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SHASTRI INDO-CANADIAN INSTITUTE

The Governments of India and Canada have announced the establishment of a Canadian institute of Indian studies, named the Shastri Indo-Canadian Institute in honour of the late Prime Minister of India, Lal Bahadur Shastri.

The main object of the Institute will be to promote and foster the growth of Indian studies in Canadian universities, with a view to a deeper understanding on the part of Canadians of Indian life and culture. It will encourage study and research in India in the humanities and social sciences by scholars from Canadian universities and colleges, will also support other academic programmes and activities relating to India and help Canadian universities and colleges to create chairs for different aspects of Indian studies. The Institute will acquire Indian books for distribution among its founding members – McGill University, the National Library of Canada and the Universities of British Columbia and Toronto.

The programmes and the activities of the Institute are, however, intended to be of mutual benefit to both India and Canada. Research programmes and study in India will be adjusted so far as possible, to the scholastic needs of the country, the results by selected Canadian scholars in India being made available to Indian scholars. To this end, the Institute will present the Government of India with a copy of every thesis or research study prepared by the research scholars and fellows of the Institute.

TERMS OF REFERENCE

The Institute, which has been incorporated in Ottawa under the Canadian Corporations Act, has its head office at McGill University, Montreal. With the approval of either the Indian or Canadian Government, it may establish one or more branch offices in India or Canada. Membership will be open to all Canadian universities and colleges.

Two advisory councils, one in India and the other in Canada, will generally advise the board on all matters affecting the administration of the Institute in India and Canada. The Indian council will, in addition, advise on suitable areas of research in Indian studies.

The Indian costs of the Institute will be met out of the fund of counterpart *rupees* accruing from Canadian food and commodity aid to India. The expenditure on the maintenance of the Institute in India is estimated to be *rupees* 30 *lakhs* ($431,000 (Cdn)) during the first three years.

The work of the Institute will be reviewed before the end of the third year. The Governments of India and Canada hope that the work of the Institute will justify its continuation and that the Institute will constitute an important milestone in Indo-Canadian co-operation.

NEW NICKEL PLANT

A refinery for producing high-purity nickel pellets and powders by means of a new process will be built by The International Nickel Company of Canada, Limited, at a cost of $85 million, it was announced recently.

Construction of the plant at Copper Cliff, Ontario, will begin immediately and should be completed in 1971.

The plant, which will be highly automated, will have an annual capacity of 100 million pounds of nickel in the form of pellets and 25 million pounds in the form of powders. Sizable quantities of other refined and semi-refined products will also result.

ADVANCED PROCESS

"This additional refining capability will be based on an outstanding advance in extractive metallurgy – the Inco pressure carbonyl (IPC) process treating sulphide concentrates and metallurgical intermediates," says Mr. Henry S. Wingate, chairman and chief officer. "Besides technological and cost advantages over previous methods of nickel refining, we will gain in such vital areas as metal recovery, product quality and pollution control."

The new process, covered by basic patents and patent applications, integrates the main divisions of the science of extractive metallurgy, pyrometallurgy, vapometallurgy and hydrometallurgy. Feed preparation will be carried out in tuyèreless top-blown oxygen converters, marking the first commercial use of this modern device in sulphide ore treatment. Developed by International Nickel's chemical metallurgy research staff, the IPC process has been proven in tonnage prototype units of special design at the company's Port Colborne (Ontario) research stations.

Mr. Wingate added that the Company's need for much greater refining capacity stemmed from its accelerated mine development and expansion programme in Canada. By the end of 1971, International Nickel will have nine new mines in operation in Ontario and Manitoba; the combined ore recovery from these operations and its ten existing mines – seven of which are undergoing expansion – will enable the company to raise its annual Canadian nickel-production capability to more than 600 million pounds – an increase of some 30 per cent above its current capability.

Besides producing nickel pellets and powders, the new IPC complex will produce copper, cobalt and sulphur and will centralize precious metals concentration operations before final refining at the company's plant at Acton, near London, England.

MANITOBA'S MAN-MADE GRAIN

The world's first synthetic grain species will probably be released for general commercial production in 1970 by a research team at the University of Manitoba.

Triticale, a cross between durum wheat and its distant cousin rye, resembles bread wheat in many respects but has heads up to twice as large and a higher protein content. The world's food shortage will, it is hoped, be solved partly by such protein-rich foods. Fertility and palatibility problems remain, however, and must be overcome by further research and development. Field tests in Saskatchewan last year showed that the new grain failed to measure up to commercial cereals in yield, period of maturation and bushel weight at its present stage of development.

Triticale has been puffed, popped, flaked and otherwise prepared for dry breakfast cereal; its flour has been made into bread; pancake flour has been produced from it. But most of the first few million pounds of seed sown by farmers on Canada's prairies will be for livestock feed and for sale to distilleries. Cattle like it – and it is said to make great whiskey.

Test plots of Triticale are being grown in other parts of the world, particularly across the U.S.A., in Mexico, and in India.

Now in the ninth generation, Triticale has become a viable plant, reproducing itself in the field true to type. Much of the work on it is shifting from species synthesis to multiplication of varieties. That work is similar to the search for better varieties of wheat, except that so far only a handful of Triticale varieties have been examined, while thousands of wheat varieties are known.

The sterility of previous crosses is attributed to the impossibility of 14 chromosomes from durum pairing with only seven in rye. Instead of pairing, they arrange themselves as 21 single chromosomes. Without pairs, sexual cells cannot divide to continue the reproduction process into the next generation.

The Manitoba team, which began its work in 1954, overcame this difficulty by the injection of a drug, cholchicine, which has the property of causing plants to double their numbers of chromosomes, so that Triticale can be produced with 21 pairs of chromosomes.

This injection of cholchicine occurs at a curious stage. The first act is removing the anthers from a durum wheat plant, and pollinating its flowers from the anthers of a rye plant. Only a few crosses "take", and in only a few days they face a problem similar to the human body's tendency to reject foreign organs: in the case of plants, the incompatible embryo is simply not nourished by the mother plant. University researchers remove it when it is still a very early 'premie' and place it in a plate of plant food. Instead of developing into a seed, the embryo develops directly into a plant, and eventually it is transplanted into soil. At that stage, the cholchicine is injected into its stem, and with luck this new species of plant will produce fully fertile seed, capable of reproducing normally, through seeds, the plant that was itself never a seed.

AFTER THE BREAKTHROUGH

Triticale is being originated again and again as different varieties of durum wheat and of rye are combined and carried through that difficult but proven process. There is search for a Triticale that is resistant to light, to be grown in the hot countries. There is search for a Triticale with smooth seed, one that will put more weight in every bushel measure.

Normal breeding programmes have solved many of Triticale's early problems, especially its great height which made adult plants with big heads so top-heavy that they fell over and escaped the harvester, and the early problem of sterility. Traditional breeding programmes are expected to develop Triticale strains with higher percentages of lysine, an animo acid valuable in animal feed.

ONTARIO TIGHTENS TRAFFIC LAWS

All used cars sold in Ontario will be subject to stringent inspection for mechanical fitness under one of 26 measures introduced as amendments to the Highway Traffic Act and passed recently in the provincial legislature.

The Ontario Minister of Transport, Mr. Irwin Haskett, who proposed the amendments, noted that such inspections had been required for all used cars sold by dealers since last year. They will now be required for all cars sold privately. About 600,000 used cars are sold annually in Ontario.

Mr. Haskett explained that a certificate of mechanical fitness would have to be produced when a vehicle was registered at the time of transfer of ownership, Alternatively, the car's licence plates would have to be surrendered and the purchaser would be required to obtain and submit such a certificate before the Transport Department would license the car again.

The amendment also provides for more specific and uniform standards for the certificate of mechanical fitness.

OTHER CHANGES

Another major amendment provides Ontario magistrates with the discretionary power to suspend a driver's licence for up to 30 days following conviction on a charge of driving at more than 30 miles an hour above the speed-limit.

Among other amendments passed by the legislature were:

A requirement for operators and passengers of motorcycles to wear helmets.

Provision for certain municipalities to be exempt from the school-bus stopping law on certain roads with speed limits above 35 miles per hour.

Provision for municipalities to prohibit pedestrians on any highway under their jurisdiction on which the maximum speed is 50 miles an hour or more.

Requirement that the slow-moving vehicle emblem (a triangular red and orange sign) be used on all farm tractors and self-propelled farm implements operated on highways.

Clarification of the law requiring doctors to report persons who appear to be unfit to operate a motor vehicle. The new section makes such reports privileged for use in connection only with driver licensing, and the reporting doctor is relieved of the possibility of civil liability.

LOAN TO PAKISTAN

Mr. Mitchell Sharp, the Secretary of State for External Affairs, and Pakistan's High Commissioner to Canada, His Excellency M.S.A. Baig, have signed a $2-million international development loan agreement enabling Pakistan to purchase Canadian telephone cable to be used in the modernization and expansion of Pakistan's telecommunications system.

Tenders will be called shortly for the project. The Pakistan Telephone and Telegraphic Department, using Canadian procedures, will contact Canadian cable manufacturers who are in a position to supply the required equipment.

The loan carries no interest and is repayable over a period of 50 years. No payments are required during the first ten years of the agreement.

SATELLITE COMMUNICATIONS STUDY

Contracts for studies on the design, development and supply of a Canadian domestic satellite communications system were announced recently by Mr. Jean-Luc Pepin, Minister of Industry.

The studies follow the Federal Government's announcement on April 1 of plans to create a domestic satellite communications system. A White Paper indicated that the Government also planned the creation of a domestic satellite communications corporation and stated that Canada already possessed to a large extent "the essential technology to determine the design and construction of its own system". (See *Canadian Weekly Bulletin*, No. 18, P. 1, dated May 1, 1968.)

The purposes of the study contracts awarded by the federal Department of Industry are to:

Define a satellite design suitable for a Canadian domestic satellite communications system.

Examine trade-offs between satellite parameters and ground-station parameters and select the optimum system for Canadian requirements.

Provide an implementation plan for the development and fabrication of the space segment of the system and for optimum participation by Canadian industry.

Prepare cost and schedule estimates for the design, development, fabrication, testing and launching of the space segment of the system.

POWER-LINE IN TUNISIA

The Secretary of State for External Affairs, Mr. Mitchell Sharp announced recently that a Montreal firm had been chosen to make a reconnaissance study for a 42-mile electrical transmission line in Tunisia, and then to design and build it. Canada will provide an interest-free development loan of about $1 million to finance the foreign-exchange costs of the project under the Canadian international development programme.

The line will stretch from Tunis to Korba, and will help to alleviate a growing demand for power in the Cap Bon area, created by improvement and expansion of agriculture and by a rapidly-expanding tourist industry.

The project was accepted for financing in February by the Canadian economic development mission to

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the French-speaking countries of Africa, led by Mr. Lionel Chevrier.

Canada provided $1 million in food aid to Tunisia last year, and a team of 50 Canadian medical experts is helping to develop a 300-bed children's hospital in Tunis.

TEACHING AIDS PROMOTED

Five Canadian businessmen will leave Canada early in September on a trade mission to Mexico City, Kingston, Caracas, Lima and Santiago, which will last almost a month.

The group, sponsored by the federal Department of Trade and Commerce, the Canadian Educational Equipment Mission to Latin America and the Caribbean, will assess the market for educational equipment, teaching aids, and, in particular, vocational and language-training equipment and educational television apparatus manufactured in Canada. The mission will also promote consultation and design services offered by Canadian firms.

Meetings have been planned for the mission with government officials, educational administrators, United Nations experts, importers and distributors of educational equipment and systems. Present and potential purchasers will be informed of the new products available from Canada's educational equipment and teaching-aids industry, as well as the latest developments in Canadian educational-television systems and techniques.

STAMP SCHEDULE REVISED

A re-scheduling of release dates for Canada Post Office stamps has been announced by Postmaster-General Eric Kierans.

To provide an increased period for public awareness of the fiftieth anniversary of the 1918 Armistice, a stamp on this theme will be advanced from November 6 to October 15. The international significance of the end of hostilities will also be marked by production of the Armistice stamp in the 15-cent denomination suitable for overseas air transmission. There will be a large reduction in the printing order, which is usually about 24 million.

Also re-scheduled from November 6 to October 15 is the stamp honouring Lieutenant-Colonel John McCrae, the author of *In Flanders Fields*.

Christmas stamps, originally scheduled for release on October 9 will not be on sale until November 1.

MAJOR FISHERY MEETING PLANNED

The effect of automation and mechanization on the fishing industry, both now and in the future, will be analyzed at a major conference to be held in Montreal from February 3 to 6, 1970.

Although tradition plays a greater part in the fisheries than it does in most industries, the modernization of Canada's fishing fleets and shore establishments has been greatly accelerated during the past few years, and is to be continued at an even faster rate.

The Conference on Automation and Mechanization in the Fishing Industry is being sponsored by the Federal-Provincial Atlantic Fisheries Committee, which is composed of the deputy ministers responsible for fisheries in the Federal Government and in the governments of Quebec, Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland. Its purpose is to describe the various methods and techniques that reduce tedious, arduous work while increasing the workers' pay and conditions and improving the efficiency of the industry both afloat and ashore.

TOPICS OF DISCUSSION

Papers will be submitted at the Conference by experts in many fields, both from Canada and from other leading fishing countries. Navigation, vessel operations, all types of fishing gear, processing methods at sea and on land, the handling and stowage of fish at sea, the transfer and unloading of fish, manpower, and vessel design and construction, will be discussed, as well as related topics such as marketing, relevant legislation and port development.

The Federal-Provincial Atlantic Fisheries Committee has found the conference approach to fisheries industrial development to be most successful. Significant achievements have resulted from conferences already held on Canadian Atlantic offshore fishing vessels, the Canadian Atlantic herring fishery, the development of Irish moss and other marine plants, and on fish protein concentrate. Plans are nearing completion for a conference to be held in Montreal in October on construction materials for fishing vessels.

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