

Commonwealth Day observed

Commonwealth Day was observed in Canada and throughout the Commonwealth on March 12, the second Monday of March, in accordance with a proposal made by Prime Minister Trudeau at the 1975 Commonwealth Heads of Government Meeting held in Kingston, Jamaica.

The observance of Commonwealth Day is intended to emphasize the value Canada attaches to its association with the Commonwealth's 40 countries, representing many races and cultures.

A varied program of events marked the day in Canada. Special inter-faith services were held across the country, and in Ottawa there was a display of the flags of the Commonwealth nations in Confederation Square and a reception hosted by Commonwealth High Commissioners.

Drifting snow reduced to a mathematical model

Drifting snow can bury entire buildings, cover roadways and make aircraft landings impossible.

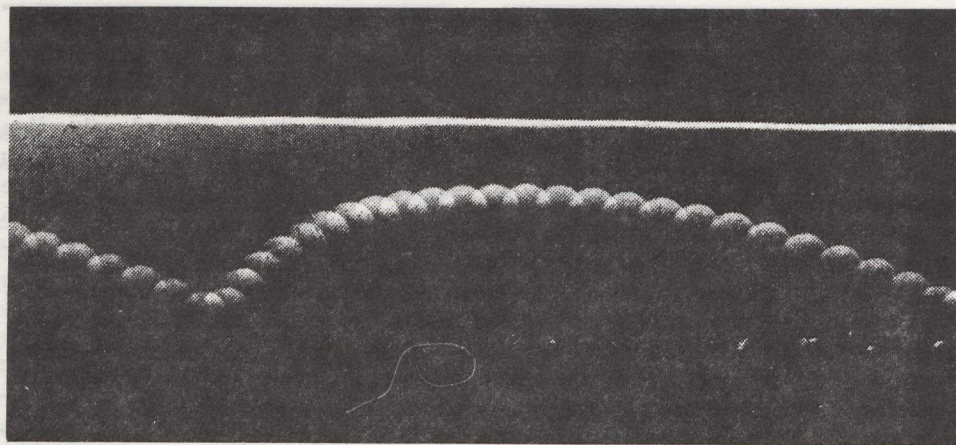
While experience has shown that snow drifting is strongly affected by temperature variation, humidity and solar radiation — all of which contribute to the formation of cohesive forces between snow crystals — research on drifting has been done, until now, only on non-cohesive particles such as sand or dry snow and has failed completely to solve many of the practical problems people face in the Arctic.

However, Dr. J.S. de Krasinski, a professor in the department of mechanical engineering at the University of Calgary, and Dr. J.T. Szuster, a visiting researcher from the Technical University of Warsaw, have now completed a research project on the effects and implications of cohesive forces on drifting snow.

The results are better than originally expected, says de Krasinski, and confirm known experimental data on sand and snow drifting without cohesive forces.

It was apparent that even comparatively weak cohesive forces have a great influence on drifting — the higher the cohesion, the higher the wind velocity required to lift the particles off the ground.

Once the results of the tests were analysed and the data fed into a com-



A centrifuge was used to study strength of cohesive forces on particles the size of snow flakes as well as models the size of ping pong balls. The stroboscopic photograph (above) shows a ping pong ball in a moving stream of water (used to simulate wind).

puter, the researchers developed a mathematical model which will accurately predict the effects and implications of cohesive forces on drifting snow.

Meteorologists will now be able to predict how much drifting will occur at certain temperatures, or on a sunny day as compared to a dull day.

"The model can even be used to predict such refined details as the effects on a solid particle's landing characteristics due to its rotation and the attracting forces between the particles on the ground," says Dr. Szuster.

"This is very basic research but it will have many practical applications," he comments. "Our results can be applied, not just to snow drifting, but to sand drifting, silting in rivers and even dust problems arising from transporting coal in pipelines.

"More research is needed but an important chapter in the drifting mechanism has been opened."

The research project was sponsored by Imperial Oil Limited.

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Test-tube potatoes

A scientist at Agriculture Canada's research station at Morden, Manitoba, has pioneered a method of growing potatoes in test tubes.

"From this meagre beginning," says scientist Andy Russell, "enough tubers are produced in two years to get growers started on a new variety. In effect we can get a tonne of potatoes from a test-tube plant."

The idea began with a technique involving tissue culture, used at Agriculture Canada's Vancouver Research Station, where it is used in the evaluation of plant diseases.

"The time needed to build up the necessary stock to get growers started is much less than the old method. We also save space and disease problems are greatly reduced," Mr. Russell explains. "Sanitation is much easier because we can keep the cultivars disease-free in the test tubes and later in the greenhouse."

From a plant with ten leaves, Mr. Russell roots cuttings under conditions of long day-length in a greenhouse. Each cutting produces another plant that is transplanted into flats and can in turn be used to produce ten more cuttings. The process continues until the necessary stock is produced.

"We even get a little bonus in that many of these plants in fact produce small tubers in the flats. These are also used in the multiplication process," the researcher says.

He stresses the main use of the system is to get potential potato varieties to growers as quickly as possible and to obtain an early evaluation from industry. Mr. Russell predicts a substantial increase in potato acreage on the Prairies in the next decade.

"There were 42,000 acres of potatoes grown in Manitoba alone last year," he says. "Another 20,000 acres were grown in Alberta and Saskatchewan. This could increase by at least 10,000 acres by 1988."