PRESIDENTIAL ADDRESS

WEEDS have plagued the farmer ever since he came to New Zealand and found it infested with plants he considered useless or of little value. These included not only fern and manuka (*Leptospermum scoparium*), but also our bush and timber trees. He proceeded to replace these with pastures and crops, but in doing so introduced weeds from Europe which have upset him ever since. He also introduced some weed plants purposely. It is well known that gorse (*Ulex europaeus*) was introduced as a hedge plant and for sheep feed and blackberries (*Rubus* spp.) formed a hedge which also produced very nice fruit. In some areas there was little alternative but to plant live hedges. The farmers of Canterbury had no timber for fences and gorse on sod walls was the easiest method of fencing. One wonders, however, what reason can be given for the introduction of a worse weed than gorse, namely broom (*Cytisus* spp.).

The amount of labour on New Zealand farms being much lower per 100 acres than in Europe, weeds have become a much graver problem. Also it is said that under our favourable climate weeds grow much faster than in their native homes. This belief is justifiable in view of the noted growth of exotic timber in this country and the better growth of crops. This difficult position with weeds has alarmed farmers exceedingly.

One of the most important functions of the Department of Agriculture from 1900 onward was the control of weeds. Inspectors were appointed and these were empowered by Act to go on to all properties and inspect them for noxious weeds and order the farmer to destroy them or prevent them from seeding. This arose out of the fear of the good farmer that his clean land might become infested from weed seeds spreading over the boundary line of the dirty farmer next door.

In my opinion the Noxious Weeds Act, however, largely did not achieve its purpose. We did not then have the means at our disposal that we have today to control weeds and what progress was made through the Act was largely counterbalanced by useless work which farmers had to do to comply with the Act. I can recall 37 years ago the fortnight of work that one farmer and his considerable family had to perform every summer in lopping off by hand the Californian thistle (*Cirsium arvense*) heads on his run-off swamp property near Geraldine in South Canterbury. He called it his holiday, but it was work of little value in the control of Californian thistle and would have been better devoted to better control of broom and gorse on his home farm.

I can also recall in the 30s inspecting and reporting unfavourably on the work of ragwort eradication in the Hunua district of Franklin County carried out by unemployed with State money; largely useless work pulling out some of the ragwort plants from areas of derelict land in scrub. There are still people today who believe that to destroy a weed all you have to do is declare it a noxious weed.

I hope today that our approach to weed control is becoming more practical and the cost of the work is being weighed up better against results achieved. And now that we have better means at our disposal, the work of inspectors should now be much more efficient than it was. Our inspectors today have to be men of much knowledge, fully conversant with farm management and chemical means of weed control and it is encouraging to see the continued interest in this Conference of many of them. They should all be here.

What weed control has been achieved in this country has been brought about when it paid to get rid of the worthless or almost worthless weeds and replace them with pasture of high production. Until it paid to do this the weeds were left alone unless they were hacked at or topped with very little effect because of the Noxious Weeds Act. One noxious weed inspector of the Department of Agriculture on his first appointment enthusiastically went round the district inspecting the farms for weeds and issuing notices to destroy gorse. There was plenty of gorse about because it was an important provider of sheep feed on the poor hills then economically not capable of further development. He was directed to go round again because nothing had been done to the gorse after his first visit. He then expected action and some prosecutions but he was directed to go back a third time. This, however, was too much for him and on this occasion he rested under one of the gorse bushes. At that time on those poor hills gorse was an asset, because it increased the carrying capacity of sheep. The position has changed today because research has revealed better and probably quite economical methods of development and better and easier methods of gorse control.

With the introduction of cheaper and more potent weedicides the New Zealand farmer is in a much stronger position to contend with weeds. Weeds have won back from the farmer millions of acres of land and more were going back each year. With more money in his pocket from better returns for his wool and meat and with the introduction of more potent weedicides, the New Zealand farmer is in a much stronger position than he was to contend with weeds.

Wonderful products have been prepared and are being marketed in this country and new materials with new attributes keep coming forward. Who would have thought that we could have such a weedicide as 2,4,5-T which will kill gorse and other woody shrubs, that we would have a material which would kill grasses and not clovers and at varying rates could be used to kill generally the poorer grasses and leave the better ones to live and grow and give rise to the possibility of chemical ploughing of our hill country. It may prove to be practically our only chance of getting better grasses up in the hills as we make a place for them by aeroplane topdressing and clover introduction from seed. Who would have thought that we could produce a material which would remove from newly sown grass all manner of seedling weeds—docks (*Rumex* spp.), buttercups (*Ranunculus* spp.), thistles, and other weeds and leave the young clovers and

grasses to live and grow. Who would have thought that we could have a weedicide which will kill or knock down *Amaranthus* spp. or Prince of Wales feather and its companion in crime, willow weed (*Polygonum persicaria*), in growing crops of the turnip family, and you can do a good job too if the crop is already being smothered by one or both of these weeds, the greatest menace to crops of South Auckland. Who would have thought that a weedicide combination could be used to destroy weeds in ditches and canals much more cheaply than machine or hand labour and reduce the need for the latter to one year in three or four to deal with the spoil. Who would have thought that we could destroy tall fescue (*Festuca arundinacea*), ratstail (*Sporobolus capensis*) and barley grass (*Hordeum murinum*). One could go on in this way for a considerable time enumerating the new weed-killers at our disposal and next year we will have one or two more to try out and exploit.

But these new discoveries are not being used to the extent that they could be. Despite the discovery in the case of control of buttercup (1 lb of dust per acre will do the job) there are still many hundreds of acres of land a blaze of golden yellow every spring. On the other hand there are at times some useless treatments given to weeds that should be combated by other means. Gorse has been sprayed that should have first been burnt, fenced up, and stocked heavily with dry sheep; blackberry has been sprayed that should be cultivated and sown down or harrowed or grazed with goats and sheep. One should never forget what good farming practices can do and weed control today may include a combination of both chemical means and farm practices. I am convinced that with both we can do almost anything.

Some weedkillers are cheap enough for practical use, but with others the barrier is still the financial one. One way to reduce this is greater use and thereby greater turnover for the merchant. This story, however, is getting something like the chicken and the egg. Which comes first? Before we can get greater use the price of the weedkiller has to be reduced. I believe that one of the chief barriers to chemical ploughing particularly for crops is cost of the weedicides. Very few acres will be tackled until the cost of these comes down. If it could be reduced materially, many thousands of acres may be chemically ploughed for crops and grass renewal. On the other hand the same materials can now be used economically for control of weeds in drains. Perhaps the increased use in drains will result in the lowering in price so that these chemicals in turn can be used economically for chemical ploughing.

I am certain that the sales of chemical weedicides in future will be many times what they are today. As farmers become more aware of their beneficial uses and value and as more products come forward, their use will continue to grow and render further assistance to New Zealand agriculture.

Finally, I would like to say that the know-how of weed control is the most important thing and that is why this Conference meets each

year—a happy combination of all of those interested in weed control—the merchant, the weed inspector, and the investigator. If all of these have the know-how, weedicides will be used by the farmer much more efficiently and wisely and the almost futile efforts toward weed control that I have mentioned will not be made.

—J. E. BELL