

Sub-committees are currently responsible for: pesticides and organohalogen compounds, heavy metals, air, water, biological, physical energy phenomena; and decisions on relevance. The Secretariat also operates, with the assistance of the National Science Library and the NRC Computation Centre, a scientific and technical information service on pollution research.

The Division of Building Research continues to reflect its triple role as an information, advisory and research agency serving the construction industry of Canada. In most years between 11,000 and 12,000 queries are answered from the Building Research Centre in Ottawa and the regional offices at Vancouver, Saskatoon, Toronto and Halifax. Some 700,000 copies of publications of all kinds were distributed on request during the past year, more than half of them accounted for by the monthly *Canadian building digest*, which is widely used in the teaching of building science and technology as well as by the industry generally.

The growth of the advisory role of the Division is evidenced by the increased number of committee memberships of all kinds held by the Division, which now totals 488. The annual revisions of the 1970 National Building Code, particularly in relation to fire safety provisions for high buildings, represents a substantial increase in this kind of activity for the officers who served as technical advisers to the various revision committees. Committee work has also begun on the preparation of the 1975 edition of the National Building Code and there has been substantial activity in relation to the preparation of a new edition of the National Fire Code to be issued in 1973. Assistance was given to the building standards work of the Canadian Standards Association, the Canadian Government Specifications Board and the American Society for Testing and Materials.

The Division provides opportunities for discussion, at the design stage, of the principles arising out of the steadily developing building science. Opportunities for communication of the results of research done in Canada and elsewhere are provided by building science seminars presented each year in Calgary and in Ottawa. Construction workshops, intended particularly for construction superintendents, were started in 1969 and are now held in nine centres across the country.

Growing interest in the economic development of northern Canada has brought an increasing demand for the experience and expertise of the Division's geotechnical section. Field studies are under way at present on the distribution of permafrost, uplift forces on structures during the freezing of the active layer in permafrost areas, on the forces of ice on structures and the use of insulation in road building. Work on high buildings is continued through projects on wind loads, seismic response of structures and air movement in buildings; the latter has assumed unusual importance because of its close relation to smoke movement. Special studies with the computer were carried out for various operational configurations of typical high buildings, supplemented by field trials in actual buildings incorporating new smoke control systems, as a contribution to information for further development of fire safety provisions in the National Building Code.

The Division of Chemistry covers a broad range of work from relatively short-term programs aimed at practical application in the natural resource and chemical industries, to long-term fundamental investigations in selected areas of scientific and technological importance. Active fields of research are analytical chemistry, chemical engineering, colloids, high polymers, high pressure physical chemistry, hydrocarbons, kinetics, photochemistry and catalysis, metallurgical chemistry, metallic corrosion and oxidation, textile chemistry, chemical spectroscopy, molecular structures, organic spectrochemistry, organic synthesis, thermochemistry, and theoretical studies.

Studies on membrane phenomena have suggested a number of applications for the concentration and separation of constituents of solutions by osmotic action. Considerable potential exists for reverse osmosis as a large-scale engineering process for saline water conversion and other concentration processes. Applications to problems of environmental quality appear to be of particular importance at the present time.

The spontaneous slow oxidation of organic molecules is often a limiting factor in the useful life of fuels, lubricants, foods and textiles. A long-term program of research on autoxidation has made substantial contributions to knowledge of the mechanisms by which these changes take place, and of how they can be accelerated or retarded. The application of this work to the aging process in animal life has aroused considerable interest from the medical profession.