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Social implications of the development of the James Bay Power giant

Under contract to the Quebec provincial government, a team of anthropologists composed of Dr. Richard F. Salisbury, Fernand G. Filion and Donald Stewart from McGill University, Montreal, has produced a report on the socio-economic implications of a \$6-billion hydro-electric project which involves the harnessing of five large rivers flowing into the James Bay area of Northern Quebec. The Cree Indians who inhabit the area are greatly concerned about the effects of this massive development on their lives. The report takes an objective look at the future of these people over the next ten years to establish whether the hydro-electric project will be environmentally and sociologically detrimental, or whether, on the contrary, it might entail advantages for the Cree.

At full capacity, the report observes, the project could produce three times the power of Churchill Falls in Labrador, now the biggest hydro-electric installation in North America. It involves the construction of four huge hydro dams, which will result in the flooding of 3,000 square miles of lowlands. The area may then be opened up to mining and pulp-and-paper development.

Since the approval of a bill in May 1971 by the Quebec National Assembly establishing the James Bay Development Corporation, major opposition has arisen from four groups: the Cree Indians of the area, their supporters (white and Indian) in other areas, environmental specialists and those who feel the proposed development and the creation of jobs are illusions, and have been proposed only for political purposes. The Cree, who are adamantly opposed to the development, feel that the area belongs to them; they were not consulted before the decision was made, and they consider that the project will destroy their livelihood

and way of life, which is centred around the hunting and wildlife of the region.

The report brings together what is known about the social life of Indians and whites in the James Bay region of Quebec and analyzes the probable conditions there in 1980 if life continues without a hydro-electric development. It also considers the plan of the James Bay Development Corporation to establish what social and economic changes would occur over the next eight years as a result of the project.

Background of region

The Cree population of the James Bay Region was 5,772 at the end of 1970. In 1945 the population had begun to increase rapidly and it is the adults born at that time who now require jobs. An increase in high-school students is also expected over the next few years and this will bring a need for improved educational facilities. Although at present few adults speak English, in ten years time most adults will be able to speak and read English and will be able to take jobs where English is needed. By 1980, the total Cree population will have grown to 7,352 and, whereas in 1971 there were only 1,250 men of working age, by 1980 there will be 1,675. At the peak of the hydro-electric project in 1977, 11,950 workers will be required, most of whom will be white but some of whom could be Indian.

Hunting — a way of life

The James Bay region is one of the last areas in North America where native people have been able successfully to continue a hunting way of life without the young Indians being attracted away to the big cities to work. Some 80 per cent of the adult male population hunt for cash or food. Each area has different food resources — moose, beaver, fish, wildfowl, small game, seals, caribou — and the proportion of the total food supply coming

from hunting and fishing varies from 45 to 60 per cent in the different bands. To buy equivalent amounts of meat would cost each hunting family about \$5,110 a year. The total income produced from the bush annually is therefore estimated to be about \$3.86 million. However, the available hunting resources cannot support many more people than they do now. Large increases in the number of young adults are anticipated over the next ten years, which will necessitate either a mass exodus or the creation of new jobs in the North. The hydro-electric project could help to solve this crisis, but only if it is adapted to Indian needs and if the Indians themselves participate in the planning.

Whether the James Bay development takes place or not, the most optimistic estimate researchers can give for the number of men who could continue to hunt profitably is about 700. The territories which could be used by more hunters are distant from the main settlements and are therefore under-exploited, whereas those near to settlements are being over-hunted, are producing less and will not be able to support full-time hunters in the future. Unless positive steps are taken to encourage trapping in other areas by reopening the more distant posts and providing services like nursing stations away from the larger settlements so that people will build there, the number of hunters will decrease despite the rapidly increasing young male population.

Without the James Bay project it seems unlikely that new jobs will be created. With the present depression in the paper industry it is improbable that new plants will be built for the forestry industry. The same depression exists in the base metal mining industry. Tourism and service industries (teaching and government posts) are the most likely to provide jobs, but these create problems in themselves. The loss of food when tourists shoot moose or geese or catch fish may be worth more than the money Indians can earn as guides. Without some form of industry in the North, the future of the young Cree now leaving school and getting married looks bleak.

Effects of development

The predictable effects of the James Bay development are numerous. The

most evident one is on hunting. Any territory where more than 5 per cent of the land is flooded would be destroyed for beaver hunting, as the streambeds would be flooded. There will also be some diminution of the fish supply. It is thought that approximately one third of all the food consumed by the Fort George and Old Factory Indians comes from migratory fish. Dam construction can be carried out in such a way that fish runs are minimally reduced, but plans have to be implemented *before* construction begins and not after.



Typical James Bay Indian family.

The most favourable effect of the proposed development program would be the creation of new jobs: 2,000 would become immediately available, rising to 11,950 in 1977 at the peak of the project. Until 1982, the project could clearly employ every local person who wished to work on it but after this date only 400 permanent jobs would remain. Many of these would require high levels of skill, and the Indians would have to begin training programs now if they were to obtain the necessary skills by that time.

Importance of education

Education is a crucial factor. Expansion of schools will be necessary along with technical education and on-the-job training to enable Indians to take professional and "white-collar" positions. If the project continues, crash programs must be available to improve the skills of adults. The Development Corporation would

have to provide technical courses for people working within it.

Growth of towns is already a problem in the James Bay area. If the James Bay project were not to take place there would be further increases in the large administrative centres of Fort George and Mistassini and decreases in smaller settlements like Eastmain and Rupert's House. The hydro-electric construction will have a huge impact on numbers of towns and density of population within them, although the lasting effects will be small. The McGill study emphasizes that the many temporary settlements that will have to be established must be constructed with minimum disruption to the permanent Indian settlements and that the project's administrative headquarters should be built well away from the Fort George Reserve.

The McGill report indicates that the development project could cause serious ecological and sociological damage to the Indian population of the James Bay region, but suggests ways in which this could be minimized, so that if the recommendations were implemented, the project could be to the Indians' advantage. This positive alternative however, rests on two very important and as yet uncertain factors: (1) will the Corporation accept the recommendations? And (2) have the Indians reacted favourably to the report? The Development Corporation is already implementing about 70 per cent of the recommendations stemming directly from the report. They are entirely in favour of improving educational facilities, running training programs, establishing local economic development corporations for each band so that advisory services can be provided at the local level, and so on.

Communication gap

As far as the Indians are concerned, there is a serious problem of communication. Copies of the report have been distributed to the natives of the James Bay region through the Indians of Quebec Association. They have expressed great interest in it generally — particularly the sections on the effects on the hunting economy. As a group of people who have received little education and have never lived in large cities it is difficult to impress upon

Another Canada-U.S.S.R. hockey series?

It is possible that Canada and the Soviet Union will play another hockey series next year, according to Doug Fisher, president of the board of Hockey Canada. "There is an excellent chance that the best of Canadian players will comprise a national team and Hockey Canada is aiming at a world hockey cup series on an annual basis," he stated.

Last autumn, Team Canada, which was made up of professional players of the National Hockey League, beat the Soviet Union team, four games to three with one tie, in a series of eight games — four in Canada and four in the U.S.S.R. The Canadians also played two games against a Swedish team in Stockholm, before the Moscow series, winning one and tying one and, in Prague, after the series, they tied a Czechoslovakian team.

Hockey Canada announced that last autumn's games netted a little over \$900,000, of which \$500,000 will be used to develop young hockey players through Hockey Canada and the Canadian Amateur Hockey Association. The remaining \$400,000 will be put into the National Hockey League Players' Association pension fund.

The sale of television rights was the chief source of revenue from the games, the largest expenditures being travel, accommodation, equipment and salaries.

Commons salute Mr. St. Laurent

Members of the House of Commons for the first time extended birthday congratulations to a living former Prime Minister of Canada, Louis St. Laurent, who was 91 years old on February 1.

The suggestion for the greetings was made by the man who replaced Mr. St. Laurent as Prime Minister, John G. Diefenbaker, who said "we often wait until great men who have devoted themselves to their country pass on before acknowledging their contributions", adding that posthumous tributes did not have the "same meaning" as those paid when a man was still alive.

Prime Minister Trudeau endorsed Mr. Diefenbaker's statement that the House send "good wishes, felicitations and congratulations, coupled with the hope he will have many more years", as did another veteran Parliamentarian Stanley Knowles, who was elected at the same time as Mr. St. Laurent in 1942, and Gerard Laprise, who worked "under him".

Trade with Venezuela

Canada and Venezuela have renewed their commercial *modus vivendi* for another year, Secretary of State for External Affairs Mitchell Sharp announced recently.

The agreement signed on January 22, which was first brought into force in 1950 and has been renewed annually since that time, provides for the regulation of trade between Canada and Venezuela. It assures Canada most-favoured-nation treatment in trade with Venezuela and has contributed to the significant expansion of Canadian trade with that country since its entry into force.

Increased federal support for day care

The Federal Government may spend \$8 million on day-care services this year, according to Health and Welfare Minister Marc Lalonde.

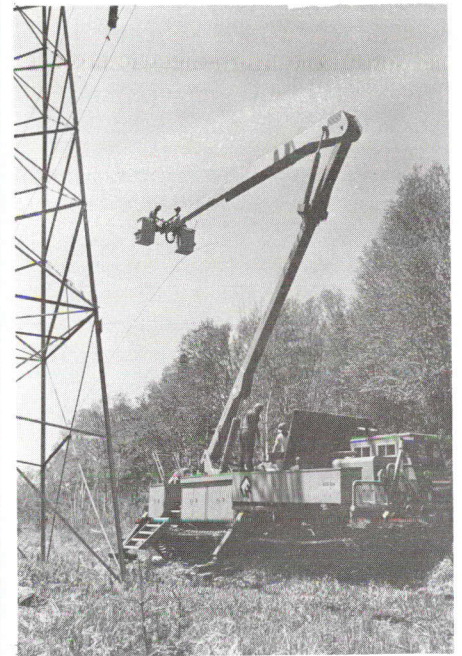
The additional expenditures are expected to result from amendments to the regulations of the Canada Assistance Plan that permit the Federal Government to share with the provinces the day-care costs of rent, equipment, supplies, food, and facility depreciation, as well as certain other expenditures. These are in addition to the salaries and other items previously shared. In 1971, the Health and Welfare Department spent approximately \$4 million on day-care.

A survey taken in 1971, conducted by the National Day Care Information Centre, obtained information about day-care services in Canada and their degree of need.

The survey indicated an increasing need for day care, the greatest need being for children younger than three and for school-age children.

A vehicle for all seasons

Ontario Hydro has a vehicle that will go virtually anywhere, any time, in any kind of weather. *Foremost*, a 29-ton, double-track vehicle that looks something like a cross between a *Sherman* tank and a crane, lifts linemen as high as 75 feet in the air in insulated buckets where they can work on live 500,000-volt lines.



Ontario Hydro photo

Twenty-nine-ton Foremost can lift linemen to a height of 75 feet.

It reduces muscle work and fatigue by eliminating tower-climbing, enabling senior linemen to work aloft with younger crew members.

With a length of 41 feet and a speed of 12 miles an hour under good conditions, *Foremost* is particularly suited for use in muskeg or snow.

With nearly 500 off-highway vehicles of all shapes and sizes, the Hydro fleet is worth about \$2,800,000, but it's an investment that has paid for itself many times over in terms of hours saved in the construction and maintenance of vital power facilities.

Tree transplanter

One of the most recent additions is the *Vermeer* tree spade, a giant hydraulic device capable of digging up and transplanting trees that are 15 to 25 feet high.

Mounted on a powerful tracked ve-

hicle equipped with a front-end blade, the machine removes a tree from its natural setting by forcing four hydraulically-powered triangular spades into the ground round the tree. The spades cut a cone of earth containing the root ball, thus minimizing damage to the root system.

The tree is sprayed with an anti-desiccant, a plastic film that prevents dehydration and which breaks down in sunlight, and is then transported to a pre-dug cone-shaped hole. It fits perfectly because the hole is dug either by the same spade that uproots the tree or by a special auger.

Ottawa world health reference centre

The World Health Organization has designated the Human Cytogenetics Laboratory of the Department of National Health and Welfare as an international reference centre for chromosome-aberration comparison and standardization of methods.

Cytogenetics is concerned with the cellular constituents, namely the chromosomes and genes involved in certain disease processes.

In making the announcement recently, National Health and Welfare Minister Marc Lalonde said that his Department was expected by the World Health Organization to co-ordinate and provide a reference centre for the Americas and westward to countries of the Pacific rim, including Australasia.

Two other international reference centres, in Edinburgh and Moscow, were simultaneously nominated by WHO to do similar work.

The functions of the Ottawa centre will be to improve and unify chromosome-aberration scoring methodology; to organize population-screening projects; to collect and disseminate information in these areas; and to train cytologists.

The WHO expects that the reference centres in Ottawa, Edinburgh and Moscow will concern themselves with population-screening for environmental effects and mutations (genetic changes produced by physical or chemical agents). The international body is concerned specially with the relation between mutating agents and all undesirable long-term affections caused by disease such as cancer.

Stratford's mobile meccano set

Stratford's acting company must feel very much at home on the set devised for the 1973 spring tour in Europe.

Although the familiar "thrust" stage of the Festival Theatre is not travelling with them they have the next best thing — a set that comprises all the elements of the open stage and can, at the same time, be adapted to the proscenium arch.

Described by technical director Robert Scales as the most sophisticated set ever built for a Stratford tour, the structure is made of steel — all "platforms and space", as he describes it. A balcony (ten feet above floor level), stairways and side pillars help create the open stage effect and, incidentally, provide the flexibility of seven acting levels for the players. One major change from the Festival Theatre is a raked, or angled, stage. The distinctive central pillar under the balcony is also missing, both necessary alterations in adapting to a proscenium-arch situation.

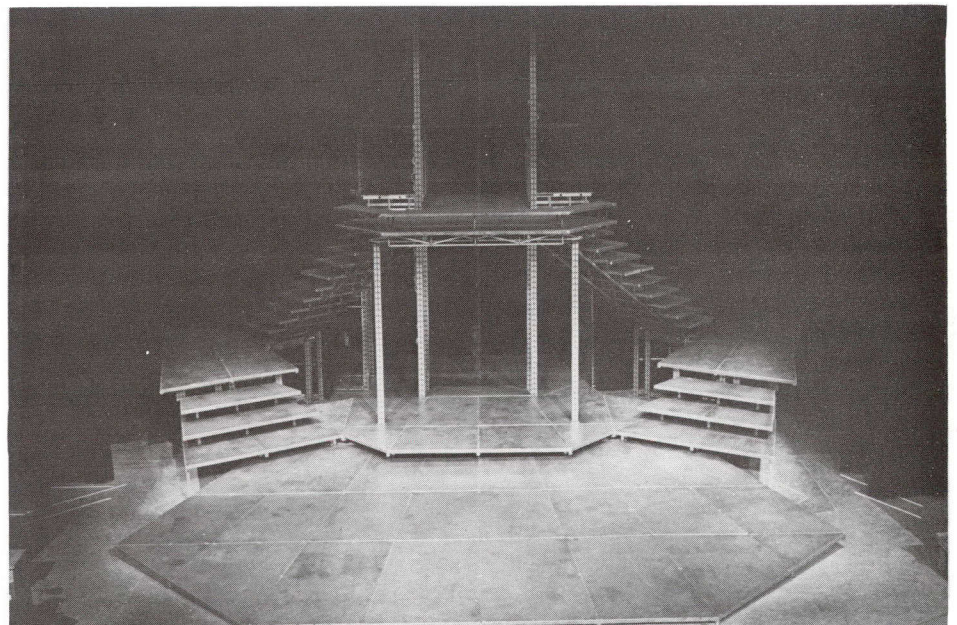
Dagwood sandwich

The original design, conceived by John Jensen (resident set designer of the Guthrie Theatre in Minneapolis), called for a structure of unrelieved steel but it was felt that the noise of actors moving around on the metal

floor might prove more than a little distracting for audiences. The problem was solved with a four-layered floor, built up something in the manner of the "Dagwood" sandwich: an underlying steel frame, topped by a wood covering and felt spacer and covered with a veneer of perforated metal. Side panels, hangings, etc. are also of perforated metal, creating a chain mail effect, and are designed to be completely collapsible. In fact, the entire set is collapsible, no small advantage considering that it will have to be assembled and dismantled eight times in eight weeks.

In all, there are 200 pieces to the structure, but they can almost all be reduced to flat dimensions, the longest of which is 20 feet. The only piece that doesn't collapse is the stairway. A unique feature — and one that brings a smile of relief to the technical director's face — is the lack of nuts and bolts. "It's something like a giant Meccano set," he explains, "the whole thing can be put together with a hammer."

Stratford's European tour began in Copenhagen on January 24 and includes Utrecht (January 30-31); The Hague (February 3); Warsaw (February 7-10); Cracow (February 13-14); Moscow (February 20-25); and Lenin-grad (March 1-5), where the tour ends. The Company is performing two works by Shakespeare — *King Lear* and *The Taming of the Shrew*.



The "meccano set" stage, on tour with the Stratford acting company, can be assembled with a hammer.

Bright prospects for Canadian economy says Bank of Montreal

In its latest *Business Review*, the Bank of Montreal looks at last year's "erratic" business conditions and forecasts that the "spectacular" gains of the final quarter that restored "a strong forward momentum" to the Canadian economy will carry over into 1973 and could lead to "one of the most buoyant years of the past decade".

In setting out its predictions for 1973, the Bank makes the assumption that, while money supply is unlikely to grow at the 1972 rate, there should be no credit "crunch". But with interest rates expected to rise abroad, "this monetary stance will probably result in some upward pressure on interest rates during the year".

As to fiscal policy, the Bank believes that, in addition to the higher spending programs already announced, some tax relief is in store for Canadians, both at the personal and corporate levels.

On this basis, the Bank estimates that consumer spending will increase by 9.8 per cent. The average employment gain in 1972 was 3.1 per cent and, assuming that this rate will be maintained in 1973 and that there will be a 6-7 per cent rise in average wages, total labour income will increase by about 10 per cent. Sharply higher farm incomes, higher dividend payouts, and higher unemployment insurance benefits also seem to assure no shortage in spending power.

The continuing unemployment problem will almost inevitably mean a

somewhat faster rate of growth in Federal Government spending; in recent weeks several large new employment-creating programs have been announced. The Bank expects government spending to increase by 12.8 per cent.

Business intentions

In capital spending, a preliminary survey of intentions of major businesses taken late last autumn indicated a 10 per cent increase in 1973. With confidence rising and production moving towards capacity levels, expenditures on new plant can be expected to rise more rapidly this year than in 1972 and a 10 per cent increase would appear to be realistic.

This projected increase in business investment in 1973 however, could well divert construction activity away from housing, says the Bank. While there is now no indication that vacancy rates are unduly high, despite two record-breaking years of construction activity, this could change in view of the large number of completions scheduled for this year. In these circumstances, the Bank expects housing starts in 1973 to be slightly lower than last year's record high number.

The desire of business to keep down costs will no doubt continue to restrain the rate of inventory accumulation, but with rising sales-prospects a moderate increase in the area of \$500 million seems likely.

International trade

In the export field all signs point to a good year. The United States economy is booming and business activity is strengthening in the economies of

most of Canada's other principal trading partners. Prospects for grain and oil exports seem particularly good.

On the other hand, the Canadian economy should be drawing in more imports because of the strong growth in the consumer and machinery and equipment sectors. In general, the Bank expects a moderate deficit in trade in goods and services of less than \$500 million. Exports should increase by 11.8 per cent and imports by 10.8 per cent.

A 10.9 per cent increase is foreseen in Gross National Product (GNP) made up of a 4.2 per cent increase in prices and 6.5 per cent in real GNP. Some lessening in food-price increases are expected to result in a slightly better inflation record and if average productivity increases by 2.5 per cent in 1973, the Bank's forecast implies an increase in employment of 3.9 per cent.

The Bank concludes that unless the growth rate of the labour force speeds up appreciably, an employment gain this large should reduce the average unemployment rate by about half of 1 per cent to about 5.9 per cent, and perhaps lower.

New airport for Calgary

A new air terminal worth \$57.7 million will be built at Calgary during the next three years, Transport Minister Jean Marchand announced recently.

Work on the complex, scheduled to begin in the summer, should be completed early in 1976, when the terminal will be capable of handling up to two million passengers a year. The design allows for expansion to the year 2000 and beyond to meet the estimated increase in passenger traffic. Projections show that, by 1980, 3.1 million travellers will be "processed" annually, 4.6 million by 1985, 6.7 million by 1990 and, by the year 2000, 13.5 million people will be travelling to and from the Calgary terminal each year.

A sharp increase in freight is also forecast for Calgary, from 11,197 tons of cargo and mail in 1970 to 246,900 tons by the year 1990.

The Province of Alberta and the City of Calgary have given assurances that airport operations will be protected by

For the past two years, the Bank of Montreal has published its economic forecast for Canada in the January issue of its Business Review.

The following is the 1971-1972 "Boxscore":

Percentage increase in:	1971		1972	
	Forecast	Actual	Forecast	Actual*
Consumer spending	7.7	7.8	10.4	10.5
Government spending	12.3	12.7	9.8	11.2
Business capital investment	5.7	5.8	8.0	10.0
Housing construction	14.5	23.0	12.0	17.4
Exports	8.2	5.3	8.4	9.5
Imports	9.4	9.6	13.0	12.5
GNP (current dollar)	8.3	8.9	9.3	10.7
Price deflator	2.8	3.3	3.1	4.9
GNP (constant dollar)	5.4	5.5	6.0	5.5

* With fourth quarter estimated.

zoning restrictions which are required before construction can begin, Transport Minister Marchand stated.

The complex will consist of a new air terminal building, a services building, a parking structure, roads, aircraft aprons, taxiways, and ancillary items required to provide a modern air facility. Private enterprise will probably add other facilities in the area, such as cargo facilities, a self-drive automobile service and food-catering facilities, etc.

Children's books in Canada

Young Canada's Book Week in November, supported by the Canadian Book Publishers' Council (CBPC) and organized by the Canadian Library Association (CLA), provided an opportunity to bring to the public's attention a very important aspect of the book trade.

In Canada, children's books make up 34 per cent of the revenue from trade book sales, yet 96 per cent of these books are imported. In the past three years, British and United States publishers have produced between 3,000 and 5,000 children's books annually, while Canadian publishers have only produced about 100. This serious situation is receiving attention by such groups as the CLA and CBPC; the latter recently set up a special committee on children's books to investigate the feasibility of instituting a Canadian Children's Book of the Month Club to promote Canadian books for children.

One publisher, Clarke Irwin, took several major steps in 1972 to fill the vacuum existing in the publishing of Canadian children's books. The company has adopted the words "Canadian books for Canadian children" as its slogan, hired well-known children's book critic Janet Lunn to be the first children's literary editor in Canada, published eight children's titles this autumn and initiated a major pro-

motion campaign to draw attention to Young Canada's Book Week.

Stumbling blocks

Several major problems, however, face this segment of publishing in Canada. Since children's illustrated books are costly to produce, a book usually only brings a profit after 3,000 are sold. Their only potential markets are school and public libraries and a few book stores. Very little time and space is devoted to reviewing children's books in Canada and very few libraries have a qualified children's librarian. Consequently, buying by libraries is often erratic. In a situation with a small and risky profit margin, few children's books are written and fewer are published. Only a minimal number of awards exist to act as incentives to children's writers and publishers.

Brighter future

There is greater potential in the Canadian market, however: Sheila Egoff in her essay on children's books in the *Background Papers* of the Royal Commission on Book Publishing stated that "the 1966 census of Canada reported that there were 4,394,370 people below the age of 15 and that, according to the projections, the number of children in Canada may be nearly 5 million by 1980".

AECL-Polymer agreement for production of heavy water, 6

Atomic Energy of Canada Limited and Polymer Corporation have reached an agreement to collaborate in the development of new processes for the production of heavy water.

For some years, research into new methods for producing heavy water has been carried on at AECL's Chalk River nuclear laboratories. Under the terms of the agreement, Polymer will take the lead position in the development work and will build and operate experimental facilities at Sarnia, Ontario. Expenditures of between \$1 and \$2 million a year are expected.

In existing heavy-water-production plants in Canada, heavy water is separated from ordinary water with the aid of hydrogen sulphide. Two new production methods under consideration are a steam-hydrogenamine pro-

cess and a hydrogen-water process.

The steam-hydrogenamine process involves the removal of heavy hydrogen from steam with the aid of ordinary hydrogen. The heavy hydrogen is then concentrated with the aid of an amine, a compound formed from ammonia. In the hydrogen-water process, heavy water is removed from ordinary water with the aid of ordinary hydrogen and a catalyst developed at Chalk River.

Potential advantages of the new processes are lower capital cost, lower energy consumption, smaller equipment, less corrosion and elimination of hydrogen sulphide from the system.

Continued from Page 2

them the long-range planner's viewpoint. An extensive educational program is required and even if this were accepted by the Indians and started immediately it would take some years for them to fully realize the potential advantages of the hydro-electric development.

Since the publication of the report, a group of Indians from different bands in the James Bay region has been seeking an interlocutory injunction against the Corporation to halt the project, claiming that it will cut the "lifeline" of the area's inhabitants. They assert that a suspension of the hydro-electric development until questions regarding their rights have been settled, will enable them to fully assess the possible effects of the project and establish whether it really is the "Last Judgment" by the white men — a connotation it was given because of the proposed flooding. The McGill report is a basic document that will be used by the Indians in their assessment, as it has been by the James Bay Corporation.

Corrigendum

In the article "Visit to Ottawa of Sweden's Foreign Minister", *Canada Weekly*, January 31, 1973, P. 3, fourth paragraph, the penultimate sentence should read: "In 1971 Canada's exports to Sweden amounted to some \$45 million, with Sweden sending to Canada goods valued at about \$112 million." □

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