REPORTS OF RESEARCH COMMITTEES OF THE COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

BUILDING RESEARCH

Research investigations relating to building problems have been carried out by officers of the Dominion Laboratory, the Dominion Physical Laboratory, and the Plant Diseases Division. Consideration has been given to the problem of testing the fire resistance of materials and structures. This work has been undertaken following the report of the Royal Commission on the fire of Messrs. J. Ballantyne's premises, Christchurch, and at the request of the Standards Institute. No agreement has yet been obtained regarding the appointment of a Director of Building Research and the establishment of an organization along the lines recommended by Sir Reginald Stradling. It is hoped to make an appointment in the ensuing year. Such an appointment is essential in order that a more positive approach can be made to the problems which are arising.

DOMINION LABORATORY

This work included the analysis of 246 samples of paint for compliance with specifications, an extensive series of outdoor exposures of paints on test fences in widely separated parts of the country, laboratory accelerated weathering tests of paints, an extensive investigation of the incidence of and causes for the failure of paint on some houses, and many other investigations related to paint. Assistance in the preparation of a new standard specification for ready-mixed paints for outside use was given to the New Zealand Standards Institute. Much work was done on improved methods of analysis of paint pigments.

Concrete roofing-tiles were examined for Government Departments and for tile-manufacturers with respect to mechanical strength, water absorption, and grading of the aggregate. A report was prepared on the colouring of concrete tiles.

In conjunction with the Chemical Engineering Section, an investigation was carried out into the methods of manufacture of clay roofing-tiles. As a result, recommendations were made which provided improved methods of manufacture and reduction in production losses.

Investigations have been carried out on the use of concrete in dams. These have included analyses of concrete taken from dams which showed signs of deterioration and the testing of lake waters in the South Island to determine what effect they would have on concrete dams and steel structures.

The Minerals Section started investigation of an American test that may enable predictions to be made of the behaviour of rocks used as aggregates in concrete. Possible pozzolanic materials for use in concrete were investigated by the conductivity method of Lea.

In connection with corrosion problems, the amount of carbon dioxide in natural waters was investigated. The results will be made available in an information circular.

Two members of the staff gave scientific evidence before the Royal Commission inquiring into the fire at Messrs. J. Ballantyne's premises.

The *Paint Review* was published at two-monthly intervals. It serves to keep practical painters informed of scientific advances in paint materials and methods.

DOMINION PHYSICAL LABORATORY

Physical Properties of Pinus radiata.—A quantity of *Pinus radiata* of three different structural sizes selected and graded in the normal manner was supplied from the State Forest Mill, Rotorua. The timber was stacked for normal air drying, and will shortly be ready for test. The data obtained will be referred to the New Zealand Standards Institute for incorporation in a building code.

Rock from Cobb River, Roxburgh, and Atiamuri Hydro Sites.—Various mechanical properties of foundation rock from the above dam-sites have been measured for the Ministry of Works.