

summer, has been obtained by a spray application in April-May of light rates of several hormone weedkillers. Winter spraying of thistles has been unsuccessful, but September spraying has controlled the thistles on most occasions".

The recommendations were to apply  $\frac{1}{2}$  lb of MCPA, MCPB, or the amine salt of 2,4-D to seedling thistles, preferably in April or September. MCPB should be used where there were young clover plants, but this material was less effective during cold weather. If there were thistles in the rosette stage, the rate of application should be increased to nearer to 1 lb per acre. More mature plants could not be controlled with light rates of hormone weedkiller.

### Sweet Brier

The paper on sweet brier presented by A. R. Dingwall, J. G. Richards, and R. C. Schofield was of particular interest to South Islanders. The authors stated that the encroachment of sweet brier "has been much more marked in the South than in the North Island, and especially so in the favoured environments of open tussock grasslands east of the Main Divide. Today it occurs in all South Island counties and is viewed with concern in many inland parts of Marlborough, Canterbury, Otago, and Southland. The Rabbit Destruction Council's successful 'killer' policy removed a significant form of biological control and has been partly responsible indirectly for the brier's conspicuous advancement in recent times, but sweet brier has also gained ground in areas where rabbits have never been a problem".

The authors outlined the effects of various methods which have been used to control sweet brier, both in practice and experimentally — grazing by animals, burning, cutting, grubbing, coverage or basal spraying with hormones, and dust or pellet basal applications of urea chemicals such as fenuron.

Their recommendations were that "landowners faced with the seriousness of this problem would be well advised to take immediate action. . . . Where improvable grassland is threatened by invasion oversow and topdress or otherwise improve competitive ground cover and grazing control. Maintain constant vigilance and grub out any brier seedlings immediately they appear. If brier is already invading, with seedling and scattered small plants apparent, preferably grub or alternatively 'spot' spray with 2,4,5-T-diesel oil mixture. Follow up wherever possible by improving ground cover and controlled grazing.

"Where scattered plants have grown beyond the convenient grubbing stage remove by mechanical pulling or by basal treatment with either 2,4,5-T spray or fenuron pellets, whichever is the more convenient.



J. N. Fitzgerald (left), president at the Conference, and L. J. Matthews, secretary.

"When infestations are already firmly established on a relatively large scale and individual plants are readily accessible to treatment, spray basally with the 2,4,5-T-diesel oil mixture. Under similar circumstances, but where plants tend to form individual thickets rather than distinct and separate crowns, use fenuron pellets in preference to basal spraying. Surface trash that interferes with basal treatments should be removed by grazing or burning before chemical control is attempted.

"Where infestations are strongly established and difficult to penetrate either burn off or open up the area with a light spray of 2,4,5-T applied aerially in summer. Follow up with winter basal spray or spring pellet dressing according to the general nature of the brier plants concerned. In waste places that are accessible or when dealing with exceptionally large plants or thickets bulldozing or mechanical rooting and subsequent chemical treatment of any reviving plants would be appropriate.

"For rugged, inaccessible areas where aerial application is the only feasible method of attack fenuron pellets could be used. Seed dispersal from these difficult areas could be prevented by a midsummer application of 2,4,5-T in fuel oil, applied aerially, every second or third year."

### Crop Weeds

The results of experimental work on weeds in peas and maize were given by T. M. Patterson. In pea trials MCA at 15 lb per acre gave control of weeds except fathen and grasses. A mixture of MCA at 10 lb and MCPB at  $\frac{1}{2}$  lb per acre did not damage the peas and gave better weed control than either MCA alone at 15 lb, or MCPB at 1 lb.

In the maize trials simazine gave excellent weed control. In one trial simazine plots gave a yield of 141 bushels of dry shelled maize per

acre, compared with 64 bushels on the unsprayed plots. The weed control obtained with 2,4-D, though good, was inferior to that obtained with simazine, and the yield was 133 bushels. The higher yield obtained with simazine than with 2,4-D was not sufficient to warrant the additional cost of the simazine. Further trials will be conducted with lower rates of some of the newer chemicals related to simazine, which should be more toxic to the grass weeds which resist 2,4-D.

In a paper on the control of weeds in brassica crops M. S. Foreman discussed the differences between the methods used in the North and South Islands. Post-emergent applications of MCA gave good control of willow weed (*Polygonum persicaria*) and Prince of Wales feathers or redroot (*Amaranthus retroflexus*), which were the main weeds in the North. However, in the South Island, MCA was unsatisfactory where spurrey (known as yarr in the South) and fathen were troublesome.

Of the pre-emergent treatments CIPC was the most promising, and it "can play a valuable part in the control of spurrey and many other weeds in the South Island; where band spraying is possible the control of fathen does seem within reach". However, CIPC was not recommended in the North Island, where owing to the higher soil temperatures it caused too much crop damage.

### Ratstail

The paper prepared by D. A. Newman described recent work on control of ratstail with dalapon. Trials at Paeroa, Pukekohe, and Dargaville showed that very good kills of ratstail were obtained with low rates of dalapon without causing too much damage to the better pastures species such as ryegrass and clovers. It was stressed that it was important to follow up by promoting a quick ground cover of good pasture and forming a tight