Although of necessity over the past few years the emphasis has been on the place of chemical weed-killers in the control of weeds, future experimental work will have a more balanced approach to the subject. Chemical methods of control will be examined in relation to other more important methods of controlling weeds such as plant competition, cultivation, and clean farming practices generally.

An interesting new development is the use of the hormone-type material 2, 4, 5-T (2, 4, 5-Trichlorophenoxyacetic acid) in the control of woody plants and especially of blackberry and gorse. Although the evidence is as yet by no means conclusive, this chemical is probably the most promising material yet discovered for the control of scrubby growth in general. Most plants of this nature are resistant to the commonly used weed-killers of the 2, 4-D (2, 4-Dichlorophenoxyacetic acid) type.

Yield trials on cereal crops have on one or two occasions shown marked yield responses from the application of hormone-type weed-killers, but in other instances no effect was measured. At the time of spraying it is most difficult to decide whether the weeds present will offer serious competition to the crop, and little or no benefit will result from the application of weed-killers unless the competition from weeds for light or moisture is a serious factor in crop growth. Much more experimental evidence is required to give reliable advice concerning the advisability of treating crops in a great many instances.

The susceptibility of economic crop plants to damage from weed-killers and the circumstances under which such damage may be severe have been studied in a limited way in crop-tolerance trials, but more work of this nature is planned. Certain crops, particularly grapes and tomatoes, are extremely sensitive to minute traces of hormone-type materials, and others such as turnips, rape, and chou moellier are damaged by small quantities. The greatest care must be taken if hormone-type weed-killers are applied in the vicinity of such susceptible crops. The development and use of non-volatile forms of the weed-killers and a better appreciation of the circumstances under which damage to crop plants can occur should greatly reduce the number of complaints of crop damage from these chemicals.

Blind-seed Disease of Rye-grass.—Experimental work with fungicide dusts and sprays and heavy top-dressings of sulphate of ammonia have not yielded any practical means of controlling this disease. The breeding of a resistant strain of rye-grass appears to be the most promising method of reducing the losses caused by this disease.

Control of Insect Pests.—Field trials have been conducted against important pasture pests, especially grass-grub (*Odontria zealandica*), using the basic chemicals D.D.T. and "Gammexane." Although the adult grass-grub beetle has been found to be readily killed by D.D.T., only limited success has been attained with treatments aimed at killing the grub or the beetle as it emerges from the soil by applications of insecticides to the pasture.

Abnormal Growths from Clover Seeds.—Investigations have been commenced of the factors causing high percentages of red and white clover seed giving abnormal growths when submitted to germination tests, but no conclusive results are as yet available from this work.

Survey of Wheat-growing Practices.—Investigations were carried out on wheat crops in the areas near Christchurch and Ashburton as in previous years. In the Christchurch area the most outstanding factor in influencing yield was the previous rotational history of the field. The highest yields came from crops which followed either peas, a fallow, or a fed-off crop when these are in cropping rotation. In the Ashburton area the most important factor causing differences in yield was soil type, there being two distinct series of soils of different fertility. The previous rotational history was not as important, but there was a noticeable superiority in yield of crops in a grass-peas-wheat rotation over those in a grass-grass-wheat rotation. The average yield of crops in the Christchurch survey area was 40·4 bushels per acre and in the Ashburton survey area 39·7 bushels per acre.