Plant Diseases Division, Plant Research Bureau

Decay in Timber in Tunnels.—Rapid decay was noted in timbering of the Albert Park tunnels, caused by various species of fungi. Cultures of these have been sent abroad for identification.

Timber Insects.—Further work has been carried out to ascertain the suitability of *Anobium punctatum* (common house borer) as an insect for testing timber therapeutants. Optimum conditions for breeding the insect in large numbers were ascertained. In the course of this work some eight thousand five hundred beetles were collected and confined in breeding-cages for study of details of life-cycle, &c. Tests of several synthetic types of wall-board were made to ascertain if they were immune to infestation by several common timber-infesting insects. All were found to be susceptible to attack under conditions of the tests employed.

State Advances Corporation

The State Advances Corporation has continued its work on field investigations of timber-infesting insects and fungi, the field application of termite control, and the field application of wood-preservatives.

Termite Control.—Under the Termites Act, 1940, the application of chemical measures to control foreign termites is the responsibility of the State Advances Corporation. As mentioned in the last annual report, the work, while being carried out by the Corporation, takes full advantage of the research which is being undertaken by the Entomology Division, and close co-operation is maintained both with the Entomology Division and Plant Diseases Division. The new methods of applying arsenic dust previously mentioned have proved largely successful. The most difficult infestations to control are those which are connected with transmission or other poles. The termites use the deep checks in the poles for their runways, and it is difficult at times to make a satisfactory application of arsenic dust. It also appears evident that poles are liable to become reinfested more readily than other timbers. It can be stated that the termite situation as a whole is being dealt with satisfactorily and is steadily coming under control. No further infestations have been reported from the Gisborne district, and there is every reason to expect that the infestation is localized.

Native Termites.—In co-operation with the Entomology Division, the work on biology and control of native termites is proceeding. The incidence of these insects is still high, and the modification of the control specification mentioned in the previous report will be adopted. Generally speaking, it has been found necessary where native termites are present in the foundation of houses to carry out a programme of reblocking—*i.e.*, replacing the infested wooden blocks by concrete.

Fungi.—The Corporation continued to collect information concerning the incidence of various fungi infecting house timbers. The question of moulds attacking lining-boards, which is a major house problem, is being dealt with by a special sub-committee of the Building Research Committee, and the results achieved are reported below.

Wood-preservation.—During the past year specimens of the more important native and exotic timbers were forwarded to the Forest Products Laboratory, Princes Risborough, England, for pressure impregnation tests with a water-soluble wood-preservative. The results of these tests are as follows:—

Name of Timber.	Heartwood.	Sapwood.
Rimu	Resistant	Permeable.
Matai	,,	,,
Totara	Very resistant	,,
Tawa	Not sent	,,
Red-beech (*Nothofagus fusca*)	Impermeable	Resistant.
Silver-beech (*Nothofagus menziesii*)	,,	Moderately resistant.
Pinus ponderosa	Permeable	Permeable.
Pinus radiata	Moderately permeable	,,
Douglas fir	Very resistant	Moderately resistant.

Further work with water-soluble wood-preservatives is proceeding.

MOULD IN HOUSES

Mould in Houses Research Committee.—Mr. L. E. Brooker (Chairman), Dr. G. H. Cunningham, Dr. E. R. Cooper, Mr. A. S. Mitchell, Mr. L. R. L. Dunn, Mr. A. F. Clark (Secretary).

This Committee was set up to direct and co-ordinate research to discover a means of combating the damage done by mould growths on the interior walls of houses. This had become a serious problem to Government Departments owning or controlling houses and also in privately-owned houses. It was decided to undertake research along the following lines:—

(1) To discover a method of preventing mould growth by the application of chemical therapeutants. (Plant Diseases Division of the Plant Research Bureau):

(2) To study (*a*) The physical properties of various lining-materials and structural units under accurately-controlled conditions of humidity and temperature; (*b*) the temperature and humidity conditions which favour mould growth under living-conditions in houses. The purpose of this work is to discover what structural modifications would be necessary to prevent excessive condensation of moisture on or within the wall surface (Dominion Physical Laboratory).

The following report of the Plant Diseases Division shows that the problem of controlling mould growth has been solved by the application of 2 per cent. of sodium pentachlor-phenate to the materials used in finishing the wall surfaces.