

and in 1927 was reorganized under the joint sponsorship of the Canadian Pulp and Paper Association, the Federal Government and McGill University. The Institute staff carries out fundamental research and some applied research in the fields of woodlands operations and pulp and paper mill operations. In addition, in co-operation with McGill University, it trains postgraduate students who are working towards master's and doctorate degrees in physical chemistry, wood chemistry, chemical and mechanical engineering, and whose theses subjects lie in fields of interest to the pulp and paper industry.

The Institute has occupied, since 1927, a building on the McGill campus erected by the pulp and paper industry and in 1958 a new building was completed at Pointe Claire on the western outskirts of Montreal by the Government of Canada in lieu of its former annual financial grants. The building houses Institute staff and facilities formerly located in temporary quarters. The Institute's facilities include: organic and physical chemistry, physics, hydraulics and engineering laboratories; pilot plants for chemical pulping, pulp and chip refining and waste liquor pyrolysis; a greenhouse and other facilities for woodlands research; an extensive library; shops and special facilities for pulp and paper testing and for photographic and microscopic (both light and electron) studies of wood, pulp or paper. At present its staff totals about 150.

The Institute's research activities comprise a basic program, contract research, and technical services. The basic program is supported by assessments from the Maintaining Membership (some 40 companies, representing more than 100 mills and about 90 p.c. of the total production of the Canadian industry) and by a basic grant from the Canadian Pulp and Paper Association. It comprises research of interest to the industry broadly, as distinct from that which is the concern only of a single company or of a small segment of the industry.

The projects in the basic program range from studies of the growing seedling in the forest to the converted pulp and paper product, and fall into six broad classifications: woodlands, mechanical pulping, chemical pulping, paper making, process control and waste utilization. The emphasis is primarily on fundamental and exploratory studies. The Institute is regarded as a centre for broad, long-range and uninterrupted studies of basic principles which individual pulp and paper companies would find difficult to justify in terms of immediate applied objectives. Moreover, the Institute is a centre of highly specialized equipment and manpower which individual companies would not normally have.

In addition to its permanent staff, the Institute, in co-operation with McGill University, has some 25 graduate students working on fundamental projects in the background of pulp and paper technology, which also serve as their theses topics. The head of the Institute's Wood Chemistry Division, who is also the E. B. Eddy Professor of Industrial and Cellulose Chemistry at McGill, directs graduate student work on such subjects as the behaviour of the materials of which wood is made—cellulose, lignin, resins, sugars, and other carbohydrates. The head of the Institute's Physical Chemistry Division, also a Research Associate in the McGill Chemistry Department, directs graduate student work in the physical chemistry of fibres, e.g., the forces which cause cellulose fibres in a water suspension to mat together to form paper. The head of the Institute's Chemical Engineering Division, also Associate Professor of Chemical Engineering at McGill, directs graduate students in such chemical and mechanical studies as the friction losses occurring when pulp flows through pipelines. These Division Heads are assisted by other members of the Institute's staff who likewise hold concurrent honorary positions at McGill.

The Institute also undertakes contract research projects on a cost reimbursement basis for individual companies or groups of companies in the pulp and paper or allied fields. The larger of these co-operative contracts have been concerned with problems of particular segments of the Canadian pulp and paper industry, such as the investigation into the causes of corrosion in alkaline pulping equipment, and the recent study of the rapid deterioration of paper machine wires.