

INTRODUCTION

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The Atlantic Regional Laboratory of the National Research Council of Canada celebrated its 25th Anniversary in October of 1977 with a series of events including lectures, symposia, open house to which the public was invited, a banquet, and a staff party.

It was on June 16th, 1952 that Dr E. W. R. Steacie, President of the National Research Council, officially opened the laboratory. In his address, Dr E. W. R. Steacie said:

"By devoting itself to research along lines connected with the problems of the Maritime Provinces, it is our hope that we may make some contributions to the welfare of these provinces, and to the assistance of Maritime industry.... It seems to me that the ideal government laboratory is one which does applied research in an academic atmosphere.... The main function of such a laboratory should be to do the long-term general things which no single industrial firm can or will do for itself. In short, it is to have the academic approach, but applied to problems of specific interest."

This philosophy has guided the development of research programs at the Atlantic Regional Laboratory throughout its first 25 years.

Dr E. Gordon Young, a graduate of McGill and Cambridge Universities and professor of biochemistry at Dalhousie University, was the first Director. Under his leadership, the laboratory was organized into four sections for the study of biological, chemical, engineering and metallurgical sciences. Biological scientists studied some aspects of the nutrition of animals and humans, haematology, the fermentation of apple juice, the autolysis of cod fillets, the control of fungal slime in pulp and paper mills, and the physiology of plankton and seaweeds. The chemists examined the chemical changes that occurred in potatoes during storage, the chemical composition of peat, the nature and deposition of pitch in pulp mills and the chemistry of the polysaccharides in seaweeds. A dryer was designed for the commercial drying of seaweed and built by the Engineering group, and the Metallurgical group commenced a series of studies on the kinetics of chemical reactions that occur during the processes of extracting iron from ores and the making of steel.

Dr A. C. Neish, a graduate of the Nova Scotia Agricultural College at Truro and Macdonald College (McGill University), succeeded Dr Young as Director in 1962. Plans for an addition were prepared, and a new wing completed in 1967 doubled the amount of laboratory space. Concomitant with this was an expansion of the research programs to include work on lichens, the production of antibiotics and toxins by microorganisms, the chemistry of natural products including hallucinogens and pesticides, and the physical chemistry of ice and water. The resources of the entire laboratory were marshalled in 1970 to assist in the clean up and investigations on problems resulting from the spill of bunker-C oil in Chedabucto Bay as a result of the wreck of the "Arrow". Some studies on specific aspects of the clean-up continued for several years after the major task was completed. In 1967, land for a seaweed culture station was acquired on the shores of the Atlantic Ocean and there, in some

war-surplus huts and a greenhouse, Dr A. C. Neish worked on Chondrus crispus (Irish moss) until he became seriously ill in 1972.

Dr F. J. Simpson, a graduate of the Universities of Alberta and Wisconsin, was appointed Director in 1973. Within the prevailing economic constraints the major research programs were further developed around a core of well equipped physical chemists who use such analytical techniques as electron microscopy, infra-red spectrometry, mass spectrometry, nuclear-magnetic-resonance spectrometry and X-ray diffraction spectrometry as their main experimental tools. The scientists responsible for these instruments carry out their own research programs and provide other members of the staff and collaborating scientists in other organizations with access to these highly specialized techniques. Though the research work on pesticides and hallucinogens was terminated, work on establishing reference materials, chemical standards, and improved analytical procedures for marine chemists, was begun. The research on marine algae was expanded, and knowledge obtained from 25 years of research is being applied to development of methods of cultivating these plants on a large scale for use in the food industry, or as sources of industrial chemicals, and as a means of providing experimental material grown under controlled conditions for biochemical and chemical studies. The study of toxins produced by fungi present in the soil and on pasture grasses, and the effect of such toxins on the fermentation in the rumen of sheep and cattle may provide an answer as to why these animals frequently do not fare well during late summer on Nova Scotian pastures. Knowledge gained from years of study on the constitution and structure of metallurgical slags and glasses and on the kinetics and thermodynamics of processes in the extraction of metals from ores is being applied to the removal of hydrogen from steel, the removal of sulfur from coal, coke and steel, and the extraction of lead and silver. Because of their expertise in the analysis of silicates, scientists at ARL participated in analyses of lunar fines brought back from the Moon by the Apollo flights.

From its beginnings, ARL has been involved with universities and industries in the Atlantic region; in fact, cooperative efforts between scientists within and without the laboratory are a way of life at ARL. Some of the staff have honorary appointments at Dalhousie and Acadia Universities and some university scientists and students from time to time are guest workers at ARL. Other members of the ARL staff are involved in research projects with the Sydney Steel Corporation, Brunswick Mining and Smelting, Marine Colloids Ltd., Genu Products Canada Ltd., and PEI Seaweeds Ltd.

On the occasion of its 25th Anniversary, the Atlantic Regional Laboratory honored those mainly responsible for guiding the laboratory's development. Among the first on the scene was Dr W. H. Cook, then Director of the Division of Applied Biology of the National Research Council in Ottawa. Dr Cook joined the National Research Council in 1930. After serving as a Director of a Division between 1941 and 1968, Dr Cook was appointed Executive Director and Assistant to the President for two years before retiring. He also was Director General of the Canadian Committee on the International Biological Program. Dr Cook played a major role in the development of the National Research Council, and the establishment and development of the Regional Laboratories. He was invited to be the principal speaker at the Anniversary Banquet held on October 13th and his address is reproduced here. Also honored at that

banquet were six members of staff who have been with the laboratory throughout its history, the Vice-President, Mr W. C. Cumming, and President W. Schnieder. The President presented the laboratory with a position for an annual Distinguished Visiting Scientist on the occasion of its 25th Anniversary.

The first Director of ARL, Dr E. Gordon Young was honored at a Memorial Symposium held on the afternoon of October 13th at Dalhousie University. The chairman was Dr W. Yaphe of McGill University and the speakers were Dr W. W. Hawkins (NRC), Dr G. H. N. Towers, of the University of British Columbia, and Dr R. G. S. Bidwell of Queen's University. The chairman and each speaker were former members of the Atlantic Regional Laboratory and, with the exception of Towers, had worked under Dr Young. The lectures were profusely illustrated with colored slides, but only the texts and data are reproduced here. The Atlantic Regional Laboratory, Dalhousie University and the Nova Scotian Institute of Science joined the A. C. Neish Memorial Trust in sponsoring the second A. C. Neish Memorial Lecture on October 12th. This lecture was given by Dr A. W. Galston of Yale University. Dr Galston, in speaking on Science and Social Concern, traced the history of the discovery of plant hormones and the development and application of herbicides with particular reference to their application in Vietnam, and possible consequences with respect to plant ecology and the effects of traces of dioxins on animal health. It is the latter part of his lecture that is published here. Readers interested in other accounts of Dr Galston's visits to Vietnam may consult the reports by D. Shapley and on dioxin by A. Hay. Dr Galston also profusely illustrated his lecture with color slides illustrating the effects of herbicides on plants and depicting the style of life in Vietnam.

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