

The year has been one of marked advance in research developments relating to the manufacturing industries which have brought many new problems to the Dominion Physical Laboratory, the Dominion Laboratory and its branches, and the Auckland Industrial Development Laboratories. Negotiations have been almost completed for the establishment, under the jurisdiction of Canterbury University College, of the Canterbury College Industrial Development Department, which will provide service, development, and research for South Island manufacturers. These branches of the Department, working in close association with industry, will enable a high standard of quality to be maintained in locally made products, and ensure that these industries have highly qualified personnel and well-equipped centres to which their particular problems may be referred. All the research associations connected with the manufacturing industries have been very active. Tanners and footwear-manufacturers have combined during the year in the formation of a Leather and Footwear Manufacturers' Research Association, and negotiations are still proceeding for the establishment of a Laundry Research Association. The active interest and participation of New Zealand industrialists in the formation and development of research activities and the application of science to their regular problems is most encouraging.

The Department has engaged in a great deal of service and research work for other State Departments and public bodies. Coal surveys, research on the utilization of high-sulphur coals, and economies in the use of coal in boiler furnaces have been dealt with by the Dominion Laboratory and the Geological Survey, whose officers have also conjointly pursued investigations on the quantity and quality of the Dominion's resources of clay minerals, glass-sands, and iron-sands. Extensive geophysical surveys have been carried out for the State Hydro-electric Department in connection with foundation studies necessary for the construction of dams on the Waikato River. Model studies of water flow associated with each proposed dam have also been undertaken to guide the design work necessary on the actual sites. Problems associated with foundations for large buildings, factories, mills, earth dams, and tanks have been a prominent feature of the soil physics section of the Soil Bureau. The magnetic survey of the Dominion has been extended and re-examined at more frequent intervals, further seismographs have been installed for the study of earthquakes and earth movements, and regular observations of the ionosphere continued to assist in radio problems. The installation of radar in coastal shipping has been assisted by the staff of the Dominion Physical Laboratory.

During the year special attention has been devoted to the relation of science to the building industry. The visit of Sir Reginald Stradling, a world authority in this sphere, at the invitation of the Government has been most valuable, and his comprehensive report provides a sound basis for future development in this direction.

An increased eagerness to be kept informed of all research development is a characteristic of the times. Both the tempo of research progress and its application has markedly increased. There is also a very real need to keep the public abreast of all research advances so that steps are taken to make the many social and economic adjustments that are requisite with the march of progress. The Information Bureau has strengthened these aspects of its activities, bearing in mind the important implications of the need for disseminating only sound and proved conclusions.

The Commonwealth and international aspects of science and research have increased in importance in recent years, and this has been met by the maintenance of scientific liaison staff overseas, by making provision for the staffs of various branches to attend overseas scientific conferences and to engage in special courses of study in order to keep up to date in their knowledge.

The Department has continued to bring to every branch of industry and State activity that assistance which the wide ramifications of science to-day makes available, in the belief that in the proper utilization of this new knowledge lies the soundest means of assuring promotion of the national welfare.

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