found. As reported in Chapter VIII an Advisory Committee, including representatives of private exotic forest-owners, has been formed to study the problems presented by *Sirex* and its control.

38. *Mycology.*—There are three types of forest mycological research. First, study and control of parasitic fungi damaging or killing the trees—for example, the honey fungus (*Armillaria mellea*) which attack and kill *P. radiata*, *Nothofagus menziesii*, and other species. Attacks by *Armillaria* frequently coincide with attacks by *Sirex* on pine and the *Buprestid* on beech, and its successful attack probably arises *from the same causes*. Species of *Tyteria* cause considerable damage to *Nothofagus menziesii*. They are being studied with the object of devising a silvicultural system which will lessen or eliminate the damage. Other parasitic fungi being studied are *Diploidia pinea*, *Phomopsis strobi*, and *Dasyscyphy calydiformin;* all attack insignis pine as well as the unnamed fungus which enters trees with the eggs of *Sirex*, and which is the actual lethal factor of the attack.

The second subdivision of the work is the study of fungi causing sap-stain of timber during seasoning, heart rot of living trees, and decay of timber in use. The third subdivision is the study of beneficial fungi, particularly those associated with the formation of mycorrhiza in forest trees. It has long been known that without a suitable symbiotic fungus forest trees would fail to maintain healthy growth, and it is, therefore, necessary to study these fungi and make sure that the particular fungus is prevalent which is most suited to a particular tree in any given site. Fungi which attack insects are generally beneficial and are being studied as opportunity offers. The projects at present in operation include the study of fungi associated with *P. radiata*, *Nothofagus menziesii*, *Agathis australis*, and *Beilschmiedia tawa*. These projects include fungi, whether saprophytic, parasitic, or symbiotic, and in conjunction with similar entomological projects will eventually be duplicated to include all important forest-tree species. Routine mycological work includes the maintenance of an herbarium of stock culture and proportion and distribution of information to foresters.

National Forest Survey

39. *Progress.*—Field-work was carried out under the national forest survey in the Coromandel, East Coast, Taranaki, Westland, and Reefton areas, approximately 400,000 acres being covered during the year. Seventy per cent. of this area was located in Coromandel and Westland in equal proportions. In Westland the main timber stands lying between the Taramakau and the Haast Rivers have been practically completed, the only remaining areas being marginal hill country carrying no timber. Work in the Westland area, however, did not progress as fast as was desired due to many staff changes and the necessity for training replacements. In Coromandel the field-work for the unit was completed, the whole area from Cape Colville to the Waikino Gorge being completed. A new area was commenced in the Taramakau-Buller locality with headquarters at Reefton. This unit covers some of the best beech forest in the northern half of the South Island and an investigation into its potential is important. It will form the major part of the work during 1950–51. The project also covered an area in Waikaremoana-Hangaroa (East Coast, North Island) a little-known forested area containing a belt of millable timber to the east. In Taranaki the area covered was mainly steep bush country carrying a low volume per acre of doubtful merchantability. The total area covered by the project calculated proportionately from the sampling pattern is now over 2,000,000 acres (Appendix IX). This figure may prove to be an underestimate as certain areas have been typed and described in the field but contain very few plots.