

ENTOMOLOGY DIVISION, PLANT RESEARCH BUREAU

Termite Research.—Apart from the routine identification of termites, a detailed study as an adjunct to control has been made of the Australian and native termites in New Zealand with the object of securing reliable data upon which to identify the different castes of all the species. This has involved the examination of many hundreds of individual insects and has given valuable results which have been embodied in a detailed report.

Work on the biology of the Australian termites has also been carried out and useful information secured on the habits of the insects. A commencement has been made to elucidate the habits and establishment in timbers of the native termites.

In connection with the above, surveys of termite establishments have been made and new foci recorded in Auckland and New Plymouth. Further Australian termites have been found well established in an area near Gisborne where a survey of the position was made.

PLANT DISEASES DIVISION, PLANT RESEARCH BUREAU

Work has been directed once again towards determining standardized methods for toxicity tests of products used to control fungous and insect damage to timber.

Testing of Fungicides.—Preliminary experiments have been undertaken to determine the species of fungi and the type of wood to be used in testing.

Testing of Insecticides.—The parasite which upset previous work on *Ambeodontus* has been overcome. The method, however, still needs further testing to ascertain the reliability of results. A concentrated effort to discover the optimum breeding-conditions for *Anobium* attack has been made this year. In all, a total of well over six thousand adult beetles have been handled, this number far exceeding any previous number. Results of the work will not be available for some months. Much time has been devoted to the testing of treated and untreated Pinex board with Australian subterranean and New Zealand drywood termites.

Testing of Therapeutants.—This side of the work, through shortage of staff, has been curtailed considerably. Work is still proceeding on a method to test the length of time a certain therapeutant will remain effective in the wood.

STATE ADVANCES CORPORATION

The State Advances Corporation has concentrated upon 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. The work, while being carried out by the Corporation, takes full advantage of research being undertaken by the Entomology Division, and close co-operation is maintained with both the Entomology Division and the Plant Diseases Division. The original technique for treating termites has been altered in two important respects. Field-work showed that in many cases where termite nests were removed in only a few was the queen captured; while laboratory work proved that, contrary to overseas' opinions, the queen could, if necessary, move long distances at a rapid pace. There is therefore the possibility that in a number of cases the queen escaped, and if circumstances were favourable it might be possible that she could establish a new colony. The removal of nests has therefore been abandoned, and a close watch is kept upon all areas from which nests have in the past been removed. A further modification of technique concerns the actual application of the arsenic dust. The original technique required that arsenic dust be blown into termite runways. It has now been found that owing to the ease with which termites abandon runways and the rapidity with which arsenic absorbs moisture and cakes, this method is unsatisfactory in some cases. A new technique which aims at dusting the insects themselves has been developed, and the indications are that it is proving very effective. Unfortunately the number of termite infestations in Auckland and New Plymouth has increased to over three hundred, but the results of termite control work are generally satisfactory. A small area of termite infestation has been located in the Gisborne district.

Native Termites.—The incidence of native termites, especially in Auckland, is still high, and in co-operation with the Entomology Division work has been done upon the biology of the insects. One of the most interesting and important points is the frequency with which queens and supplementary queens appear to be produced, and this explains the occurrence of so many small disconnected colonies. It has previously been mentioned that, in co-operation with a commercial concern, a new method of chemical control for native termites has been planned. This work has continued and the formulation of a definite specification has been possible. The specification requires work on an intensive scale, but the point has now been reached when sufficient jobs have been done to enable the effectiveness of the work to be determined and there is a possibility of modifying the specification.

Ambeodontus tristis.—This house long-horn beetle continues to engage the attention of the Corporation, and cases in which houses erected for only a few months yielding infested timber continue to occur. It is obvious that the timber is infested by the insect at the time it is first used for building purposes. In conjunction with the Plant Diseases Division, investigations are continuing.

Fungi.—Field information upon the incidence of wood-rotting fungi in houses, especially in relation to the type of house-construction involved, is still being obtained. The Timber Protection Research Committee was concerned to some extent with the problem of mould occurring on interior linings in State rental houses. This problem, however, was shown to be one involving factors other than mycological, and the investigation is now being dealt with by another organization.