Cox's Orange.—(*a*) The vegetative response to nitrogen is now becoming evident even on the big trees that are in a relatively favourable environment on the lower slopes. Untreated trees are beginning to show the effect of their continued starvation by a diminution of vigour.

(*b*) Inclusion of potash in the manurial programme has minimized the incidence of "die-back," or, more strictly, sour-sap, which appeared in many trees following the wet winter and spring of 1934. Potash-treated trees have since made almost complete recovery.

(*c*) Fruit from trees under heavy potash treatment developed more bitter-pit in storage, but until the evidence of subsequent years is available significance is not attached to the result.

(*d*) Even in a year of high yield the use of a nitrogen dressing as heavy as 3 lb. per tree may adversely affect the storage-quality of the fruit. This would appear to take place when marked growth stimulus has been produced.

Dunn's Favourite.—(*a*) The response to nitrogen can now be seen even on the initially vigorous trees.

(*b*) There has been an indication of a small decrease in the amount of skin-cracking by increase of the nitrogen application to 4 lb. per tree, but emphasis is not yet placed on this result.

(*c*) Ammonium sulphate at the rate of 4 lb. per tree gave rise to an increase in the susceptibility to storage bitter-pit, to skin mottling, and particularly to fungous disease. In the year of heavy crop, breakdown-susceptibility was not appreciably increased by this high nitrogen level. Over a short storage period of two months no unfavourable character was noted in the fruit from the 4 lb. plots; in this respect there is a marked difference between the "on" and the "off" years.

Jonathan.—(*a*) The progressive growth responses induced by 2 lb. and 4 lb. ammonium sulphate were practically levelled out by the heavy crop of the 1934 season, but, on the other hand, definite crop-increases were secured.

(*b*) The colour-grading of the fruit was not excessively depreciated by the 2 lb. rate of application of nitrogen, but was by the 4 lb. rate.

(*c*) Fruit of the heavy crop kept almost entirely free from breakdown in storage, irrespective of treatment. There was some incidence of Jonathan-spot, and this was more severe on the fruit from trees receiving high rate of nitrogen application.

(*d*) Fruit from trees receiving a heavy potash application kept greener and firmer in cold storage than the no-potash control fruit.

Delicious.—(*a*) The growth-response to nitrogen remains the chief feature of the tests on this variety.

(*b*) Storage-quality of the fruit continues to be unaffected by any of the treatments.

Sturmer.—(*a*) Trees under complete treatment are now in better condition than any of those under partial treatments.

(*b*) With complete treatment and, to a less extent, with phosphate and nitrogen significant crop-increases have been secured.

(*c*) Fruit from complete-treated plots has, like untreated fruit, kept almost free from breakdown in storage.

(*d*) As with Dunn's, there was more skin-mottling where nitrogen was included in the treatment.

Spraying-experiments.

Expenditure on this work has been very light this season as only oil-sprays for red-mite control have been carried out during the year. The plot of eighty-eight Delicious trees set apart for the black-spot investigations by Dr. K. M. Curtis, Mycologist to the Cawthron Institute, were again reserved for the continuation of this work and assistance rendered in connection with the spraying of the trees and treatment of the ground-surface.

Grafting-experiments.

Three trees of Sturmers were grafted over to Dunn's in the spring of the year for observational purposes on the refurnishing system, and have made satisfactory growth. Several trees which were grafted over in the 1932 season to Delicious and Cox's Orange have been left with leaders unpruned for comparison with others pruned in the orthodox manner, and have been an object of interest to visiting orchardists.

Testing of Varieties.

(*a*) *Crimson Cox's Orange.*—This variety was obtained from England by the Department of Agriculture and planted on the Research Orchard. The fruit has been under observation for three seasons, but so far its quality and appearance does not justify its inclusion in the list of recommendations for future planting or reworking on established trees.

(*b*) *Granny Smith.*—Scions of this variety procured from Victoria were grafted on to a Northern Spy tree at the Research Orchard for comparison with other trees of this variety growing in the district. So far there appears to be no difference in growth or appearance of the fruit. The apples so far produced on this tree are very subject to bitter-pit.

(*c*) *Hazel Nuts.*—Fourteen trees of variety *Corylus maxima* were planted in 1933 season for testing-purposes. Several of these have died out and others have made poor growth. The land is probably quite unsuitable for nuts, and failure to succeed here is no doubt due to this cause.

(*d*) *Pear-tree* (Pyrus calleryana).—A tree of this variety was planted this season for testing-purposes and has satisfactorily established and making fair progress.