

20th Century Report

[AN INQUIRY INTO SCIENCE, AND INTO CANADA ITSELF]

Canada is in the midst of a long-term review of its science policy, and — since science is so much a part of modern society — this has tended to become an inquiry into Canada itself and what makes it go.

One of several groups taking part in this review is the Science Council of Canada, set up by Parliament in 1966 to give advice on the adequacy and priorities of Canadian science and composed largely of scientists from universities, industry and national research organizations, all serving part time. The Council began its studies by looking at science as such. Gradually it delved deeper and deeper into Canadian life. It considered what Canada's national goals ought to be and how science might serve them. It looked at the economic problems of Canadian industry and at the quality of life in Canada's cities.

Finally, in his sixth and last annual report, O. M. Solandt, the Council's chairman from its beginning until his recent retirement, makes an excursion into basic philosophical values, examining the pros and cons of a society based on material goods and growth of production and offering Canadians an alternative.

Solandt's name is followed by the initials C.C., O.B.E., C.D., B.A., M.A., M.D., D.Sc., D.Eng., LL.D., F.R.C.P., F.R.S.C., F.A.A.A.S., M.E.I.C. (Hon.). During most of his years on the Council he was concurrently chancellor of the University of Toronto. He is also an observer of Canada, which he described in his first annual Council report as "a relatively empty country, whose primary resources are not even fully explored, and in which the building of secondary industry is only beginning to gather momentum." Population, individual productivity, gross national product, capital investment, levels of education and other measures were all, he noted, rising rapidly. Canada's assets included rich resources in a world in which these were increasingly in demand. Its disadvantages included climate, small population and great distances. The task of science, Solandt wrote, would be to "capitalize on our advantages and overcome our special difficulties or even turn them into assets."

In 1968 the Council recommended that Canadian science be focused more directly on social and economic needs and proposed a series of "major programs" in which many scientific disciplines and sectors of the economy would work together on national problems. Canada already

had one scientific endeavor of this scope under way — nuclear power. (It now has three plants generating electricity by a Canadian-developed nuclear process using natural uranium and heavy water). Other large programs in space and water resources management were being started. The Council proposed that other major programs be planned in the fields of transportation, urban development, computer applications and scientific and technical aid to developing countries. In 1971 the Council followed up with a report proposing research programs on problems of cities, including urban transit, construction and waste recycling and disposal. The report noted that, despite its vastness, Canada is really an urban country. Nearly 75 per cent of its people live and work in urban areas comprising less than 1 per cent of its land. By 1980, 80 per cent of its population will be urban. Another Council report proposes a nation-wide computer network, and others urge programs in forest management, marine science, earth sciences, fisheries and wildlife and pollution control. A program to develop and put into service a Canadian short take-off and landing aircraft (STOL) is going forward. Canada has a \$25 million per year space program, without manned flight or planet probes, but including sounding rockets and Canadian-built, U.S.-launched research satellites. A Canadian satellite designed to hover in stationary orbit over Canada, for communications within the country, was built by Hughes Aircraft in the United States and launched in November from Cape Kennedy, Florida.

In 1966, when the Council began work, Canada devoted 1.3 per cent of its gross national product to research and development, compared with 3 per cent in the United States, and trailing Britain, the Netherlands, France, Japan and Germany. The Council recently issued a preliminary estimate that the 1972 level would be around 1.4 per cent. A Canadian Senate Special Committee on Science Policy, which has been making a parallel study of Canadian science since 1967, has proposed a Canadian R&D level of 2.5 per cent of GNP in 1980. The Council has said it does not believe in setting an arbitrary level of R&D but would prefer to build it up program by program.

Both the Science Council and Senate Committee reported that the segment of Canadian science most in need of improvement was industry's portion. Proportionately less of Canada's R&D takes place in industry than is the case with