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At Habitat Forum on June 6, a resolution was approved demanding clean water throughout the world by 1990. Justice Minister Ron Basford, leader of the Canadian delegation, pledged clean water for every Canadian community by 1980.

Habitat conference glimpses a Canadian waste-management system

Among the many demonstrations, films and exhibits shown at Habitat: the United Conference on Human Settlements that was held in Vancouver from May 31 to June 11, was a film demonstrating a Canadian-invented system for managing waste. CANWEL, developed by Central Mortgage and Housing Corporation, is described below.*

Conference delegates – over 2,000 strong – and participants in Habitat Forum – about 5,000 persons representing non-governmental agencies – were invited to visit the Ontario Research Foundation Laboratories at Sheridan Park, Mississauga, near Toronto where the project is being refined and improved. A demonstration unit will be installed next year in an apartment building in Toronto.

Populations grow constantly, but the lakes and rivers on which they depend for their water remain the same. Many of even the largest lakes are today experiencing the strain of excessive domestic sewage. They are aging much faster than in the past, becoming old long before their time. The degradation of the (fresh water) Great Lakes and the larger (salt water) Mediteranean Sea are prime examples.

The only way to combat this process is to reduce the waste load by treating both industrial and domestic wastes efficiently *before* they enter the natural system. The idea is not new. The Egyptians began experimenting with the chemical treatment of waste water over 3,000 years ago.

CMHC search for solution

As part of its unending search for *long-term* solutions, Canada, through its federal housing agency, Central Mortgage and Housing Corporation, has spent over 15 years in developments leading to a system of total waste-management.

The Corporation's multi-pronged attack on the problems of sewage treatment, fresh-water use, energy conservation and environmental protection is aimed at the development of an economical waste-management technology that will produce an effluent as good as unpolluted, high-quality streams, avoid the disadvantages of chlorine, offer an alternative to existing centralized systems, and conserve as much energy as possible.

CANWEL is the answer

The result of these initiatives is the *Canadian Water Energy Loop* (CANWEL) in which the effluent from sewage treatment has a very high degree of purity, solid waste can be converted efficiently to heat energy, and both processes are free of environmental pollution hazards.

CANWEL promises to be simple, very reliable, and highly efficient, satisfying the most demanding requirements for protection of the environment and conservation of resources. It promises as well to be economical to install and cheaper to operate than conventional processes.

CANWEL employs well-known and widely-applied principles, and derives its success from an innovative application of these principles, supported by the most efficient engineering. CANWEL has achieved complete and comprehensive compatibility among the functions of the various elements of the system.

Planners from CMHC and the Ontario Research Foundation developed a list of criteria for the system. To be considered successful, CANWEL must:
(1) achieve a significantly higher level of performance than conventional systems;
(2) maintain a high level of reliability and sustained efficiency over long periods of virtually unattended operation;
(3) require capital investment not ex-

* The CANWEL process is the subject of patent applications in Canada and abroad. The name is a registered trademark and the property of CMHC, Canada.

ceeding that of conventional plants; (4) have lower operating and maintenance costs than conventional plants; (5) create an opportunity for each of the three sub-systems – *sewage treatment, water polishing,* and *solid waste treatment* – to be used independently or in any integrated combination. Research and development to date indicate that CANWEL will be able to meet these requirements.

Sewage treatment

Using a new combination of physical, chemical, and biological processes, the *Sewage Treatment Unit* produces from raw waste water an effluent free from viruses and bacteria, with exceptionally low levels of oxygen demand, phosphates and nitrogen.

The biological reactors use a sludge of mixed microbial population and controlled aeration to convert organic wastes to carbon dioxide, nitrogen and cell mass. After the effluent has passed through a precipitator and clarifier, it is treated with ozone to oxidize residual contaminants and to disinfect it completely.

Aeration and all transport of liquids and sludge through the system are currently achieved by a single-air-blower, and other mechanical equipment has been kept to a minimum to reduce operating and maintenance costs.

By renovating waste water to a quality that permitted disposal *via* storm sewers or natural runoff systems, the CANWEL *Sewage Treatment Unit* could reduce the need for sanitary sewers and subsequent collection costs.

In most industrialized nations, all domestic water, whether for personal consumption or merely for flushing toilets, is raised to the same high standard of drinking-water purity, involving considerable processing expense as well as the cost of transporting large volumes of water from a central purification system to the ultimate user. Effluent from the *Sewage Treatment Unit* promises to be superior to many natural water courses and could therefore be considered safe for domestic utility uses. These uses account for at least 60 per cent of total domestic water demand. By producing an effluent suitable for such uses, the *Unit* offers the opportunity to conserve

natural fresh-water supplies and reduce the associated underground services required.

Generally, Canadian communities have an adequate supply of fresh water, and the need for fresh water conservation is based on the desirability of reducing processing and distribution costs for large quantities of potable water. In many parts of the world, however, fresh water is scarce, and the conservation of limited supplies is critical to the maintenance of life itself. In such situations the re-use of renovated waste water for utility purposes may have the effect of doubling the availability of water. And the more often it can be recycled, the greater the benefit.

By producing an effluent suitable for undiluted surface discharge, CANWEL will out-perform any conventional system. Nevertheless, it is expected that capital costs for the *Sewage Treatment Unit* will not exceed those for conventional plants. Operating costs are also expected to be lower than for conventional systems. Eventually, further economies can be anticipated through reduced costs of collection and fresh-water delivery services.

Water polishing

Persistent industrial wastes along with excessive dissolved salts and other natural contaminants occasionally create hazardous conditions that cannot always be eliminated by conventional filtration processes.

CANWEL's *Water Polishing Unit* is designed to raise any water of reasonably good quality to the most demanding standards required for personal consumption.

The *unit* exploits the latest proven technologies. It includes filtration and reverse osmosis to reduce contaminants to acceptable levels. Ozonation for disinfection completes the process.

The *Water Polishing Unit* is the final element in CANWEL's water loop, and makes the recycling of virtually all domestic water – except that lost through evaporation – an ultimate possibility. For areas experiencing a net water shortage, the incorporation of the water loop for recycling could increase many times the available drinking-water supplies.

Solid waste treatment

By means of a fully automatic controlled-air incinerator, the *Solid Waste Treatment Unit* disposes of domestic refuse and recovers from it energy for the heating of water. Combined with the *sewage treatment* and *water polishing units* it can also be used to dispose of sewage sludge and brine concentrates from reverse osmosis.

The *Solid Waste Treatment Unit* employs a highly-efficient heat-recovery process. While the incinerator operates at temperatures approaching 900

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National Gallery to lose Jean Boggs

Dr. Jean Sutherland Boggs, who has been Director of the National Gallery since June 1, 1966, will leave her post on July 1 to take up a senior professorship at Harvard University.

In offering her resignation, Dr. Boggs expressed regret at leaving the National Gallery after so many years, but said that she wished to devote herself more fully to the study and teaching of art history without the administrative responsibilities the direction of the National Gallery entailed. To be offered a tenured position at an institution of the stature of Harvard, she added, attracted her professionally; she regarded it as an honour for Canada as well as for herself.

An eventful decade

The National Gallery's ten years under the direction of Dr. Boggs have been eventful ones. Especially in developing the field of Canadian art, her contribution has been enormous; it can be measured not only by the outstanding quality of the exhibitions at the National Gallery but also by the large number of able curators Dr. Boggs has attracted to the Gallery and the increased resources she has obtained for study and research. The administration has been consolidated, publications expanded and a program of national activities developed for all parts of Canada, so that the Gallery's influence throughout the country and its service to both official language groups have grown considerably. Dr. Bogg's book *The National Gallery of Canada,* published in 1971, documents the growth of the Gallery's collection since its earliest days in the last decades of the nineteenth century. The quality and number of the works of art acquired for the National Gallery collection on the initiative of Dr. Boggs have resulted in the most significant collection of Canadian art in the world and Canada's most important collection of Western European art from the Middle Ages to the present day. Dr. Boggs has also played a major role in developing the architectural program for the use of Canadian architects who are competing for the new Gallery building to be erected in the early 1980s.

Jean Sutherland Boggs, photographed with her book, The National Gallery of Canada, *published in 1971.*

Canada's national museums

The National Museums of Canada is a Crown corporation created by Act of Parliament in 1968 to ensure the most effective use of federal funds to build and support a new national museums organization. According to the National Museums Act, "the purposes of the Corporation are to demonstrate the products of nature and the works of man, with special but not exclusive reference to Canada, so as to promote interest therein throughout Canada and to disseminate knowledge thereof". The Corporation headquarters are in Ottawa.

In 1972, the Federal Government announced an additional federal museums policy, the object of which was to make the artifacts and collections representing the Canadian heritage as accessible as possible to Canadians in every province and in the territories.

The Corporation is presided over by a Board of Trustees composed of 14 members from various walks of life and from most parts of Canada. It meets quarterly, at least once a year in Ottawa, and at least twice a year in the regions. Its role is to formulate policies for the Corporation and to ensure that these are carried out in keeping with regulations laid down by Parliament and the Government. It establishes its own procedures and may appoint subcommittees composed of its own members and, for some purposes, other members, to assist in its work.

Secretary-General

The chief executive officer of the Corporation, the Secretary-General, who is a deputy minister appointed by the Governor-in-Council, is responsible for the co-ordination and the application of policies laid down by the Government and the Board of Trustees, for the direct management of the Corporation's finances and personnel, and for the administration of three general function areas – planning, national programs and communications. All common services emanate from "responsibility centres" in the office of the Secretary-General.

The National Museums of Canada comprises, under a single administration, the nation's four federal museums: the National Gallery of Canada; the National Museum of Natural Sciences; the National Museum of Man, which includes the Canadian War Museum; and the National Museum of Science and Technology, which includes the National Aeronautical Collection. Each museum director is appointed by the Governor-in-Council on the recommendation of the Board of Trustees, and has, on behalf of the Board and with the assistance of a visiting committee, the day-to-day direction and management of his museum. Each director is also responsible for professional standards, the custody, preservation, and development of collections, and research and scholarly activities.

Since 1972, the Corporation, with the advice of a Consultative Committee recruited from all parts of Canada, has provided valuable financial assistance and services to non-federal museums across Canada. To date, approximately $30 million has been distributed in various types of financial assistance. A cross-Canada network has been established for sharing knowledge and skills to develop programs, to expand services, and to strengthen and publicize Canada's cultural heritage throughout the nation and abroad.

Habitat Forum – cousin to Habitat

Habitat, the United Nations Conference on Human Settlements, held in Vancouver, B.C., from May 31 to June 11, was, as had been expected, the largest such gathering ever convened under the auspices of the world organization, with an attendance record of some 2,000 delegates.

In some ways even more remarkable, however, was the Habitat Forum, held concurrently with the UN conference, which was attended by an estimated 5,000 representatives of non-governmental and intergovernmental organizations and agencies concerned with the problems on the Habitat agenda.

Skilful renovation

A combination conference, demonstration and exhibit site was provided for the Habitat Forum by the reconversion of a former airfield, that consisted of five large hangars. These somewhat unpromising structures were transformed into a handsome complex of meeting-rooms, theatres, exhibition-halls, workshops, restaurants and snack-bars. The renovation program made skilful use of salvage and recycled materials, including a good deal of local wood. The buildings were embellished with carvings, paintings and fabrics, many of which echoed traditional designs used by the Indians of the Pacific Coast. For example, a 70-foot totem pole portraying the conference theme was specially carved for the event.

More than 100 experts on various aspects of human settlements, from almost as many countries, took part in the Habitat Forum discussions.

Elaborate presentations

Demonstrations and exhibits, many of which were large outdoor presentations, added an extra "dimension" to the Forum sessions. At least 12 innovative houses were built "on-site" before and during the conference. The Habitat Forum exhibits included illustrations of applied technology (such as solar-heat collectors and stills), windpumps and sewage-recycling systems (for a description of a notable Canadian sewage-recycling invention see the lead article in this issue). A prototype of the winning entry in the international design contest for rehabilitation of a "squatter" settlement in the Philippines was exhibited, and another exhibit portrayed a commune system of the type to be seen in the People's Republic of China.

Located on the Forum site was a highly-sophisticated mobile television unit, which recorded all major sessions, events and speeches on audio-tape (copies of this audio-visual material were made available to the delegates at cost). The unit – which was, in effect, a self-contained TV production facility – was available to visiting broadcasters who had brought their own crews or were prepared to use a Habitat Forum crew.

Facilities also existed for originating "live" broadcasts from the Habitat Forum, including "tie-in" to international satellite networks. The mobile TV unit had four Norelco cameras, as well as three video-tape recorders. All cameras were mobile. Cables reached all parts of the site.

Canadian accession to international human rights covenants

The Permanent Representative of Canada to the United Nations deposited with the Secretary-General on May 19 Canada's instruments of accession to the International Covenant on Economic, Social and Cultural Rights, to the International Covenant on Civil and Political Rights and to the latter's Optional Protocol.

Although the three documents were adopted by the General Assembly of the United Nations in 1966, they only came into force earlier this year, on January 3 and March 23. They will enter into force for Canada in three months.

Canada's action followed the Federal-Provincial Conference on Human Rights held last December. This conference, and earlier consultations with the provinces, enabled agreement to be reached on the modalities of Canada's accession and on their implementation in Canada, given the division of jurisdiction between the federal and provincial governments.

Because the provisions of the covenants affect several areas of federal jurisdiction, responsibility for their implementations will lie with a number of federal departments. The provinces will take whatever steps are appropriate and hold regular consultations with the Federal Government, with respect to the implementation of these instruments which promote and protect human rights and fundamental freedoms.

Children's literature prizewinners

The Canada Council has announced the first two winners of its new Children's Literature Prizes – Bill Freeman, for *Shantymen of Cache Lake* (James Lorimer & Company, Toronto) and Louise Aylwin, for *Raminagradu* (Editions du Jour, Montreal).

The prizes, each worth $5,000, were presented to the authors in Vancouver on May 14, at a reception held in conjunction with the Pacific Rim Conference on Children's Literature.

The Canada Council established the Children's Literature Prizes as part of its book promotion and distribution program to aid and encourage Canadian authors. The prizes will be given annually to the authors of two books for young people (one in English, one in French) which are judged to be the best of their kind published during the preceding calendar year. Eligible are books written by Canadians, whether published in Canada or elsewhere.

Bill Freeman's *Shantymen of Cache Lake* is an adventure story about two young people working in a lumber camp in the Ottawa Valley in the 1870s. Only the characters in the book are fictional; everything else – the towns, the rivers, the shanties and the work of the shantymen – is based on historical fact and documented in the book by actual photographs.

The book, Mr. Freeman's first, grew out of his interest in social history, especially the trade union movement, in the 1870s and his concern with the lack of good Canadian literature for children.

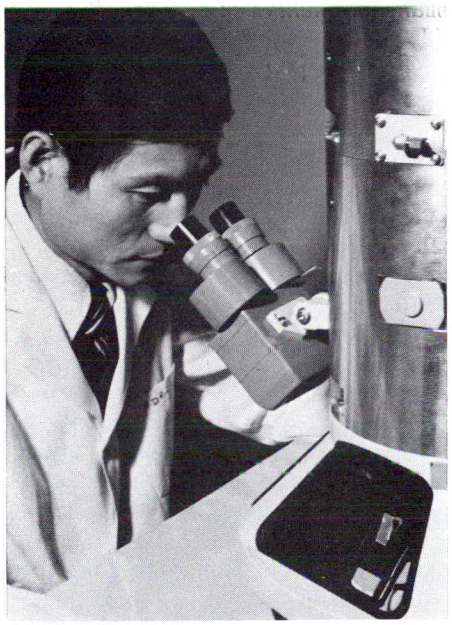
Louise Aylwin's *Raminagradu* is a big purple bird who appears in Louise Aylwin's collection of fantasy stories for children aged "12 to 90". The stories are completely hand-lettered and illustrated by the author, with pictures for the reader to colour.

The book, Ms. Aylwin's first, has also won the 1974-75 Prix Marie-Claire Daveluy from ASTED, an association of professional librarians in Quebec.

Isolated animal virus may help multiple sclerosis research

A virus in sheep, causing scrapie disease, which has eluded scientists for decades, has been isolated by a veterinary scientist at the Agriculture Canada Research Station in Lethbridge, Alberta.

Dr. Hyun-jo Cho says the procedure he used may be worth applying in the search for an infectious agent in certain human diseases such as multiple sclerosis.



Dr. Hyun J. Cho looks through the electron microscope he used to photograph the sheep scrapie virus he recently isolated.

Scrapie disease, although rare, is always fatal and was believed to be hereditary until 1935. At that time, a vaccine made from sheep brain for use against another disease, was inoculated into many sheep, the majority of which contracted scrapie. With this evidence, scientists started to believe scrapie was an infectious disease.

Method used

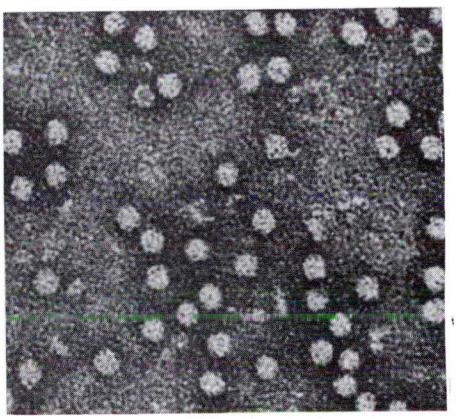
Dr. Cho began his work in August 1974. Later that year he injected scrapie agent from infected sheep brain tissue into the brains of mice. When, after 18 to 23 weeks, symptoms of scrapie began to show, 130 grams of brain tissue from the mice were homogenized. A high-speed blender was used to reduce the cellular structure to a fine suspension.

Purification was the next step and then the virus was concentrated in a pellet.

In collaboration with fellow Agriculture Canada veterinary scientist, Dr. Andrew Greig, the virus was photographed by an electron microscope at the Animal Diseases Research Institute in Ottawa.

While studying Aleutian mink disease for his doctorate, Dr. Cho had succeeded in isolating the virus, and had shown it to be 23 nanometers (23 one millionths of a millimeter) in diameter. This contributed significantly to the success in isolating the virus of scrapie, which is the smallest virus ever reported, having only a diameter of 14 nanometers.

"Using lots of material also greatly helped the study," he says. "When you start with a lot of brain tissue, the chances of isolating the disease-causing agent are multiplied."



The elusive sheep scrapie virus, magnified 250,000 times through an electron microscope.

Dr. Cho confirmed his first results by putting the brains of scrapie-infected hamsters through the same process. The scrapie virus was again visible with the electron microscope.

Dr. Cho's final proof was the ability to induce scrapie by inoculating mice and hamsters with the virus from the test animals.

The main thrust now is to develop a fast, simple immunological test to detect scrapie in infected animals.

Dr. Cho says scrapie is very similar to kuru, an ailment associated with the people of New Guinea, and another slow-virus disease in humans called Creutzfeldt-Jakob.

Canada/U.S. environment talks

During a recent meeting in Ottawa, Russell Train, Administrator of the United States Environmental Protection Agency, and Canada's Environment Minister Jean Marchand agreed that each country should give the other early notice of proposed developments that might affect the other's environment. Advance assessment of such natural effects is the essential feature of the domestic environmental policies of the two countries, and Mr. Train and Mr. Marchand concurred in the adoption of this approach to transboundary problems.

The two representatives stressed the commitment of their governments to the Great Lakes Water Quality Agreement. Mr. Train stated: "The steps being taken to abate pollution of the Great Lakes are extremely important, and Mr. Marchand has agreed (that) we should visit key environmental-protection installations round the Lakes as soon as possible." Mr. Marchand added: "It is essential that Canadians and Americans begin immediately to plan future development, so that water-quality objectives are met."

The U.S. negotiator expressed the conviction that the current view of U.S. federal pollution-abatement legislation would result in a continued high level of funding for programs necessary to attain the objects of the pact.

No pollution frontiers

"It is well to remember," Mr. Marchand commented, "that Canada and the United States share natural environments, and that frontiers don't halt the movement of pollutants." The negotiators agreed it was therefore important to take account of each country's interests and experience when shaping domestic programs.

There was considerable discussion of the complex problems involved in implementing Canada's Environmental Contaminants Act and the proposed U.S. Toxic Substances Act. "It is clearly the responsibility of governments to protect the public from the effects of the ever-growing number of chemical substances in general use," Mr. Marchand declared. "The effective handling of this important matter is a

challenge facing industry as well as government," Mr. Train responded. He complimented the Canadian Parliament on the passage of such important and necessary legislation. During the discussion, Mr. Marchand and Mr. Train focused their attention particularly on polychlorinated biphenyls (PCBs), persistent chemicals found in varying concentrations in the bodies of fish and fish-eating birds in and about the Great Lakes and elsewhere.

Views were exchanged on the possible effects on both countries of air pollution drifting over long distances, and it was agreed that their respective experts should co-operate in determining the severity of this problem.

Views were exchanged on the Canadian and U.S. air-pollution acts, and in particular on problems such as sulphur emissions.

Early co-operation essential

Mr. Marchand and Mr. Train stressed the importance of co-operation between Canadian and United States scientists at an early stage in environmental research efforts. Mr. Train commented that, "while a considerable amount of scientist-to-scientist contact takes place already, the importance of ensuring that our respective research resources are utilized to maximum advantage warrants specific instructions from Minister Marchand and myself to make a greater effort to benefit from each other's knowledge".

The two negotiators ended their meeting with a review of a number of current transboundary environmental issues and expressed general satisfaction with the way they were being handled. They were particularly pleased that the International Joint Commission was progressing in its study of the possible effects in Canada of the Garrison Diversion Project. Both agreed that the Commission's recommendations would be of considerable assistance to the two governments in solving this problem.

Mr. Marchand and Mr. Train also expressed satisfaction over the co-operative steps taken by their governments and the International Joint Commission to meet both transboundary air-emission and water-use questions posed by the Saskatchewan Power Corporation's Poplar River Project. They noted that agreement had been reached in March on the need for a formal mechanism to address water-quality questions.

Mr. Marchand and Mr. Train feel that Canada-United States discussions of a proposed coal-mine in British Columbia near the Flathead River, which flows into Montana, might well serve as a model of consultation on projects with possible transboundary environmental effects.

In addition to officials from his own Agency, Mr. Train was accompanied in the talks by United States Ambassador Thomas Enders and members of his staff. Mr. Marchand was accompanied by senior officials of his Department and of External Affairs, including an official from Canada's Embassy in Washington.

Manitoba's "friendly" licence plates

The Manitoba motor-vehicle licence plates regulations have changed a lot since the first plates, made of aluminum with white figures on blue background, were issued in 1911.

Before that date, aluminum registration seals were issued by the province. The vehicle-owner had to buy the number and use the provincial seal to affix it to a mounting plate, which also had to be bought.

From 1911 to 1918 the province issued a new licence plate each year, which varied in size and colour. Then, in 1919, a new plate was not issued and a date attachment was secured to the bottom of the 1918 plate.

By 1949, it was the practice to keep one set of plates for two years, with a validation strip added in the second year. Later, single sets of plates were issued for periods varying from five to seven years. When "Autopac" was introduced, insurance stickers replaced the validation strips, starting in 1972.

Manitoba issues more than 30 different types of licence plate according to the type of vehicle and its registration category. While most vehicles carry a pair of plates, some are required to carry only one.

There were 759,000 pairs and 145,000 single plates ordered when the new 1976 plates were issued. These plates are reflective, have sufficient room for renewal decals, and use the three-letter/three-numeral combination which is prevalent in North America.

The "Friendly Manitoba" slogan used on the plates has been used by the province's tourism branch for a number of years. The 1976 plates mark the first time the licence plate theme and a tourist branch advertising theme have been co-ordinated.

New method of gold recovery

The discovery of a new method of recovering gold from carbonaceous gold ore could lead to the exploitation of about four million tons of Canadian ore that has never been mined before. Dusan Raicevic and Robert Bruce, scientists at the Canada Centre for Minerals and Energy Technology, Department of Energy, Mines and Resources, have developed a simple flotation-cyanidation method for recovering 94 per cent of the gold from ore in which graphite and gold are finely disseminated.

In the flotation process, the graphite becomes attached to chemically-induced bubbles and is floated off in a froth using methyl isobutyl carbino (MICB), while the gold and other minerals sink to the bottom of a trough. The gold-bearing pyrite is then floated, roasted at 500 degrees centigrade for one hour, following which the gold is dissolved in a cyanide solution.

The procedure can be easily incorporated into a conventional gold-milling operation. Only a separate grinding unit and a graphite flotation unit are needed. After capital outlay, the only additional cost of treating carbonaceous ore is for the chemical reagent MIBC – about two cents a ton of ore.

Operation lifestyle – an invitation to physical fitness

Health and Welfare Minister Marc Lalonde recently introduced what he calls the "Fit-Kit", which, he says, enables Canadians to estimate how fit they are and assists them in the choice of physical activities appropriate to age, occupation, lifestyle preferences and personal capabilities.

"I want to emphasize at this point the fact that the Fit-Kit is only one element of Operation Lifestyle – which is a determined effort by the Govern-

ment, and we hope in co-operation with other groups in this country, to encourage Canadians to assume greater personal responsibility for their own health," said Mr. Lalonde.

The package, designed in the Fitness and Amateur Sport Branch of the Health and Welfare Department, includes the Canadian Home Fitness Test which enables Canadians to evaluate safely their current state of cardio-vascular fitness and to compare themselves to standards for their age and sex. Another element is the Walk-Run Distance Calculator, which enables each individual to work out a personal exercise program.

"Why are we so concerned about lifestyle? To take just one example: half of all motor vehicle accidents involve alcohol. The health costs alone of these accidents are $300 million annually," declared Mr. Lalonde. "Loss of productivity costs another $1 billion a year. Property damages add a further $1.4 billion to the cost of motor-vehicle accidents for a total price tag of $2.7 billion a year. This is a price we cannot afford.

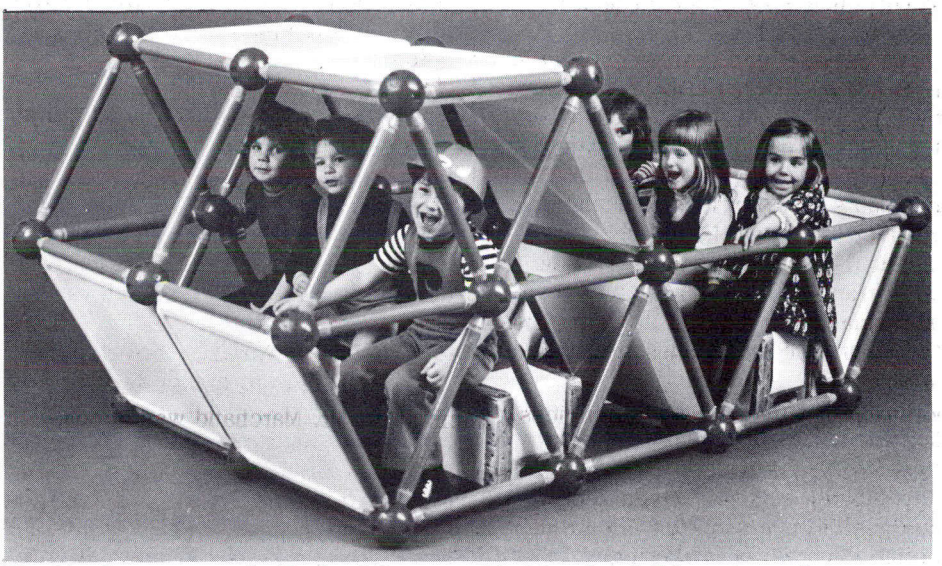
"Speeding, smoking, drinking, overeating or not eating properly – all are part of an individual's lifestyle. Obviously many of the health risks run by Canadians are matters of choice. Surely it would be just as easy to choose a sensible lifestyle. Every accident, every illness that is prevented represents a saving of health to the individual and saving of money to the rest of the population...."

Fun and games and training, too

So that the younger set can capture the team spirit, Maxima 2000 Inc. of Ste-Foy, Quebec, has designed Barboul – a simple, ingenious game that develops children's creativity while stimulating intelligence and imagination.

Barboul consists of two main components: a smoothly-finished sphere and a connecting-rod that can be put together to make two basic structures – one triangular, using a 60-degree angle to make an equilateral triangle, and the other cubic, using a 90-degree angle to make squares.

Designed for children at nursery or kindergarten level, and for use at day-care centres, Barboul teaches children how to socialize. Because of its size, they must work together to assemble it and, since they design their own structure, they must think and plan how they want it to look.



The Maxima company's Barboul is assembled by the children themselves.

Being scaled to a child's height, Barboul becomes a true life-size structure. Its big advantage over other models is that the fun doesn't end once the structure is assembled. After completing it, the children can live with their creation by going inside it, around it and climbing on top of it.

Barboul is of sturdy construction and can be put up and taken down by the children at will. Assembling it requires both concentration and dexterity. After the connecting-rod has been inserted into one of the spheres, the child must slip the wrench round the hexagonal nut and turn it until the connecting-rod is tightly fastened.

Maxima 2000 exports to the United States and France and is interested in developing additional markets.

Canadians head Amazon scientific team

The National Research Council of Canada recently announced that it had awarded a $170,000 grant to a pair of University of British Columbia scientists who are heading a study of air-breathing fish of the Amazon River. The award was offered in 1974 under the NRC program of negotiated grants. Payment was postponed until now because of a one-year delay in the preparation for the expedition.

Doctors David J. Randall and Peter W. Hochachka are co-chief scientists, heading Phase III of the *Alpha Helix* Amazon Expedition. This is a multi-phased expedition, comprising biomedical and physical scientific studies proposed for the Amazon basin in the autumn of 1976.

The 133-foot research vessel *Alpha Helix*, after which the expedition is named, is a U.S. scientific facility operated by the Scripps Institute of Oceanography, funded by grants from the U.S. National Science Foundation. The Phase III investigators propose to study the problems faced and the strategies adopted by Amazonian fish that can exist out of water for long periods. Most of these fish have evolved special structures and functional mechanisms that allow them to make forced but temporary dry-land excursions. It is felt that they may be modern analogues of the processes operating in Devonian times.

The research team expects to establish a research site at the confluence of the Rio Negro and Rio Branco, where it will remain for eight weeks beginning September 4.

Medical chemistry award

The Award in Medical Chemistry of the American Chemical Society will this year, for the first time, be presented to a chemist outside the United States. The 1976 recipient will be a

McGill chemistry professor named Bernard Belleau.

The prize, which is to be presented in Salt Lake City, Utah, on June 22 at the Fifteenth National Medical Chemistry Symposium of the American Chemical Society, signalizes Dr. Belleau's contributions to medical chemistry through the application of physical chemical principles to the understanding of drug action at the molecular level, and for devising creative synthetic approaches to important new drugs.

An international figure in his field Dr. Belleau is principally interested in synthesizing drugs. He conceived and developed a series of non-narcotic analgesics, one of which is currently being prepared for marketing.

Habitat conference glimpses CANWEL

(Continued from P. 2)

degrees Celsius, exhaust is generally below 30 degrees. The exhaust from the clean-burning incinerator is free of dangerous particulate matter and cool enough to be released at ground-level – eliminating the need for expensive stacks. No commercial energy-reclamation system rivals this *unit* either in terms of operating efficiency or environmental responsibility.

Current projections suggest that capital and operating costs for the *Solid Waste Treatment Unit* should be profitable from the first day of operation at the 1,000-person capacity. At this scale, the *unit* can be expected to save the equivalent of 110,000 litres (24,000 Imp. gal.) of conventional fuel-oil a year.

By meeting the rigorous criteria established by planners from Central Mortgage and Housing Corporation, CANWEL could satisfy waste-management requirements well into the twenty-first century. There are many opportunities for the application of its technology:

(1) New communities could reap cost and performance benefits by adopting CANWEL instead of conventional systems.

(2) By opting for CANWEL, new suburbs could be developed with less investment in the costly extension of existing waste collection and water-delivery systems.

(3) Through CANWEL, redeveloping inner-city areas to higher densities could become economically attractive where existing water and sewer facilities were already under strain.

(4) Developments on marginal land, where the construction of conventional underground services is prohibitively expensive or environmentally unsound, could become practical, offering the possibility of preserving arable land for food production.

(5) CANWEL could offer solutions to problems faced by many nations. In countries where the growth of cities has seriously polluted fresh-water sources, CANWEL could arrest and reverse the degenerative trend. Where fresh-water shortages have been an obstacle to industrial development and improvement of living standards, CANWEL could assist in expanding the use of these limited supplies.

(6) The CANWEL technology is expected to reduce expenditures for potable water, sewage treatment, and refuse disposal, and to reduce the consumption of fossil fuels.

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Ähnliche Ausgaben dieses Informationsblatts erscheinen auch in deutscher Sprache unter dem Titel Profil Kanada.

News briefs

▪ Fisheries Minister Roméo LeBlanc told a House of Commons committee on May 26 that Canada was prepared to extend its fishing-zone to 200 miles, "in a responsible way". It would be made clear at the International Commission for the Northwest Atlantic Fisheries annual meeting in Montreal next month, he added, that, although the Government was committed to multilateral action, if possible through the Law of the Sea Conferences, it would not wait past this year to take such action.

▪ Canada and the European Economic Community agreed on June 2 on the text of a "framework agreement" for commercial and economic co-operation between Canada and the common market. Texts of the agreements will be submitted to the governments concerned for approval. External Affairs Minister Allan MacEachen said that both sides hoped for formal signing soon.

▪ The fate of the Anti-Inflation Act was left with the Supreme Court of Canada, June 4 after a four-and-a-half day hearing to decide if the far-reaching federal law is constitutional. The nine-judge court heard final arguments, then reserved judgment on what some lawyers have called the most important constitutional issue in 50 years. A finding against the law, which placed Canada under wage and price controls, would throw the entire anti-inflation program into question. A decision is expected by the end of June.

▪ After a week of intensive campaigning, the Public Service Alliance of Canada elected Andrew I. Stewart of Ottawa as its new leader on June 4 to succeed retiring president Claude Edwards. Elected as vice-presidents of the 170,000-member public service union were William C. Doherty, James K. Wyllie, Paul Gascon and Aileen V. Manion. Miss Manion, who has worked for the Department of National Defence for 34 years, becomes the first female on the executive management committee of the Alliance. Five unpaid national directors were also elected, one of whom is Eleanor Ryan of the External Affairs Department.

▪ In 1975, receipts from the tourist industry totalled $8.5 billion, of which $6.7 billion was spent by Canadians holidaying at home. Of the 35.9 million visitors to Canada last year, 34.6 million came from the United States. Tourism constitutes 5 per cent to 6 per cent of the gross national product and employs more than 800,000 people.

▪ Austria has unexpectedly expressed an interest in acquiring a nuclear-power reactor from Canada. The proposal came in recent talks between Austrian Foreign Minister Erich Bielka and Canadian External Affairs Minister MacEachen. A spokesman emphasized that any deal would be under terms that would exclude the possibility of the reactor being used to make a nuclear-explosive device. □