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NRC research The Dimensions

The burnished sphere in front of NRC's Ottawa headquarters building suggests nature in all its dimensions, from distant, wheeling galaxies downward to the microcosm of the atomic nucleus. Much more than just a symbol, it serves as a statement of the Council's intent - to extend Humanity's knowledge of the physical universe.

To give Science Dimension readers an idea of just how diverse are the areas under investigation by Council scientists, the stories of this issue have been selected from each of the eight NRC Divisions in the Ottawa area. However, this thumb-nail sketch of diversity only provides a sampling of the Council's multi-fold operations. A large, futuresque building on the Council campus attests to the fact that NRC has a library containing Canada's foremost collection of scientific and technical literature (called CISTI, for Canada Institute for Scientific and Technical Information). But there is little outward evidence of another kind of service - an experienced staff of advisors who "troubleshoot" for industry. Called the Technical Information Service, this group has access to information on the very latest technological advances, and combines this with an impressive legacy of experience to solve industrial problems.

In fact, there is very little outward evidence of the extensive program that exists at NRC for aiding Canadian industry. The two main thrusts of the Industrial Programs Office, aiding in the transfer of NRC laboratory advances to industries, and assistance programs that support promising research in industrial laboratories, are largely unheralded; to do the Office justice would require tours of industrial laboratories across the breadth of Canada.

Given the time and means, an interested observer would have to do some travelling outside Ottawa to fully appreciate the national flavor of NRC research. The Atlantic Regional Laboratory in Halifax, N.S., would be one of the first stops. This NRC Division is well integrated into the university and industrial research communities of the Atlantic provinces, with major programs relating directly to the region's economy, particularly marine plants and steelmaking. To visit the Council's other regional laboratory, a trip to Saskatoon, Saskatchewan, is necessary. Here in the nation's agricultural heartland, the Prairie Regional Laboratory

carries out research heavily oriented to plant science. Unusual new hybrids grown from "fused" plant cells, protein and starch product development and lab-manufactured insect scents are just a few areas of interest. While much of the work is fundamental, as is the case at the Atlantic lab, it is nevertheless aimed at practical applications.

To inspect NRC's installations for viewing the cosmos, our much-travelled observer would have to span the country, beginning with the 46 m dish radio telescope deep in the woodlands of Ontario's Algonquin Park, to the array of radio telescopes in the mountain highlands near Penticton, B.C., and finally to a hilltop in Victoria, where two light-reflecting telescopes are located.

It would be no surprise to find many scientists from outside NRC at these telescope sites, since they are National Facilities, open to use by the Canadian science community as a whole. While on the west coast, a visit to another kind of National Facility would also be in order. On the campus of the University of British Columbia stands TRIUMF, or Tri-University Meson Facility, a nuclear particle accelerator so huge and powerful that it can create beams of mesons, the "glue" that holds the atomic nucleus together.

A few years hence, a comprehensive tour of NRC will require travels that range much farther afield. One journey will be across the Pacific ocean to the barren summit of Hawaii's highest mountain, Mauna Kea, where the huge, light-reflecting Canada-France-Hawaii telescope is set to begin operations sometime in 1979. Memorial University at St. John's, Newfoundland, will be another stop, where the Arctic Vessel and Marine Research Institute is slated to open in the Spring of 1982, equipped with the largest ice tank facility in the world. Between these two geographical extremes, on the south shore of the St. Lawrence River near Montreal, the Council will open a laboratory devoted to a comprehensive study of materials. The Industrial Materials Research Institute, now functioning in rented space, will take over its own facilities when they are completed sometime in 1980-81. □

Wayne Campbell