

Bright prospects for Canada's travel-account balance

The Bank of Montreal's July *Business Review* says that the Olympic Games should give Canada its best international travel-account balance since 1967.

Although the account registered a record \$727-million deficit for 1975 and a record \$660-million deficit for this year's first quarter, the *Review* is counting on the economic recovery in the United States and the Montreal Olympics to reverse this trend.

The *Review* believes that, while the Montreal Olympics are not expected to match the 60 percent gain in international tourist receipts during centennial year, there are grounds for comparison, and a small surplus may even be produced by the end of the year.

Smaller growth in Canadian overseas travel would also benefit the international travel balance, the *Review* points out. This occurred in 1967 and contributed to the centennial year surplus — one of only two since 1950. The Olympics could have kept Canadians from travelling abroad, thereby reducing the dollar outflow which was a major factor in the first-quarter deficit.

Plastic that crumbles in the sun

Professor James E. Guillet of the University of Toronto's chemistry department has designed a method whereby plastic is manufactured with a built-in sensitivity to the sun's rays.



Professor James Guillet

The new plastic is rendered "photo-degradable" and after a few weeks of exposure to the sun, it crumbles into small particles that are as susceptible as a leaf to the degradations of bacteria.

A plastic coffee cup made in the new method can be crumbled like clay. Professor Guillet, a U of T graduate, explains: "For 12 years, my students and I have been studying the effects of light on plastic's large molecules which, arranged as they are on long chains, give the material its characteristic strength. No harmful additives are used to make plastic photodegradable, but during its production we introduce a new group of atoms. In the presence of sunlight, these groups act as scissors, cutting the chains and making the plastic brittle — at a rate that is proportional to the intensity of the sun's rays. Rain, wind and the ocean's waves help finish the job."

Indoors, the new plastic remains stable, since most window glass filters out ultra-violet rays. The rate of photodegradation can be controlled by varying the amount of sensitizing molecules used. "Articles of short-term use, such as plastic caps, will be made to disintegrate more quickly than a heavy-duty container," says the professor.

The photodegradable plastic may also have a role in producing more food. This summer at Guelph, Ontario, ten acres of vegetables are being grown through appropriately spaced holes in sheets of the material. Professor Guillet explains that "weeds, deprived of sunlight, cannot grow under the sheet. Thus time-consuming weeding is eliminated — and the plants don't have to compete for the earth's nutrients. The sheet also retains moisture, like a greenhouse — a pragmatic potential for any developing country where the rain falls in one season. We have shown that vegetables grown this way ripen two weeks earlier, can be grown successfully much farther north, and that 50 percent more produce is reaped. At the end of the season, the sheet will simply disintegrate."

Professor Guillet's research is supported by industry and the National Research Council of Canada. The University of Toronto holds the basic patent rights to the new photodegradable plastics. (From an article by Robbie Salter in the University of Toronto's *Bulletin*, June 25, 1976.)

Meteorites on bottom of Arctic Ocean

Members of the Geological Survey of Canada, Department of Energy, Mines and Resources, found clear evidence of living creatures and bits of cosmic matter when they obtained samples and photographs of the bottom of the Arctic Ocean. The operation was carried out from an ice station established by the Arctic Ice Dynamics Joint Experiment (AIDJEX) about 600 kilometers north of Alaska, where the water depth is about 3,700 meters.

Special camera

Photographs, which were obtained with a special deep-sea camera showed numerous structures produced by bottom-dwelling organisms — trails, rings, mounds and peculiar features about 20 cm in diameter. Unfortunately, no photos of actual organisms were obtained.

Other interesting discoveries, dug out by equipment that was driven into the sediment, were microscopic, shiny, perfectly round spherules, which scientists believe to be of extraterrestrial origin. They are held to have resulted from the ablation, or friction, of iron meteorites during their descent through the atmosphere. One sample of bottom material, weighing less than one quarter of a gram, was found to contain 35 such spherules. This is the first time that these cosmic objects have been reported from the bottom of the Arctic Ocean.

Housing increase in June

Housing starts during June were at a seasonally adjusted annual rate of 278,700 for all areas, according to preliminary figures issued by Central Mortgage and Housing Corporation. The rate in May was 271,700.

Actual starts in urban areas in June were 23,705, an increase of 37 per cent from the 17,311 recorded in June of last year. During the first six months of 1976 starts totalled 99,268 dwelling units compared to 64,794 a year ago.

Starts of single detached dwellings during June totalled 10,292 compared to 10,000 in June 1975, an increase of 3 per cent. Starts of multiple dwellings were also up, 84 per cent to 13,413 from 7,311.