the grounds. Off the spacious central lobby is an exhibition room, a theatre and a naturalist's workshop. Outside, wide paths wind through the woods.

There is a forest garden, a formal garden, two maple sugar shacks, one a pioneer operation, the second embodying modern maple sugar technology, and three forest workshop pavillons. Elsewhere in the 505-acre (202-hectare) Centre are woods composed of almost every tree that grows in Canada.

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## Special welcome for Indochinese refugee



Canadian Minister of Trade Ed Lumley (centre) presents a memento to the eighteen-year-old Indochinese refugee to depart Thailand for Canada. Mrs. Nguyen (left), while her husband and children look on. To the right of the minister are Mrs. Lumley and the Canadian Ambassador to Thailand Fred Bild.