

## PHYSIOLOGY

Work has continued on artificial freezing of apricot buds and blossom. Last season's results were partially confirmed, and it was demonstrated that at critical temperatures the percentage of wet blossoms killed was much higher than that of dry. Measurements of inversion ceilings, development of frost alarms, and tests of fans against Auckland winter frost were continued by the Dominion Physical Laboratory and the Auckland Industrial Development Laboratories.

Preliminary trials with chemical thinning and new wound dressings were made. These are sufficiently promising to warrant extension.

There are strong indications that green-crinkle of apples is caused by a virus, and extended trials to clear up this point are in progress.

## STORAGE

Small-scale tests with refrigerated gas storage of Granny Smith apples over two seasons indicate that the most satisfactory storage conditions are within the following limits: carbon dioxide, 6 per cent., oxygen 5 per cent. to 10 per cent.; temperature, 38° F. to 39° F. A preliminary trial with Chinese gooseberries showed that these could be held for six weeks at 31° F. to 32° F. without detrimental softening. Effects of manurial treatment on storage quality of apples were similar to those reported in previous years. There were marked differences between varieties, but, in general, applications to trees of nitrogen alone caused a deterioration in storage quality of the fruit, while a combination of nitrogen, phosphate, and potash gave a quality comparable with that of untreated fruit.

## MANURIAL TRIALS

Long-term trials at Appleby again showed that a combination of nitrogen, phosphate, and potash gave greater production than any of the materials applied singly. Differences between varieties noted in previous reports were maintained.

## MISCELLANEOUS

An acetylene-operated mechanical bird-scarer was imported and tested in a cherry orchard. When combined with shooting it appears to offer practical assistance with the bird problem, and trials will be continued.

(See also Cawthron Institute research.)

## GEOLOGICAL SURVEY

Director: Mr. M. OXLEY

The staff of the Geological Survey was strengthened by the appointment of young geologists, some of whom came from overseas. The sudden death, however, of Mr. E. O. Macpherson created a most serious gap in the senior staff, for this officer had a wealth of knowledge of the minerals of New Zealand. A regional office, covering the Auckland and North Auckland area, was established under the control of a superintending geologist. A district office was opened at Napier.

The field-work in the Kaikoura Subdivision was completed. Further field-work has been done in the North Auckland, Rotorua, Napier, Canterbury, and Southland areas; a preliminary geological survey was made of a portion of the Waipapa Dam site; and the Atiamuri Dam site was mapped in detail.

A member of the staff accompanied the Otago School of Mines Expedition to Stewart Island to report on possible economic minerals. A full report has not yet been made.