

## McGill leads toxicology research

Dr. Donald Ecobichon, formerly of Dalhousie University, has recently agreed to direct a McGill University Ph.D. program in toxicological research. The toxicologist praises the Quebec government's recognition of the need to investigate scientifically the harmful effects of industrial and agricultural chemicals on biologic tissue.

According to the professor, "We know virtually nothing about the more than 5,000 new chemicals marketed in North America this year, let alone the thousands of products introduced the year before and the thousands before that."

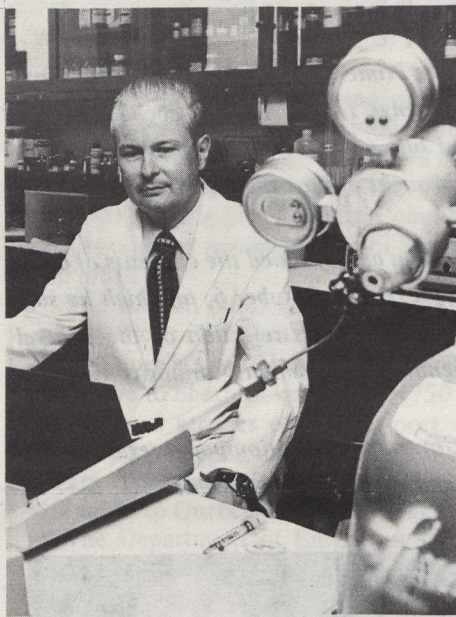
Dr. Ecobichon says that few companies have facilities to measure the potential hazard of their product to their own workers let alone the general population, and there are even fewer national and provincial environmental pollution laws to guide them.

### Offenders

Major offenders include plastics, pesticides, solvents, aerosol, propellants, a wide variety of organic chemicals as well as inorganic compounds including arsenic, mercury, cadmium and lead. Much more research is needed to determine how many of these chemicals can harm such vital organs as the heart, kidney, liver and nervous system. McGill's new toxicological expert, whose main research interest lies in the field of organic environmental pollutants, feels that some commonly-used household products are "downright dangerous". He added that in many categories, such as mercury poisoning amongst Northern Ontario Indians, "the surfaces of the problem associated with this environmental pollutant have barely been scratched. It suggests a virtual Pandora's box".

As a response to the critical need in government and industry for toxicological experts, McGill has prepared an outline for a graduate program leading to a Ph.D. in toxicology, and has submitted the proposal to the provincial Department of Education for consideration and funding.

Formerly, the emphasis in pharmacology studies has been on the mechanics of drug action, rather than on toxicological methods. A toxicologist, on the other hand, develops different skills; expertise in measuring toxins and the



Henry J. Kahanek

*Dr. Ecobichon will head up Canada's only Ph.D. training program in toxicology.*

knowledge of the principle of toxicological screening and methods. Emphasis is on the dose-response relationship of the effects of chemicals on tissues. Within the last couple of years heightened governmental — and public — interest in the effect of chemicals on biological tissues, together with impending legislation in the U.S.A. (Toxic Substances Act) calling for severe controls and surveillance on environmental chemicals, prompted McGill's medical faculty to formalize toxicology as a separate discipline within the Department of Pharmacology and Therapeutics.

Dr. Ecobichon's current research will be done in collaboration with two graduate students and two technicians who moved to McGill University with him, and one new student who joined his group in September.

Federal grants are expected to cover the bulk of the cost of the program's research, which in the early stages will focus mainly on emulsifiers used in forest spraying.

## University research grants

Fisheries and Environment Canada has agreed to spend \$1 million to subsidize 49 water-research projects in Canadian universities. The Inland Waters Directorate negotiated these research agreements with 22 Canadian universities to complement its own scientific program.

An award of \$88,000 was made to the Westwater Research Institute of the University of British Columbia to enable it to continue its study of coastal-resource management. The university is also conducting a study of glacier beds as well as doing mathematical work comparing two basic approaches to models that predict runoff from rainfall. At Simon Fraser University an investigation of pollutants generated by chlorination of waste water will receive financial aid. The total value of awards to the two universities is \$114,600.

A major study at the University of Saskatchewan of snow hydrology in the prairie environment is one of six projects at prairie universities, which received a total of \$183,500. Studies of the Slave River delta, the Marmot and Red Deer basins and of pollution in the Red River Valley are among the other projects supported by the Department. The University of Calgary's water-quality program in the Red River and Marmot basin is jointly funded by the Department and Alberta Environment. This is one of several projects that involve co-operation with other agencies.

Waterloo University in Ontario has received \$76,900 for seven projects covering a broad spectrum from chemistry of mercury methylation to socio-economic studies of river diversions and flood hazards. The Institute of Environmental Studies at the University of Toronto was awarded \$79,000 to continue research on water pollutants such as oil and toxic metals and on the cost-effectiveness of environmental monitoring. Five other Ontario universities received a total of \$241,000 to support a variety of studies.

At Laval University, CENTREAU will further its research program on sediments and water quality in the St. Lawrence River with an award of \$63,500. This year it will also initiate a study of the physical and hydrological behaviour of the snow pack. Three research teams attached to the University of Quebec will share \$77,000.

In all, five Quebec universities received a total of \$221,000 for nine water research projects.

In the Atlantic provinces three universities were given \$84,000 for five projects, the largest of which is at the University of New Brunswick. There, a group of biologists was awarded \$45,000 to continue work on the use of river bacterial populations as pollution indicators.