WEEDS OF THE WANGANUI DISTRICT

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Summary

This paper deals with the most troublesome weeds in the Wanganui district, a district where expenditure on weed control represents a substantial cost on many farms. The weeds are discussed under the headings of (1) The three major weeds of hill country; (2) lesser weeds of hill country, and (3) weeds of flat country and cropping land. Sheep farming is by far the predominant system of farming in the area and the weeds are discussed in relation to the ways in which they affect the management of a sheep farm.

THE THREE MAJOR WEEDS OF HILL COUNTRY

THE THREE MAJOR weeds of hill country are manuka (*Leptospermum scoparium*), gorse (*Ulex europaeus*) and variegated thistle (*Silybum marianum*).

MANUKA

Manuka represents the greatest weed problem on second-class sandstone hill country where the stocking rates are relatively light and where the rainfall is 50 in. or more per annum. There is a large area of this sandstone soil in the back-country of the Patea, Waitotara and parts of the Wanganui and Rangitikei counties. On this country there is a constant demand on capital for scrub cutting and after this demand is met there is rarely sufficient money for adequate topdressing and subdivision which are the real weapons against manuka. Consequently there is a large tract of this country which has reverted to manuka and second growth. The cost of cutting the manuka is, in most cases, at least equal to the capital value of the land. A feature of the district's sandstone country is that it is interspersed with deep gorges and it is difficult to farm without fairly heavy cattle losses. Because of this, farmers carry less cattle than they would like to and this results in poorer pasture management which permits of quicker reversion to manuka than would otherwise be the case.

On the mudstone (papa) country stretching from the north-east of Wanganui to Taihape, manuka is present to a greater or lesser extent depending on the degree of management, the rainfall and the carrying capacity. Generally speaking the rainfall of this area approximates 40 in. Aerial topdressing and oversowing is improving the pasture to such an extent on this belt of country that reversion to manuka is almost non-existent. Another ten years should see the total disappearance of manuka because the fertility will be brought up to a level where it will be impossible for manuka to compete with the pasture.

GORSE

In the 1860's gorse was thought to be a useful plant because of its value in hedgerows in Britain and it was purchased by many Wanganui district farmers for that purpose. Its behaviour in the Wanganui district and other parts of New Zealand was, however, very different from its behaviour in Britain. It spread fairly rapidly on to pasture land and in 1900 it was put on the noxious weeds schedule. It has enjoyed the reputation of being the worst weed on the Wanganui coastal hill country and a strip of soft sandstone

country through to Hunterville ever since. In the days before hormone weedkillers, tracklaying tractors, and aeroplanes it was more than a man-sized job to clear a gorse farm. Even today, with bulldozers to put in tracks to facilitate getting water, equipment and labour on to the job, it is still a costly and long drawn out procedure to get rid of gorse.

Over the course of 70 or more years, there has been a high build-up of seed numbers in the ground and as this seed is exposed to the light by such means as the trampling of stock, surface slips or surface washing, it germinates and another gorse bush establishes. Because of this regular germination of seed year in and year out, follow-up work in areas cleared of gorse is a very important aspect of gorse eradication on any farm. There is always a tendency to concentrate on fresh areas of old man gorse before doing the annual maintenance work on the areas that already have been cleared. It is the maintenance work that should be given the first priority.

Gorse is particularly hard to eradicate on soft crumbly sandstone hill country because there is continual soil movement on this country and this exposes a fresh crop of seeds to the light and allows them to germinate. It is probable that this type of country will be used increasingly for forestry purposes because the Wanganui district is, in general, becoming a "timber starved" part of New Zealand.

Although there has not been any overall spectacular progress in getting rid of gorse in the Wanganui district over the last ten years there has, nevertheless, been steady progress and the number of farms that can be classified as virtually free from gorse are increasing.

VARIEGATED THISTLE

This weed is spread over a much wider range of country than gorse and is present to a greater or lesser extent on 350,000 acres of hill country. The factor that, in practice, makes it difficult to eradicate is the extremely long period that the seed is viable in the ground. This is associated with a heavy population of seeds in the ground in most localities. Typical areas of infestation are on the ridges of hill country and anywhere where the ground is bared by sheep camping. Good kills of variegated thistle are obtained by aerial spraying and by ground dusting or spraying, and although this treatment has been carried out methodically over eleven years there is still sufficient seed in the ground to provide another crop of thistle in the autumn, winter or spring period. Aerial spraying of variegated thistle on a large scale was first carried out in the 1952 season.

LESSER WEEDS OF HILL COUNTRY

Hard fern or ring fern (*Paesia scaberula*) is troublesome on the shady faces of hill country, particularly where the rainfall is above 50 in. annually. On a farm scale it is a difficult weed to eradicate because there is, as yet, no cheap and easy method of control for it. Pasture improvement and increased cattle numbers appear to be the most practical methods in limiting its spread.

Barley grass (*Hordeum murinum*) is invading the better class hill country where the carrying capacity has been built up through regular topdressing and subdivision. Its incidence is heaviest on the lighter rainfall country which dries out in the summer. An increasing number of farmers find it necessary to take control measures against it because it no longer confines itself to stock camps but spreads on to the general pasture.

In some areas, winged thistle (*Carduus tenuiflorus*) is troublesome on improved hill country, but because it is easy to control with chemicals it is not regarded seriously.

Stinking mayweed (*Anthemis cotula*) is another weed that favours the barley grass type of location on the ridges and stock camps of hill country. So far it is restricted to particular farms but on these farms it is quite prevalent and seems, if anything, to favour cattle camps.

Inkweed (*Phytolacca octandra*) has come into prominence in the last two or three years, more especially on farms that are being developed out of gorse. There appears to be quite a high seed population in the ground and when the gorse is burnt, inkweed readily establishes amongst the gorse regrowth.

Sweet briar (*Rosa rubiginosa*) has recently established to some extent on sunny faces particularly where the soil tends to be of a sandy nature and is a potentially dangerous weed on this type of location.

WEEDS OF FLAT COUNTRY AND CROPPING LAND

Californian thistle (*Cirsium arvense*) is troublesome on the free-draining volcanic loam soils of the district, in particular the Raetihi and Westmere-Waverley areas. In some years in the Raetihi area, Californian thistle occupies up to 50% of the pasture area in the summer.

Barley grass is present on most farms on the better class farming land of the coastal country, stretching from Waverley to Bulls. In the last 15 years it has increased appreciably on some farms whereas on others it has remained static or even decreased.

There is more ragwort (*Senecio jacobaea*) in the Waitotara and Patea counties than would appear at first sight because most of the land is grazed by sheep and sheep effectively keep it under control. Where there are no sheep, such as in scenic reserves and on dairy farms, ragwort control has to be carried out.

Pennyroyal (*Mentha pulegium*) is causing some concern on heavy soil types because its incidence in first-class pastures is increasing and it is not an easy weed to eliminate without killing the clover.

Lupin (*Lupinus arboreus*), inkweed, boxthorn (*Lycium ferocissimum*), gorse and barberry (*Berberis vulgaris*) are the most troublesome weeds on the belt of consolidated sand country which stretches from Bulls to Patea. Lupin is a very useful plant in the initial stages of sand stabilization but when grasses and clovers become established, lupin comes into the category of being a weed.

The most prevalent weeds in choumoellier and swede crops are redroot (*Amaranthus hybridus*), black nightshade (*Solanum nigrum*) and fathen (*Chenopodium album*). Of these redroot is the most prevalent and it is particularly so when choumoellier crops are sown early for summer feed.

Efficient control of weeds is being achieved in cereal crops for grain and average yields of at least 50 bushels of wheat and 70 bushels of barley have been obtained over the past five years. Most of the spraying for weeds in grain crops is done from the air and the weed that has been most widespread through the crops is redshank (*Polygonum persicaria*).

It is interesting to note that cereal growing, which was abandoned in the 1920's and 1930's, principally because of weed competition, is now taking its place again as a component of the district's fat lamb farming.