

The most outstanding developments during the year were the successful reorganization of plant research under the Plant Research Bureau, and the steps taken to establish an animal Research Bureau; the establishment of the Standards Institute and the Social Science Research Bureau; and the development of Research Associations in connection with the tobacco, wool-manufacturing, and footwear-manufacturing industries.

The Industrial Efficiency Act which was passed during the year provided that the Bureau of Industry established to administer the Act should, through the medium of the Department of Scientific and Industrial Research, collaborate with any research or other organization established in New Zealand or elsewhere and arrange for the publication and distribution of appropriate information among persons or organizations concerned, with the object of increasing the general standard of industrial efficiency in New Zealand. The Department's services have already been largely utilized in this connection, and it is anticipated that as the Act is more widely applied the demand for scientific services will be correspondingly greater.

A feature of the staff appointments made recently has been the obtaining of the services of a number of New Zealand science graduates who had migrated overseas. Some six have recently been appointed in this way, and incidentally it is interesting to note that there are two New Zealand ex-Rhodes scholars on the staff. Another feature has been the appointment of women graduates, there being six now employed in the Department.

The work of Head Office has been made more difficult during the year owing to the absence through unfortunate illness of the Dominion Analyst, also the necessity of sending one of the professional officers to England on account of the ill health of the Scientific Liaison Officer and his increased duties as Chairman of the Executive Council of the Imperial Agricultural Bureaux.

The loyal co-operation of the staff in successfully carrying out the year's programme of work and in adapting themselves to increased demands on their energies is gratefully acknowledged.

DOMINION LABORATORY.

Mainly owing to a number of special investigations being undertaken, there has again been a considerable increase in the amount of work carried out by the Dominion Laboratory, making a further increase in staff necessary.

During the year a laboratory has been fitted up for the chemical and related work required in connection with a comprehensive survey of the coal resources of the Dominion.

Experimental work on the gas storage of apples and the curing of lemons has entailed the setting-up and operating of complicated large-scale apparatus.

Probably the most noteworthy advance during the year was the installation of a Hilger automatic large quartz spectrograph. This has enabled the laboratory to avail itself of one of the greatest recent advances in connection with methods for detecting and estimating trace elements in various materials such as soils, mineral waters, alloys, &c.

The general work of the Laboratory consists of examination of many and diverse types of material for various Government Departments.

Increasing use is being made of the Laboratory by purchasing Departments to ascertain if supplies comply with specifications. A considerable amount of testing has already been carried out for the newly established Housing Department.

Large numbers of exhibits were examined for the Police Department at the Main Laboratory and the three branches, and this phase of the Laboratories' activities is also increasing.

For the Department of Health numerous samples of milk and other foods were examined to ascertain if they complied with the requirements of the Sale of Food and Drugs Act, and samples from existing and projected water-supplies were analysed.

It is satisfactory to record that on the whole the milk supplies of the Dominion are very satisfactory both as regards food value and cleanliness. With other foods also the results of analyses show that there is little wilful adulteration practised in New Zealand.

During the year investigations on deposits of bentonite, pozzolanic materials, clays, and diatomite were continued, and various other materials were analysed for the Geological Survey Branch, while clay fractions from large numbers of soils were examined for the Soil Survey Division. Analyses of waters and gases from the thermal regions were also made.

Two officers have been detailed for work dealing exclusively with general technological problems of industry. Numerous industrial questions have been dealt with, including flax pulping, process control methods at the Foxton woolpack factory, and testing of producer gas.

The library has as far as possible been kept up to date in all phases of general chemistry and chemical technology, and the staff therefore is able to keep abreast of latest advances.

Mr. Grigg, Government Analyst, Christchurch, recently visited Great Britain, France, and Germany, particularly with a view to investigating the latest practice in connection with toxicology, food and drug analysis and the examination of water supplies and sewage and gained much useful information.

METEOROLOGICAL BRANCH.

The development of commercial air transport, and particularly the prospect of the early development of trans-ocean lines, has required a rapid expansion of the meteorological services. The Director's report calls attention to the difficulties associated with the securing of personnel with the necessary qualifications. The shortage of meteorologists is being felt in almost all countries, and the additional staff has had to be recruited from students with a general training only in mathematics and physics. It will be some years before the new staff can reach full efficiency. In the meantime much of the work must be of a somewhat superficial character, and attention has been concentrated on the more immediate needs of the moment. A meteorologist now requires a long and highly specialized training, and it would be of great advantage if this could be provided at one of the University colleges.