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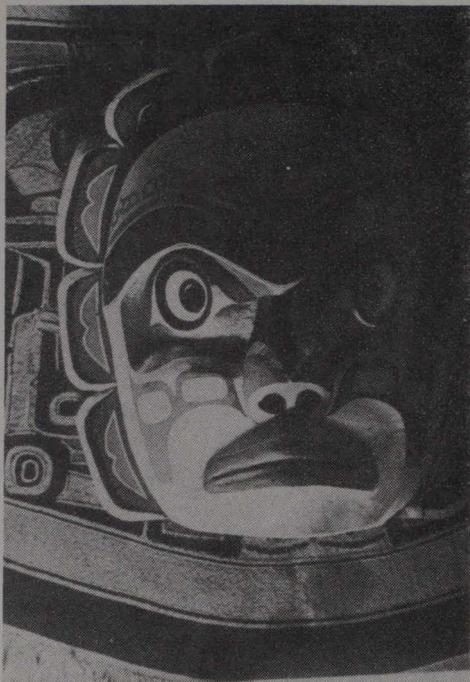
INSIDE
SOLAR ENERGY
THE LITERARY SCENE
INDO-CANADIAN TRADE GROUP

CANADA

CANADA

JAN-MARCH 1977

VOL II No I.



OUR COVER: The sun is a source of infinite energy and various Canadian organisations are today involved in finding the best possible ways to use solar energy for the benefit of man. A special article starting on page 3 details Canadian experiments with solar energy. Our front cover shows an Eskimo sun mask.

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BEST WISHES FROM CANADA

The following is the text of the message of congratulations from the Prime Minister of Canada, Mr. Pierre Elliott Trudeau, to His Excellency, the Prime Minister of India, Sri Morarji Desai:



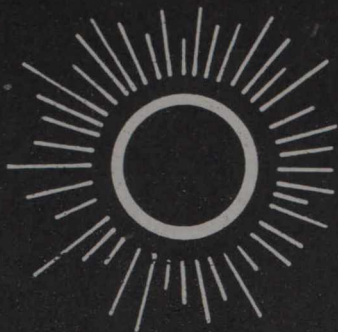
Mr. Morarji Desai

“On behalf of the Canadian Government and people, I should like to convey to you my congratulations and best wishes as you undertake the duties of your high office. As the world’s largest democracy, India bears a responsibility that extends far beyond its own borders. Free people in Canada and elsewhere draw encouragement from the demonstrated vitality in a nation as large and diverse as India of the democratic institutions and ideals that we cherish in common. I am certain that, in the years ahead, the warm relations that have existed in the past between India and Canada as partners in freedom and progress and as sister nations of the Commonwealth will continue to yield benefits to both our peoples. I look forward to joining you at the Heads of Government meeting in London in June.”

Pierre Elliot Trudeau
Prime Minister of Canada

Mr. Pierre Elliot Trudeau





SOLAR ENERGY

SOME EXPERIMENTS IN CANADA

Private and government organisations in Canada have been working steadily to evolve the cheapest and most efficient methods of using Solar energy. Research and development in this field will benefit all mankind by providing an alternate energy source.

It has been calculated that the sun shines with a constant power of 380 million billion billion watts a second. Through two fusion reactions, it transforms an inconceivable 657 million tons of solar hydrogen into 652.5 million tons of helium ash every second. The remaining 4½ million tons of mass is converted into radiant energy. The sun, for all practical purposes, represents an infinite source of radiant energy.

Conversion of this vast mass of radiant energy into heat energy is possible. All you need is a device commonly called a solar collector. It could be a flat plate (or low temperature) collector, or a focusing (or high temperature) collector. Both convert radiant energy, in most cases, to sensible heat, characterized by a change in the temperature of the transport medium. The most common flat plate collectors use either air or water as the heat transport medium.

The focusing collector concentrates radiation from a large collector area and beams it to a small target zone, producing very high temperatures in the area. It holds promise of satisfying certain types of needs, ranging from domestic cooking to high temperature requirements of industry.

As far back as 1946, the Indian Government franchised two factories to make a solar cooker for use by India's 300 million peasants. The experiment aroused much interest even if one made allowance for the fact that the peasants generally preferred to take meals after daylight hours and the women were reluctant to stand in the sun to produce a meal where ambient air temperatures sometimes reach as high as 100°F.

It proved that if focusing collectors were coupled with a storage device which would supply energy on demand, they could prove an attractive method of obtaining high temperatures. Many different types of focusing collectors have since been invented.

The design of solar heat collectors, indispensable as they promise to be, involves research and development in many areas. A technology is emerging which is interested in the performance of glasses, plastics, metals and insulation, particularly for their ability to absorb radiant energy and exhibit low emissivity.

Because of the sporadic nature of solar radiation, it is necessary to complement a solar collector with a heat storage unit to hold surplus heat energy to be supplied on demand.

The storage of heat energy can be accomplished in two ways. First, storage of sensible heat. This involves materials that will exhibit a rise in temperature as the heat energy is accumulated within the storage unit. Some of the more common materials used are rock or stone, and water. The second method of heat storage is the use of heat of fusion of certain materials that accumulate heat energy in a change of state. The materials most commonly used for this purpose are usually waxes or salt hydrates, both of which are still relatively inexpensive.

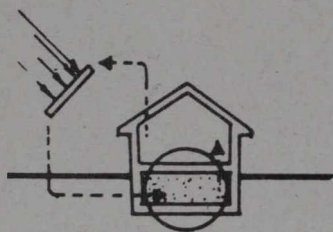
To gauge the heat storage capacity of these two types of storage devices, consider first the sensible heat approach. If we had a well-insulated storage container and wanted to store 2 million units of heat energy using rock or stone, 1,000 cubic feet of aggregate raised to 1000°F above ambient temperature

would be required. This heat energy represents about 4 to 5 days of heating for a typical single-family dwelling. Similarly, if we were to use the heat of fusion material as a storage device, and if we used a material such as sodium sulphate decahydrate (commonly known as Glauber salt), a similar heat storage capacity could be obtained with about 210 cu ft of Glauber salt. This volume represents approximately 10 tons of heat of fusion material.

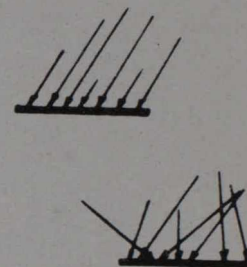
In addition to the provision of heat energy through this new source, it is important to note that improvement in the quality of design and construction of buildings would considerably increase the efficiency of heat energy utilization.

high but the fuel cost is zero. Thus the cost of the heat that is collected is just the cost of "servicing the debt", i.e., paying interest on the capital invested and regenerating the capital during the useful lifetime of the system. These fixed costs depend primarily on the area and type of the collector and are independent of the system utilization factor. However, the amount of heat that is collected and used is proportional to the product of the utilization factor and the system capacity. The unit cost of heat provided by a solar-heating system is lowest, therefore, when the utilization factor is maximum.

A solar-heating system (or any other type of heating system) can be justified economically only if the unit



In the next few years, numerous demonstration projects . . . will yield sound design guidelines for a new technology . . .



All this because it has become clear that alternative sources will be required to meet our future energy requirements. Solar energy, though not a renewable resource, is for all practical purposes unlimited. There is no other source of such vast potential.

It should also be clear that at this stage of our developing technology old solutions do not necessarily apply to new problems. It is important, if effective new solutions are to emerge, that imaginative thinking and creative development be encouraged and sponsored.

If future developments take place as anticipated, the scenario might be as follows. In the next few years, numerous demonstration projects will be sponsored and subsidized by a variety of private agencies as well as by governments. These projects will, it is hoped, yield sound design guidelines for a new technology. It should be realized that although some of these projects will probably not succeed in attaining their stated objectives, they will provide much useful information if they are carefully documented and all details made known to those interested. It is expected that within this same period a small proportion of residential buildings will already be using retrofitted solar heating systems made available through a commercial enterprise to supply a portion of the annual heating requirement. Following this initial exploratory period, many new buildings will have incorporated in their enclosure design partial systems for solar heating space, and possibly domestic hot water heating. At this time, it is thought that the most economical applications will be directed to multiple dwelling units, single-family dwellings, schools and some commercial occupancies which are low rise and have low occupant to floor area ratios.

The capital investment in a solar-heating system is

cost of the heat supplied is lower than for any available alternative. The cost of heating by the best alternative means establishes the reference unit price for solar heat, and this in turn establishes a minimum or threshold utilization factor below which solar heating is not able to compete with alternative means.

Because of the Canadian climate, a large proportion of the energy utilized in buildings is directed to their heating and cooling. The primary barrier to heat exchange with the outside environment is the building enclosure. The building enclosure, or envelope, is usually made up of elements such as walls, roof, windows and doors. For most of the opaque elements, heat transfer will take place by transmission and convection. For the clear elements such as vertical windows, skylights and glass doors, heat exchange by radiation will also take place.

In addition to the energy requirements as a result of heat transfer through building elements heat energy is also used to offset the effects of air infiltration/exfiltration in buildings. Air leakage through cracks or other openings is a function of the building, as well as its height. The rate of air flow due to infiltration/exfiltration will depend on the magnitude of the pressure difference between the inside and the outside and the size of leakage openings. It is unfortunate that infiltration/exfiltration in buildings has become accepted as an intrinsic feature in buildings to the extent that it is regarded by some as a necessary characteristic, particularly in housing. This component can be substantial.

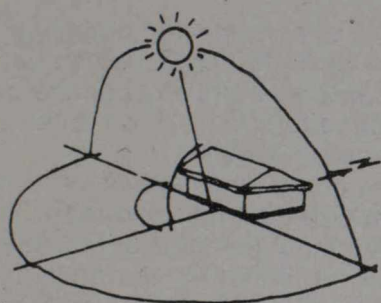
Building enclosure design has been found to be an important factor in optimizing energy utilization. Form or shape, orientation, mass, colour and texture, all of these factors affect the heat transfer characteristics of the building. Some of the more energy-conserving

forms or shapes optimize the orientation of specific building elements. Mass, and to some extent colour, affect the dynamics of heat-energy utilization.

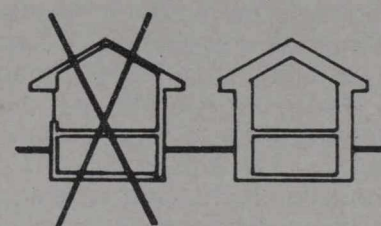
Windows offer very little resistance to heat flow. Improving the thermal resistance characteristics of windows is achieved mainly by the use of multiple glazing. A double window with an air space of one half inch has twice the thermal resistance of a single window. Windows in general, it has been found out after experiments in Canada, transfer about five times as much energy as an equivalent area of typical insulated wall construction. It is therefore, important in design that the amount, type and location of glazing be carefully considered. Since windows admit solar energy, both in

will have to be able to estimate energy consumption

Many applications of solar heating are under way in Canada. Like Gananoque House at Larry's Landing, R.R.3, Gananoque, Ontario, owned by Mr. Larry South. It is a four-bedroom, two-storey house with a usable floor area of 2,200 sq ft, The system, consisting of 230 ft of collector surface mounted on the south side of the roof, uses water as a heat transport medium and 4,000 lb of paraffin wax as a heat of fusion storage unit. Auxiliary heat requirement is provided by a large stone fireplace which has water circulating in the stainless steel clad tubing that surrounds the flue. This hot water is directed to the heat of fusion storage where it will be used again for space heating.



Some of the more energy-conserving forms or shapes (of houses) optimise the orientation of specific building elements. Mass and, to some extent colour, effect the dynamics of heat-energy utilization.



winter and in summer, those facing south are in the most desirable location. They will receive the greatest amount of solar energy during the heating season and they can be shaded most effectively in the summertime.

A south-facing window is exposed to direct radiation from about 9 a.m. to 3 p.m. in summer. Its peak gain occurs at about noon. This gain is only about half that of an east-or-west-facing window because the sun is so high in the sky at midday; therefore, most of the radiation is reflected by the window. In winter the heat-gain picture is completely different. The sun rises later in the morning and remains lower in the sky throughout the day; consequently, a south-facing window gains the most solar heat.

Over the last 10 to 15 years there has been considerable development of techniques for detailed analysis of energy exchanges in buildings. This has involved the application of computers in calculation and simulation of the total building energy system. At present, sets of programs are available which can be used to evaluate the energy utilization consequences at various design stages as well as for modelling existing buildings to determine the optimum operating schedules for conservation.

The Department of Public Works of Canada, using such techniques, has analysed a number of existing buildings and prepared a new operating schedule which has resulted in a substantial saving in energy. It is also applying these techniques to the assessment and development of new building designs.

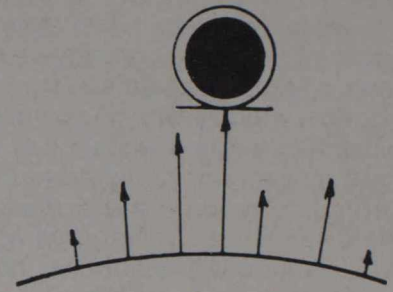
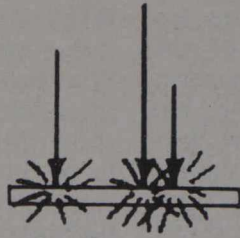
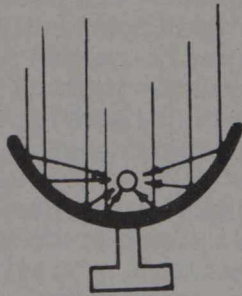
Up to now, first-cost has been the main criteria used by designers. There has not been a great need to evaluate energy consumption consequences of design decisions. This is changing rather quickly. Designers

The Hoffman House, another solar heated building, was built in 1968 by Eric W. Hoffman in Surrey, British Columbia. In addition to house heating, a swimming pool solar heater was added in 1974. The house is located at the 49th degree north latitude. The floor area of the house is 2,700 sq. ft. It uses a flat plate type solar collector 460 sq. ft. in area. It has two vertical cylindrical uninsulated water tanks totalling 800 gallons which are held within an insulated basement room. The house is heated by air that has circulated by gravity convection through the tank room. The system is claimed to provide 50 per cent of the space heating and domestic hot water needs. Auxiliary heaters are electric baseboard units.

John Hix, Architect, and Frank Hooper, Engineer, University of Toronto, are designing a solar heated house in Mississauga, Ontario. A two storey, single-family residence of 2,400 square feet resembling a modified "A" frame building, it will exhibit more than 800 square feet of collector surface and host a 70,000 gallon water storage unit.

Another project to demonstrate the feasibility of solar heating, sponsored by the National Research Council, is Housing for the Quebec Indian Communities. It entails construction of three prototype houses incorporating features such as solar-heating systems, wind-power systems and composting toilets. The three houses feature three different types of solar-heating systems. One is an air-heating system with forced circulation; another an air-heating system with natural circulation; and the last a circulation; and the last a passive "solar" wall.

Prince Edward is another experiment in autonomous living and biologically-balanced rearing of



fish and plants. Its solar space-heating system features water-heating collectors and a semi-seasonal heat storage unit.

Under the Manitoba Legislature Building solar demonstration project, an array of water-heating collectors is to be mounted on the Legislature Building in Winnipeg to create public awareness of the potentiality of solar heating in Canada.

Money has been made available in 1976 to develop a data base for rational designing of solar-heating systems and to stimulate public interest as well as that of the manufacturing industry, through large-scale research, development and demonstration of solar hardware.

In addition to projects receiving Federal assistance, many others are in progress. The Province of Ontario is financing construction of a 30-unit Senior Citizen Home to be heated by solar energy. The solar-system will feature water-heating collectors, solar reflectors, and a seasonal heat storage unit.

There are at least a dozen privately funded solar houses in various stages of completion across

Canada. These utilize conventional solar-heating systems with piped water or forced-circulation air as heat transport medium; passive air systems, and "trickle-on" water systems.

There are, in all about 20 solar-heated buildings in Canada. There are also three to five Canadian companies striving to fabricate collectors on a commercial basis. Government expenditure in 1975 on solar activities amounted to about 700,000.

A number of institutes and universities are actively conducting research in solar energy utilization. The Brace Institute is investigating methods for utilization of solar energy. In Ontario, Waterloo University has embarked on a number of projects related to solar and wind energy application. The University of Western Ontario is conducting research in solar refrigeration and heating and photosynthesis. Among the Federal Government departments and associated agencies involved in investigation of the potential of solar energy are the Department of Energy, Mines and Resources, the Ministry of State for Urban Affairs, the Division of Building Research, and the Department of Transport.

Demonstration solar house, Mississauga—Ontario.



CLOSER TRADE LINKS IN THE FUTURE

Trade links between India and Canada are nothing new, but over the last two years trade in both directions has increased rapidly—both in value and in the variety of goods exchanged. Some \$220 million worth of Canadian goods (Rs. 187 crores) was imported by India during 1975, chiefly in the form of wheat, newsprint and minerals. Indian exports to Canada also rose, to a value of \$46.6 million (Rs. 42 crores), including \$17.8 million in fabrics and outerwear—all very much in favour with the fashion world.

The Indo-Canadian Trade Group, which was established in 1973 to foster sound trade relations between the two countries has watched this increase with pride. Indian exports to Canada in 1976 reached a record level of \$65 million. The group is chaired by S.P. Mandelia of Century Rayon, Mr. N. Venkataraman, Managing Director of Hindustan Ferrodo and V.G. Lotto, Canadian Commercial Counsellor are the vice chairmen.

The first Indo-Canadian trade delegation travelled to Canada in September last year. The formal report of the delegation was released this month.

The Group travelled to Canada with three aims in mind:

- : to promote and develop bilateral trade with Canada in non-traditional items;
- : to initiate and develop joint ventures in India, Canada and other countries;
- : to present to Canadian entrepreneurs and businessmen, through meetings, a profile of selected industries in India.

A tall order for any delegation.

After discussions with major industrial concerns in India, the 8-man group, headed by Mr. Y.A. Fazalbhoy of COMEL and representing the many different facets of Indian industry, flew to Delhi for a final briefing with Canadian High Commission staff in early September.

The trip to Canada lasted 21 days,

though several members of the group, encouraged by business prospects, stayed on for more detailed negotiations. Ottawa, Toronto, Montreal, Halifax, Edmonton and Vancouver were the stop-off points in Canada—an itinerary designed to bring the group into contact with government, financiers, manufacturers and trade associations.

As the group stated in its report, "The meetings in all locations generally started on a formal note with some scepticism and reservations in the minds of both parties." This might have been caused by some doubt in Canadian minds as to the industrial capabilities of India, and on the Indian side, a concern as to whether the close links many Canadian industries have with the United States would forestall possible tie-ups with India. Both concerns were rightly laid to rest.

The delegation found that there is considerable scope for increasing Indian engineering exports to Canada. At the moment, India exports only a small portion (\$ 4½ million) of the total \$ 4½ billion of such goods imported annually by Canada.

A second major area for co-operation between Canadian and Indian industry is in joint ventures: to be established in Canada and also in third countries, especially the Middle East. The economics of collaboration with an Indian partner gives an attractive edge in the fiercely competitive world market. Some of the engineering goods exported to Canada could be in terms of deliveries of sub-assemblies, components and fabricated parts to customers in third countries. Joint ventures of this sort could range from sub-contracting to turn-key projects or could lead to partnerships in consulting, research and development.

Joint ventures to serve the Canadian market are a practical way to combine engineering know-how and equipment with

Canadian knowledge of local consumer demands.

The delegation found that although the United States offers advantages to joint ventures in North America, such as cheaper construction costs, Canada has a more positive attitude towards foreign investment. There are several provincial and federal incentive plans in Canada to encourage new facilities, including those partly or wholly foreign-owned, to settle in certain areas of the country. Foreign investment regulations can be waived if the project is judged to be of significant benefit to Canada. Ports on both sides of the country open up markets in Europe, South America and the Pacific.

Joint ventures in India are another possibility. Labour costs are high in Canada and sharing technology and having India manufacture goods for re-export to Canada and other markets could profit both countries.

All these possibilities—exports to Canada; investment and joint ventures there; collaborations in third countries; and sharing of technology in India—rely on forgetting the barriers of distance between the two countries. By bringing the two parties face to face, the Indo-Canadian Trade Group has gone far to removing those barriers.

The possibility of a return visit by a Canadian delegation was mentioned many times on the trip and at some point in the future such a group may come to India.

But an increase in trade between the two countries does not require a formal delegation. Where there is an economic advantage, trade and commerce will flourish. Individual businessmen travel between the two countries already. Now that the Trade Group delegation has returned and reported on its findings, we can look forward to even closer trade links between the two countries.

The Commonwealth Literature conference was held in New Delhi from January 3 to 8 and was attended by writers and publishers from Commonwealth countries. The Canadian delegation to the conference was led by Mr. Cecil Abrahams, an interview with whom is published here.

The Canadian literary scene

by Vijay N. Shankar



Mr. Cecil Abrahams.



A display of Canadian books held during the Commonwealth literature conference in New Delhi.

Canadian writing has had to come a long way from an involvement in the colonial past, in the responses to Nature and the business of survival. But today Canada has one of the most dynamic literatures." Mr. Cecil Abrahams said this with the full awareness that Canadian writing is still not an internationally popular literature. "Ah, but that is a question of commercialisation, of big budget publishing and bestseller manufacturing," he said. "What is important is that a country should have a literature with its identity. It should be relevant." Mr. Abrahams had the kind of background that produces an interesting perspective. He is a South African nationalist living in exile in Canada where he has been teaching literature since 1963. He also writes fiction and literary criticism. So he has an African identity and a Canadian identity and a literary identity. That is quite a scenario for one man. "Well it gives me a certain intellectual flexibility," he smiled, "and that is important too. It helps you understand what's happening around you."

Tracing the academic background, which is also vital in the development of a literature, Mr. Abrahams said that till about a decade ago, Canadian literature, whether in French or in English, was well nigh ignored at the university level. In 1966-67, for instance, Toronto University offered 109 graduate courses and of them only one was in Canadian literature. Not surprisingly therefore in 1967 he joined a movement of academics led by Prof. Robin Mathews of Carlton University which was styled the National Committee for the Canadianization of Canadian Universities. "This was only a response to the fact that culturally, Canada had undergone a historical squashing. The univer-



Canadian delegates to the conference, seen with the Canadian High Commissioner in India, Mr Maybee (3rd from left sitting).

sities, we felt must foster the national culture," said Mr. Abrahams. More Canadian courses were offered and curricula were amended so as to keep a balance between the Canadian and the purely ethnic other cultures that exist in Canada. "Because in Canada what is accepted is the concept of a mosaic of cultures as against the idea of a melting pot of cultures."

The movement started at the universities had its effect. In his own field, he said, there was more student interest in Canadian literature. More Canadian criticism started appearing. Both factors form the vital backdrop for the writing of contemporary literature.

But that, of course, is not all. The Canadian writer, according to Mr. Abrahams, has still to get into the really living subjects, he has still to respond more directly to the people and the myths of people around him. "For instance," he said, "very little effort has been made to understand the Eskimo. It is not enough to feel guilty about the colonial past. There has to be a contemporary myth."

Early Canadian literature, for instance was more in the nature of a response to the weather, the problems of settlement in a harsh environment and the business of survival. "That was a kind of identity, a literature out of life," Mr. Abrahams said, "and writers like Duncan Campbell Scott and Charles Roberts were the first Canadians to tell the story of Canada as it was. They produced a myth of a harsh nature. Susanne Moody's book 'Roughing it' was about her experience of a rough country. Another writer who played on the same myth was Frederick Philip Grove who came to Canada at the

turn of this century and wrote about the settlers in Manitoba. It was man against Nature, an authentic concern. But it could not go on."

The myth of Nature in Canadian writing was continued in what came to be known as the Prairie Novel which is again about the land and the culture of people tied to the land. Writers like Rudy Weibe, Sinclair Ross, Margaret Lawrence and Sheila Watson wrote about the evolving cultural and religious consciousness of communities living on the prairies and the adjustments that are necessary within small communities. W.O. Mitchell in the book "Who Has Seen The Wind" dealt with the Canadian Indian communities and the prejudices they faced while Ernst Buchler in 'The Mountain And The Valley' made a study of rural communities.

"In a sense, the sociological perspective was there, said Mr. Abrahams, "but it was a kind of localised literature, even esoteric in its appeal."

All this had to change, of course and in Canada too the strongly rural bias to literature shifted to writing about the cities where there was more potent material for the novel. Hugh MacLennan, A.M. Klein, Gabrielle Roy and others started to concentrate on the city and the slums, the rich and the poor.

"This, I think, was the beginning of a transformation in the concerns of writers. It was the beginning of efforts to understand people at individual levels and to write about human problems that are universal."

"Canadian writers today see themselves in the tradition of the great writers and are involved in the existential problems, the conflicts and the deep-rooted despairs that are the

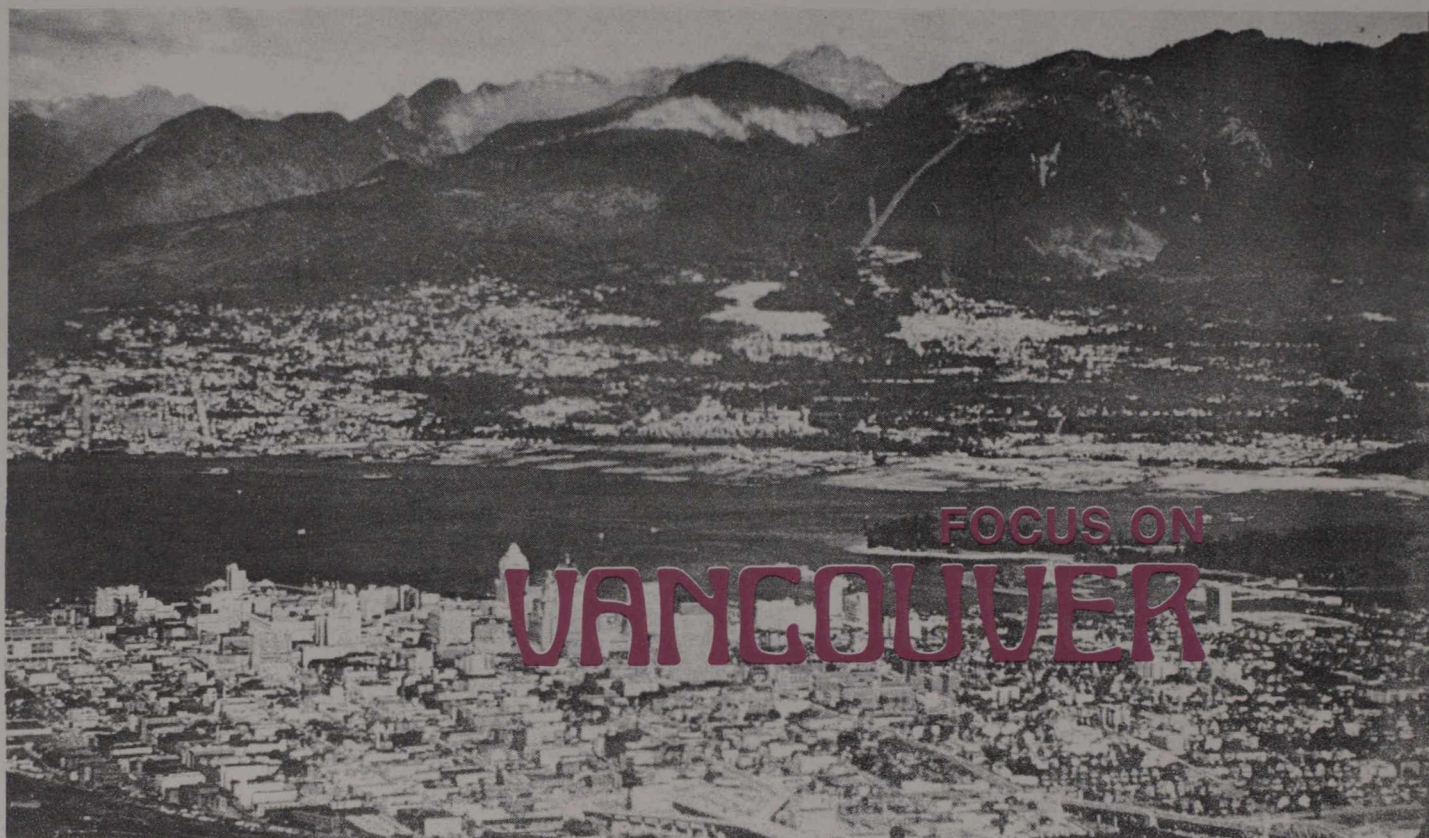
material for any great writing. One of the finest poets, John Newlove, comes to grips with these problems with tremendous honesty."

The forms have changed and are still changing, the material for the writer is new and there is an involvement in living. "But the Canadian writer," said Mr. Abrahams, "is very uncertain about himself—he is apologetic and lacks confidence. Naturally this affects the writing. This is of course a phase, a period when they are coming to grips with themselves. Their lack of confidence has nothing to do with quality of their writing. It is just that we still do not have enough of a response to writing. The shelves in bookstores are full, but you don't see too many Canadian books. Canadian writers have even picketed bookstores demanding that more Canadian books be put on the display shelves. There has been only a partial victory."

In this context Mr. Abrahams recounted some discussions with Indian writers during the Commonwealth Literature Conference and said—"they face the same problems here. Publishing and criticism form an important part of the writer's milieu. Unfortunately, the writer has no control over these aspects, but his work is definitely influenced by these factors."

"What the Canadian writer does have is honesty. He is not following models now and he is trying hard to project his individual perspective. He may not," said Mr. Abrahams with a loaded flourish, "be writing bestsellers, but he is writing honest stuff. The fact that he questions himself is in the ultimate analysis, a very good portent for Canadian writing."

...an ocean beside it, mountain peaks above ...and year round green parks and gardens inside ...



A panoramic view of Vancouver

By Maryanne Taylor

One of Canada's most beautiful cities—Vancouver, British Columbia—has an ocean beside it, mountain peaks above it and year-round green parks and gardens inside it.

Vancouver is the province's largest city (Canada's third largest) and it is located in the extreme southwest corner of British Columbia, 25 miles (40km) from the United States border. Metropolitan Vancouver has a population of 1,082,352 and occupies 798 square miles (2,075km²) of land.

Part of an area known as the "Lower Mainland," Vancouver contains about half of B.C.'s population and most of the province's secondary manufacturing.

As Canada's most westerly province, British Columbia is rich in natural resources and it is to these that the province's main

industries—forestry, mining, fishing and manufacturing—are tied. For example, the fishing industry, a \$200 million a year business, is well known for its annual catch of the prolific Pacific salmon; the land supports flourishing fruit and dairy farming in the southern regions and beef cattle raising in the northern interior where some of Canada's largest ranches can be found.

Also a part of the Lower Mainland is the Port of Vancouver which in terms of tonnage of cargo handled in North America is second only to the Port of New York. Vancouver's port handles more cargo per year than all of the west coast ports in Canada and the United States combined. The majority of the cargo is made up of bulk shipments of semi-processed raw materials such as lumber, pulp, coal, sulphur, potash and wheat.

The Port of Vancouver, one of the world's largest and finest natural harbours with excellent shipping facilities, is a regular port-of-call for deepsea shipping lines. The goal is to handle 80 million tons (73 million metric tons) by 1980, almost double the present volume.

An \$80 million expansion program will make this possible, preparing the Port for the increased growth expected from the development which has begun in the Pacific Rim region.

A new container terminal, Vanterm, has also been constructed on the South Shore of Burrard Inlet within two miles (3km) of downtown Vancouver. The facility comprises a total area of 76 acres (31 hectares) with two 900-foot (274-m) container berths, one 750-foot (229-m) roll-on/roll-off berth and a berthing length of 400 feet (122m) for general

...a downtown that is as sophisticated, varied and cosmopolitan as any ...

...ethnic groups preserve their customs and heritage...Chinatown, Little Italy...

cargo. The terminal is designed to handle third generation container vessels using the most modern concepts in container cranes of the most sophisticated design. The area for container storage exceeds 50 acres (20 hectares) and the facilities include a large container freight station, an equipment maintenance building and an office building.

Tourism has developed into B.C.'s third largest industry with many new facilities developed to enable both residents and visitors to enjoy British Columbia's natural beauty.

One reason why many people are attracted to Vancouver is the gentle and moderate climate. The city is protected on the north and east by mountains and on the west by the Strait of Georgia and Vancouver Island. The resulting temperature range is from an average of 0°C (31°F) in January to an average maximum of 22°C (72°F) in July. The lowest temperature on record is -18°C (0°F); the highest 33°C (92°F). The average range of precipitation is from six inches (15cm) in December to a low of one inch (2.54cm) in July.

Because of the 5,000 miles (8,050km) of sheltered cruising waters

and the warm Japanese current that provides all-year temperate weather, sailing and boating are twelve-month activities. Marinas and launching ramps are located in many areas and Vancouver has several fine yacht clubs. Swimming is a favourite pastime with numerous lifeguard-patrolled beaches, and indoor/outdoor school and public swimming pools.

Another bonus feature of Vancouver is its attractive downtown. Through extensive city planning, Vancouver has acquired a downtown that is as sophisticated, varied and cosmopolitan as any.

In recent years, giant complexes have risen—one, the Pacific Centre, which covers two city blocks, has radically changed the city's skyline. As one of Canada's largest downtown developments, it consists of two office towers, a Four Seasons hotel, large department store and 125 shops and services in a two-level mall. Also downtown, is the Royal Centre with 60 stores and a 700-room Hyatt Regency hotel.

Just as important as the new buildings to the city's image is the restoration of old Vancouver. The late 19th

century Gastown district has been renovated and filled with boutiques, galleries and restaurants. Another renowned street is Robsonstrasse, as it is nicknamed, which features German and other European shops where visitors can inspect intricate imported toys, sip dozens of blends of tea or stop and watch the artistry of pastry makers.

Vancouver is a cosmopolitan city with many ethnic groups represented. While living as part of the community, the different ethnic groups have been able to preserve their customs and heritage. Areas Vancouver has managed to keep intact with much of their original character are Chinatown (the second largest on the continent), Little Italy, and Granville Street, an historic street that has been turned into a mall.

Reflecting the diversity of its people and the advantages of being a major port on the Pacific coast, Vancouver has access to a splendid array of goods imported from the Orient and the western coast of the Americas. This makes it an excellent place to shop, both at the large department stores and the hundreds of

(Continued on page 19)

High-rise buildings over the water and the mountains towering behind.



In down town Vancouver—a friendly place



...its skiing grounds...have earned it the title of "world's most exciting ski village"

FEDERALISM IN CANADA

A federal system is characterized by the distribution of legislative authority between two orders of government, central and regional. It is generally considered appropriate where centrifugal forces (such as ethnicity, difficulties of geography and regional economies) militate against a legislative union, and yet where there are sufficient centripetal forces (such as similarity of political institutions) to foster a viable political union without legislative unity.

CANADIAN FEDERATION

Nova Scotia, New Brunswick and the Union of Canada (Ontario and Quebec), came together to form the Canadian federation in 1867 under the British North America Act. As a reaction against the American Civil War and in order to foster economic expansion, it was decided to create a centralized federal system. The central government was granted the most important legislative powers of the day principally those necessary to develop and regulate the economy. In addition to shared jurisdiction over direct taxes, the central government also controlled indirect taxes, which were by far the most lucrative at the time. The Lieutenant-Governors are named by the Governor General in Council and can "reserve" provincial Bills for the approval of the latter, and the Governor General in Council can disallow duly sanctioned provincial legislation. These powers are rarely used. Provinces are represented proportionately in the House of Commons, though a province may not have fewer MPs than Senators. The Senate provides for equal representation of four "regions" (24 each for the West, Ontario, Quebec and the Maritimes), and 6 for Newfoundland. Nominations to the Senate are made by the Governor General in Council; this, combined with the responsibility of the executive before the House of Commons, has tended to reinforce the role of the Senate as a House of sober second thought rather than as a "States' rights" House. Although the Senate does not generally represent provincial interests, the Cabinet, since 1867, has tended to have a fair representation of regional and linguistic interests. First Minister Conferences also provide a framework for the expression of provincial interests. The Supreme Court of Canada was created by an Act of Parliament under provisions of the BNA Act and judges are named by the Governor in Council.

THE CYCLES OF FEDERAL AND PROVINCIAL POWER

Although the provinces were, at first, rather weak, the Judicial Committee of

the Privy Council in London, which was the court of last resort until 1949, tended to give a very broad interpretation of the provincial control of property and civil rights and a rather narrow interpretation of federal powers for dealing with emergencies, the national interest, and trade and commerce. This established a form of equilibrium between the two orders of government by the 1920s. World War II led to a new concentration of power in Ottawa, but the subsequent demands for social services (particularly education, medical care and welfare) have led to a high degree of provincial activity. To the degree to which a comparison of federal and provincial-municipal expenditures might be used as a crude measure of centralisation or decentralisation, it might be said that the federal government dominated until the end of the first World War, at which time the municipalities and provinces became dominant (although the municipalities spent more than the provinces themselves up to 1934). It was only in 1940 that the federal government became dominant once again—this time overwhelmingly so. Federal dominance declined after the war and, towards 1960, provincial-municipal expenditure once again began to ease past federal expenditure.

RESPONSIBILITIES AND RESOURCES

The federal government may raise money by any mode or system of taxation, while provinces are limited to direct taxation within the province to raise revenue for provincial purposes. It was recognized even before Confederation that provincial revenues would be inadequate for the various provincial responsibilities, and the BNA Act provided for federal subsidies to the provinces. Transfer payments from Ottawa to the provinces have been a permanent feature of Canadian federalism and have increased enormously in recent years. Intergovernmental transfer payments generally seek to overcome, to a degree, the imbalance in fiscal capacity between "have" and "have-not" provinces and to foster the establishment of certain programmes of national interest where portability and universality are desirable. About one fifth of the federal budget is now allocated to intergovernmental transfer payments, of which about 25 per cent is transferred to the provinces, with the exception of economically wealthier British Columbia, Alberta, and Ontario, in the form of unconditional equalization payments. Support for health and social welfare programmes in the provinces accounts for most of the balance.

THE FUTURE OF THE CANADIAN FEDERATION

—PRIME MINISTER TRUDEAU

Canada has two official languages, French and English, arising out of the country's French and British historical roots. French language and culture is concentrated in the Province of Quebec. One of the features of Canada's history has been a process of challenge and accommodation between the two main Canadian cultural communities within a federal system. International attention has been given recently to the

election to office in Quebec of a provincial government favouring a sovereign Quebec and a radical transformation of its relations with the rest of Canada. In a speech before the United States Congress on February 22, 1977, on the occasion of an official visit to Washington, the Canadian Prime Minister, Mr. Pierre Elliott Trudeau, included remarks to explain this Canadian problem. He said:

"Canadians long ago determined to govern themselves by a parliamentary system which favours the flowering of basic aspirations—for freedom, for justice, for individual dignity. The rule of law, sovereignty of parliament, a broad sharing of power with the provinces, and official support of the pluralistic nature of Canadian society have combined to create in Canada a community where freedom thrives to an extent not exceeded anywhere else, a community where equality of opportunity between people and between regions is a constant goal.

"The success of our efforts in the first century following confederation was promising, but by no means complete. We created a society of individual liberty and of respect for human rights. We produced an economic standard of living which approaches your own. We have not, however, created the conditions in which French-speaking Canadians have felt they were fully equal or could fully develop the richness of the culture they had inherited. And therein is the source of our central problem today. That is why a minority of the people of Quebec feel they should leave Canada and strike out in a country of their own. The newly elected government of that province asserts a policy that reflects that minority view despite the fact that during the election campaign it sought a mandate for good government, and not a mandate for separation from Canada.

"The accommodation of two vigorous language groups has been, in varying fashion, the policy of every Canadian government since Confederation. The reason is clear. Within Quebec, over 80 per cent of the population speak French as their first or only language. In Canada as a whole, nearly one-fifth of the people speak no language but French. Thus from generation to generation there has been handed down the belief that a country could be built in freedom and equality with two languages and with a multitude of cultures.

"I am confident it can be done. I say to you with all the certainty I can command that Canada's unity will not be fractured. Accommodations will be made; revisions will take place. We shall succeed.

"There will have to be changes in some of our attitudes; there will have to be a greater comprehension of one another across the barrier of language difference. Both English-speaking and French-speaking Canadians will have to become more aware of the richness that diversity brings and less irritated by the problems it presents. We may have to revise some aspects of our constitution so that the Canadian feder-

ation can be seen by six and a half million French-speaking Canadians to be the strongest bulwark against submersion by 220 million English-speaking North Americans.

"These very figures illustrate dramatically the sense of insecurity of French Canada. But separation would not alter the arithmetic; it would merely increase the exposure.

"Nor would the separation of Quebec contribute in any fashion to the confidence of the many cultural minorities of diverse origin who dwell throughout Canada. These communities have been encouraged for decades to retain their own identities and to preserve their own cultures. They have done so and flourished, nowhere more spectacularly than in the prairie provinces of Alberta, Saskatchewan and Manitoba. The sudden departure of Quebec would signify the tragic failure of our pluralist dream, the fracturing of our cultural mosaic, and would likely remove much of the determination of Canadians to protect their cultural minorities.

"Problems of this magnitude cannot be wished away. They can be solved, however, by the institutions we have created for our own governance. Those institutions belong to all Canadians, to me as a Quebecker as much as to my fellow citizens from the other provinces. And because these institutions are democratically structured, because their members are freely elected, they are capable of reflecting changes and of responding to the popular will.

"I am confident that we in Canada are well along in the course of devising a society as free of prejudice and fear, as full of understanding and generosity, as respectful of individuality and beauty, as receptive to change and innovation, as exists anywhere. Our nation is the encounter of two of the most important cultures of western civilization, to which countless other strains are being added.

"Most Canadians understand that the rupture of their country would be an aberrant departure from the norms they themselves have set, a crime against humanism; for I am immodest enough to suggest that a failure of this always-varied, often-illustrious Canadian social experiment would create shock waves of disbelief among those all over the world who are committed to the proposition that among man's noblest endeavours are those communities in which persons of diverse origins live, love, work and find mutual benefit."

CANADIAN DELEGATES AT SIXTH INTERNATIONAL FILM
FESTIVAL OF INDIA

working for a new kind of cinema

**MICHAEL SPENCER, Executive Director,
Canadian Film Development Corporation.**



Mr. Michael Spencer (centre) at a press conference in New Delhi.

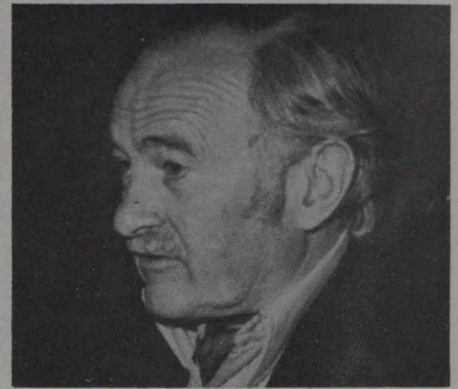
Indian films and Indian Film Weeks are quite a hit in Canada: which, coming as it does from a man who knows more about the Canadian film scene than most Canadians, is something. In fact, India and Canada have quite a few things in common as far as Michael Spencer is concerned: the Canadian Film Development Corporation, of which he is Executive Director, for one. (His Indian wife, Maqbool, for another.)

In more ways than one, the Canadian Film Development Corporation is akin to India's own Film Finance Corporation and as its head Mr. Spencer is something of a film maker's film maker.

Still from the Canadian entry 'THE FAR SHORE'.



The idea behind the corporation was to help genuine film makers who wanted to project their world view on the broader canvas of feature film.



Mr. Spencer, who was in India this winter to attend the Sixth International Film Festival in New Delhi, would laugh it off with a gentle wave of his hand. But the facts speak for themselves. The Canadian Film Development Corporation has played a premier role in the making of over 150 feature movies in under a decade—it came into being only in 1968—and many of these films have done really well. Why, before the Corporation went into business, Canada didn't even have a feature film industry worth the name—a fact which no doubt would come as a surprise to most film buffs because Canada has been

known to be a pioneer and a trend-setter in the art of short and documentary film-making for as long as one can remember.

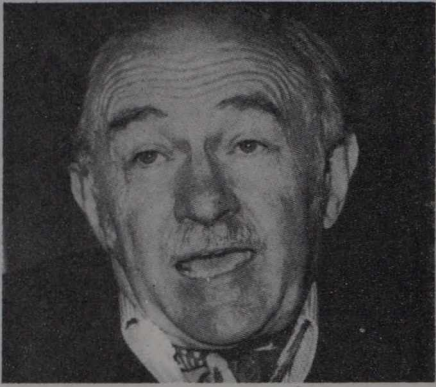
The idea behind the Corporation, Mr. Spencer explains, was to help genuine film makers who wanted to project their world view on the broader canvas of feature film. There were oodles of film makers who had made it to the big league in short films with the backing of the National Film Board of Canada. These films almost always were conceived strictly as "art films" and not "commercial films" ("the Board," as its representative to the festival, the charming Ms. Denise

Nadeau, pointed out, "has its own mandate. Films made by its are not meant for commercial viability the idea solely being to encourage artistic shorts.") and no wonder the movie giants, Paramount and Rank Organization, with their elaborate distribution network and a chain of 450 theaters owned all over Canada were winners from start to finish.

Starting almost from scratch, the Canadian Film Development Corporation had, therefore, to build up a solid core of commercial film makers and also keep up with the competition all at once. It needed some doing. "At present

Still from *THE FAR SHORE*





In nursing a new kind of cinema—a cinema off the beaten track, the Canadian experience has relevance for India.

we make about 15 feature films in a year—ten in English and five in French,” beams Mr. Spencer. A measure of the Corporation’s success is also the fact that Rank and Paramount have now agreed to screen Canadian offerings for at least four weeks per theatre per year.

Indian film observers at the festival, in fact, were quick to point out the relevance that the Canadian experience has for India. For while the role of the State in nursing a new kind of cinema—a cinema off the beaten track—has come to be acknowledged and accepted in India over the years thanks to the Film Finance Corporation, the idea of a network of theatres committed to exhibition

of films sponsored by it has yet to become a reality. The Canadian experience proves that it can be done.

“When we take up a film, we undertake to foot half the cost by way of easy loans,” says Mr. Spencer, and this in most cases may mean a loan assistance of up to 200,000 dollars. The Canadian entry in the information section of the New Delhi festival, “The Far Shore”, was one such production made with a 200,000-dollar assistance from the Corporation; its total cost was 500,000 dollars.

Accompanying Mr. Spencer at the festival were the comely star of “The Far Shore”, Ms. Celine Lomez, and the director, Ms. Joyce Wieland. They worked

more than seven years on “The Far Shore”, a simple, sensitive love story of a landscape painter. The greatest thing about working with a woman director, said Ms. Lomez, 23 and already a veteran of eight years in showbiz, was “the touch of feminine sensibility” that added a new dimension to the aesthetic of film-making.

Ms. Lomez should know; as Ms. Wieland put it “Ms. Lomez presents the totality of a woman whether in the role of a cabaret dancer or a heroine.”

This touch of aesthetic “totality” is, for all you know, another thing common between Canada and India.

Still from *THE FAR SHORE*



PRIZE FOR IDIKKI DAM CONSTRUCTION

The Montreal firm of Surveyer, Nenninger and Chenevert (SNC Incorporated) won the 1976 prize for excellence for its civil engineering work in the construction of the Idikki dam in India.

The prize was awarded by the magazine Canadian Consulting

Engineer and the Association of Consulting Engineers of Canada.

The dam, high in the ranges of Kerala State, is Asia's largest high arch dam, and is part of a three-dam hydroelectric and irrigation project.

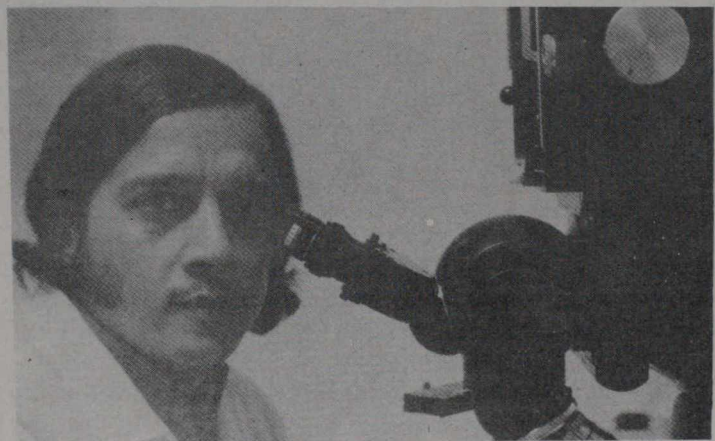
The powerhouse produces 780 megawatts of power, boosting the state's power supply by 150 per cent. Canada contributed to the project by making available more than \$20 million in grants and loans for the construction of the Idikki dam.

Mothers-to-be beware of the cat bug

To avoid the possibility of contracting a common infection that could cause mental and physical retardation to newborn children, pregnant women should keep away from cats and not eat rare meat, two University of Victoria scientists warn.

The infection, called toxoplasmosis, is caused by a microbe commonly carried by cats and found in rare meat, which has been ignored medically in North America mainly because of a lack of information, according to Dr. K.A. Karim, an immunologist studying the disease in association with Dr. Trevor Trust, chairman of the Bacteriology and Biochemistry Department.

Karim says if a fetus is infected it will probably show signs of either brain damage, psycho-motor retardation, epilepsy or eye and ear problems a few weeks or months after birth. Contrary to medical practice now, "pregnant women should be tested for toxoplasmosis as a matter of routine in their general prenatal checkups".



Baritone wins French award

Quebec baritone Bruno Laplante recently received an award from the French record academy for a collection of three records featuring French music.

The award, Le Grand Prix du Disque 1977, melody section, was initiated in 1931 by Maurice Ravel. President Valery Giscard d'Estaing is honorary president of the

academy.

Laplante, accompanied by pianist Louis-Philippe Pelletier, sings works by Reynaldo Hann, Jules Massenet and Charles Gounod on the records.

The Canadian baritone, who was born in St. Hilaire, Quebec, accepted the award at the City Hall in Paris in a ceremony at-

tended by representatives of the French Department of Cultural Affairs.

He plans to record about 20 albums of French classical music.

A reception for the 38-year-old musician at the residence of Gerard Pelletier, Canadian Ambassador to France, followed the ceremony.



Return of the peregrine falcon

One of the swiftest birds in the world, the peregrine falcon, may survive extinction in North America if an imaginative experiment works, Acting Environment Minister Romeo LeBlanc announced recently.

The Canadian Wildlife Service has had success in breeding in captivity *peregrinus anatum*, the most endangered of the three subspecies found in North America. Most of the 41 young birds produced this year have been set free in various urban, rural, and remote places in Canada where the species formerly existed.

"These releases are primarily experimental, to develop techniques for re-introduction," said Richard Fyfe, the CWS biologist who has led this effort to save the peregrines in Canada. "The young birds will run heavy risks as they learn to fly and hunt on their own."

The Canadian Wildlife Service plans to continue releasing captive-raised young peregrines into the wild in the hope that some will survive and begin to breed.

LOCOMOTIVE SURFS ON MAGNETIC WAVE AT 300 MILES AN HOUR

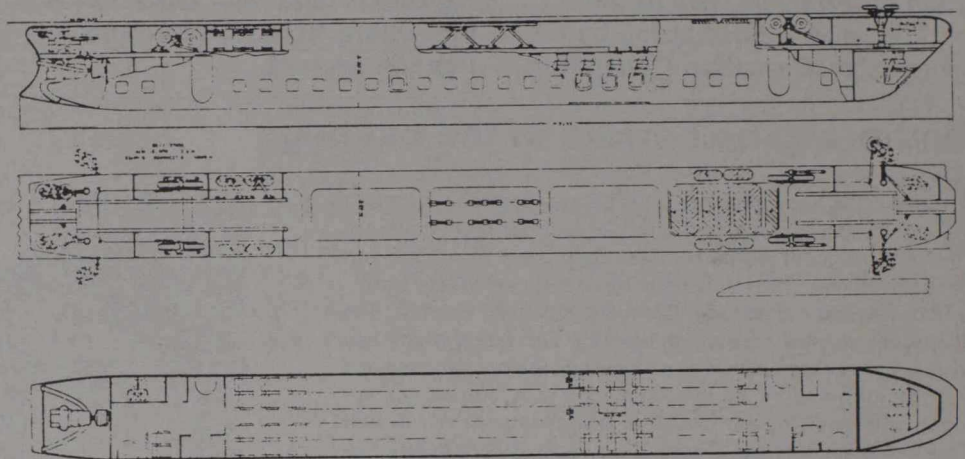
A proposal by three Canadian universities for a new mode of high-speed transportation is raising hopes that getting from Toronto to Montreal within the lunch hour may become a reality.

The Canadian Maglev Project, a development program shared by Montreal's McGill University, Queen's University, Kingston, and the University of Toronto, is rapidly gaining international recognition as one of the most promising proposals yet for a ground transportation vehicle using magnetic fields to both support and propel it.

The downtown-to-downtown trip should take no longer than one-hour-and-a-half, compared to three-and-a-half hours by air and four-and-a-half hour by Turbo train.

The implementation of such a system, which would involve not only construction of a vehicle, but also of miles of special guideway, is still many years away, and would have to be preceded by an extensive engineering design and testing program. But, according to Gordon Slemon, professor of electrical engineering, who heads the U of T group of the Maglev team, nothing stands in the way of proceeding but the decision to commit the necessary resources and get the necessary work done.

"What we are saying," Slemon declares, "is that as far as we can see, all the fundamental problems have been solved, and



that we can demonstrate the technical feasibility of it beyond any reasonable degree of doubt. Moreover, our preliminary studies show the system would be economically justifiable. Looks like a plane

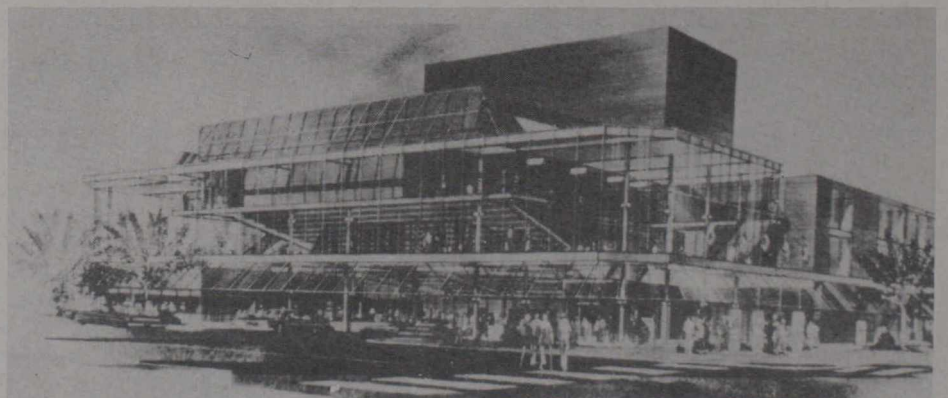
The kind of vehicle envisaged would resemble a Boeing 707, about 35 metres long, 3.2 metres wide, seating 100 passengers four abreast. It would speed along an elevated, flat-topped concrete guideway at 300 miles an hour.

Canada looks towards new coal age

Canada is once again looking to coal to help solve its energy needs. With oil becoming scarcer and dearer, coal is looking better than it has for many years. And Canada has coal in abundance. Geologists estimate there are about 110-billion metric tons of coal lying under Canada's surface, of which about 50 billion tons are recoverable using current technology. The greatest concentration of coal is in Alberta, which has about 22 billion tons of accessible coal. Another 18 billion tons are in British Columbia with the rest in Saskatchewan and Nova Scotia.

An official of the federal Department of Energy, Mines and Resources, Phillip Read, says it should be Canada's policy to substitute coal for oil as much as possible in the thermal generation of electricity and also as a fuel.

Edmonton's new Citadel—a theatre of glass



The Citadel Theatre, a three-theatre complex enclosed in glass in Edmonton, Alberta, opened with a production of Shakespeare's *Romeo and Juliet* directed by resident artistic director John Neville. The 90,000-square-foot complex, final

cost estimated at \$6.3-million, was financed partly by the Federal Government, the government of Alberta and the municipality of Edmonton, with \$2.8 million from private subscriptions.

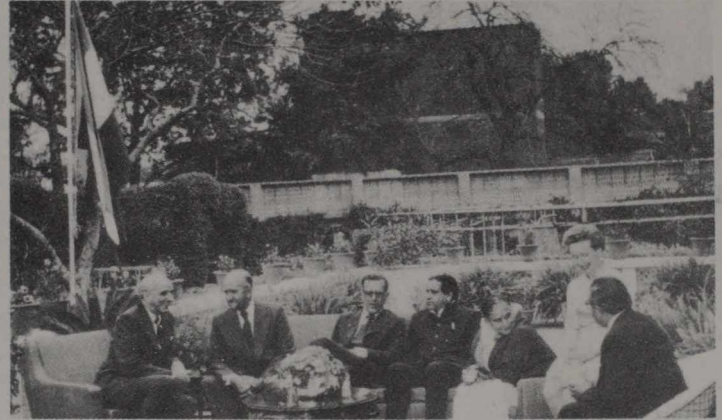
THE NATIONAL FLAG DAY RECEPTION.

On February 26, 1977, the Canadian High Commission hosted the National Flag Day reception in New Delhi. Each year an appropriate day in February is chosen to commemorate the day in February 1965 when Canada's present National flag was first offi-

cially hoisted. Representing the Government of India on this occasion was the former Minister Without Portfolio, Mr. P.C. Sethi. Representing the Government of Canada was the Canadian High Commissioner, Mr. J.R. Maybee.



Mr. Maybee and Mr. P.C. Sethi (Centre).



A view of the reception.



The Canadian High Commissioner and Mrs. Maybee greeting Mr. H.S. Vahali, Chief of Protocol, Ministry of External Affairs.



Mr. and Mrs. Maybee being presented an oil painting by Mr. and Mrs. Y.S. Bhatnagar of the 'Hindustan' Newspaper.

FOCUS ON VANCOUVER

continued from page 11

small boutiques, many of which feature goods from individual countries.

To further excite visitors and residents alike, Vancouver's 800 plus restaurants help keep everyone in a state of bliss. The city has several fine seafood restaurants which are considered superb and are repeatedly on recommended restaurant lists. One hundred or so Chinese restaurants serve the different cuisines of China. The Japanese, who played a significant role in Vancouver's development, operate several restaurants acclaimed even by tourists from Japan. Greek, Italian and French, Spanish, Yugoslavian, Vietnamese, East Indian and Canadian Indian dishes

are also prepared for diners.

Skiing grounds located within 20 minutes of the downtown area have earned Vancouver the title of "world's most exciting ski village." Popular ski runs from November to March are Grouse Mountain and Mount Seymour. Seventy miles (113km) north of the city is Whistler Mountain, home to World Cup skiing.

Camping, fishing and hunting areas are also located within easy driving distance of Vancouver.

Vancouver is also noted for its many fine parks. World famous Stanley Park which is located only five minutes from the centre of the city has 1,000 acres (405 hectares) of trees,

lakes, a zoo and the splendid Vancouver Public Aquarium.

For a night of entertainment, there are many music and drama festivals to attend as well as performances by government supported school and community drama groups. Symphony concerts and numerous choral, instrumental and dance groups provide many additional hours of pleasurable entertainment.

Entertainment, sightseeing, sports activities and shopping, as well as green parks and gardens, mountain peaks and an ocean, all combine to make Vancouver one of Canada's most interesting cities.

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