

TUSSOCK GRASSLAND FARMING IN THE SOUTH ISLAND.

(W. J. A. McGregor, Mount Linton,  
Ohai, Southland-)

The above subject which I have been kindly requested to give some remarks on to this Conference may not seem very interesting to many of us these days, when the attraction of the high fertility yields of our topdressed cultivated grasses command so much attention. To many of us, tussocks are just tussocks, whether we see them growing in Marlborough, Canterbury, Otago or Southland, and do not attract much attention in regard to differences, feeding value and suitable climatic conditions.

I doubt if any other country in the world is so well endowed as our South Island of New Zealand with such useful grazing as supplied by our \*varieties of tussocks throughout the year - a great standby, not of high feeding value in many parts, but most valuable for keeping life in stock, either in the driest of summers, with the feed scorched by drought, or in the severe snowstorms of winter, when the snow is too deep in the paddocks for stock to graze. It is under these circumstances that the value of a sunny face of tussock country is really appreciated.

Tussock lands have been estimated to cover 6,000,000 acres, or one-seventh (1/7th) of all the occupied country of New Zealand.

It is with a feeling of diffidence, owing to my lack of knowledge of botany and botanical terms, that I care to handle this subject, being merely a pastoralist, a lover of nature, of good country or any country well handled, and where good stock are produced. On tussock country, where good stock are seen, you can rest assured that the country is well handled and in good heart. This will mean the country is clean, free from rabbits, with fresh sweet tussocks and probably good bottom grasses. In the past it has been lamentable seeing the destruction of much of our good tussock country, both high and low country, due often to reckless burning, rabbits, short term leases, over-stocking and bad management.

Bad management is mostly to blame for the ruination of tussock country, through want of control of burning and of keeping rabbits down. Fires take place, maybe at the proper season or not, and the country gets a good scorching. Then if rabbits abound, they invade this burned country and any vestige of growth that may show, either tussock or grass, may be totally destroyed by them. In six months' time you may probably see the poor old burned-out tussocks scratched out by the roots, and if it is in a dry climate like Central Otago, that is the finish of that country for years to come. In Southland where we have a favourable rainfall the rabbits may be exterminated by poisoning; and then may appear on this destroyed country bidi-bids and Maori onions. As time goes on, with the rabbits kept under, Yorkshire fog and White clover will put in an appearance, and after twenty years regeneration of tussock will be brought about. Surface sowing may be tried from time to time to help re-grass such country, but in some seasons surface sowing will not take. I remember years ago on rabbit-destroyed country on Mount Linton, that seemed to grow nothing but bidi-bids, I determined to see if I could not get something that would replace

them. I obtained ten (10) bags of Yarrow seed from Ashburton, packed it out, and sowed it on this country. The only place it struck was where we boiled the billy. This shows how particular some of our weed seeds are as to where they will grow. I tried out Yarrow again. We had a few patches of it in a good horse paddock; I ploughed strips of it, put it in the dray, carted it, out and spread the seeds among manuka country to see if it would grow, and it simply gave up the ghost.

We frequently have had fair results in surface sowing burns, in good tussock country, especially with such grasses as Cocksfoot, Dogstail, Brown top, even Chewings fescue, amongst manuka country, and since the destruction of the rabbits, White clover has simply regenerated itself. Yorkshire-fog is a very dominant grass amongst the tussocks in Southland, and it seems to be more sought after by stock when thus grown, than when it takes charge in paddocks on low country. Again; in the process of regeneration it is interesting to note the return of the Anise plant among the bottom grasses on the slopes of the Takitimus, and what an unforgettable charm is the whiff of the Anise, as it floats in the atmosphere off the breath of a mob of sheep, as you follow them Off the hill in the summer.

Further, in regard to the management and treatment of tussock or run country, so much depends on having a sufficiency of good, safe, wintering country for the stock; good sunny facing country carefully saved, allowing the grass freedom to grow with free seeding, and kept ready for the sheep to be put out to winter about the month of May, till probably the end of August. This wintering country which lies to the sun quickly clears after snow, thus relieving the snowed-in sheep. After the winter, towards the end of August, the sheep will be taken off this country and "put out." The dry sheep will be shifted to the higher country and the breeding ewes to some safe or sheltered block for lambing. It is most urgent, therefore, that this wintering country shall be spelled during Summer months to give the tussocks and bottom grasses every encouragement to provide plentiful growth and seeding, thus saving this warm lying country from deterioration, and providing a good bulk of feeding for the ensuing winter.

This practice in regard to country lying to the sun was a point most strongly stressed by those practical members of the Pastoral Commission of 1920, where, in their findings on page 21, they state - (2) "Burn only in the early spring when the ground is damp, and it must be remembered that spring comes at different times on a mountain sheep run," and in a further sentence, "Do not burn sunny faces in an extremely dry climate." This is where only practical experience counts, in the handling of country so that the stock are brought out well, and the country retained in good heart, mostly with the aid of fencing, which plays a most important part, in fact, if there were no fencing, it would be almost impossible to keep sheep and stock from lying on this winter country all the summer, eating it out and leaving no feed for the winter, when it is most urgently needed. Further, by having fences that are kept in order, you know where to go and look for your sheep in the event of having to snowrake them, getting them out of deep places on to barer points where they can perhaps move and forage about in the snow.

There are certainly parts, as in Central Otago, with dry faces that will not stand burning. In the Western district of Southland, and where there is an average rainfall of 40 inches, if **one** did not burn, the accumulation of old tussock would choke out the bottom grasses, and it is a menace as well, in providing a breeding ground for slugs, caterpillars and worms, and causing scald, **footrot** and long toes on sheep, and being a serious **risk** of summer fires that would cause much damage to feed, stock and fences.

It is our endeavour to burn the country in strips from year to year to **minimise** this risk. Therefore, if we want good healthy tussock country with good bottom grasses then we must **burn** periodically, with care, not later than September, July and August are no doubt most suitable in North Canterbury and Marlborough, but **in** the South there is risk of damage of burnt tussock by **frost**.

Deterioration of tussock **country** in some parts, such as Central Otago, is still said to be going on. This deterioration will go on in places not so much due to **mis-**management as to leases, short term leases with high rents and ever-increasing costs to meet, holding up expenditure, **that** might otherwise have assisted in increasing carrying capacity. It will **have** been noticed how tussocks and **grasses** grow so fresh and well on the darker faces of our hill country, and how burnt up and bare the sunny faces of this hill country will be in comparison. This **is** where fencing comes in, compelling the stock to feed on these dark faces **in** all but the winter months, when the sunny faces would be saved for them.

We seem to have about six varieties of tussocks, but this I would like verified by some of our botanical **authorities**. **There** is the big, waving, silver tussock, that likes to grow on the best soils on sunny faces, and **especially** in coastal areas. I have seen it mown down by stock on Banks Peninsula, and **in our** country near the Takitimus it seems only pulled at, except **when** freshly burned, and then stock delight to mow it off while the leaves are tender. I, one time, compared the leaves of the Banks Peninsula **plant** with ours to see why they were more succulent, and found the Peninsula tussock **broader-**leaved. I will admit that in some tussock-faces on our paddocks that have been topdressed the tussocks there and the Cocksfoot growing up through the tussock are much more relished than those out on the hill; which await the day when topdressing will be extended thereto.

Then there is the smaller **silver or** white tussock, very similar north and south, growing in poor areas, and if not such good feeding value as the former, yet very useful in winter time, and in shielding bottom grasses.

**Again,** on higher country and back from the coast we have the hard fescue-like short tussock, growing under the hardest of conditions. I have seen it when at Lake Heron, hanging on by **its** tough roots, with most of the soil gone between adjoining tussocks, this Soil having been lifted up on pinnacles of ice in the winter time and then blown away with the hard westerly winds **in** the spring. This was in country just below 3,000 feet level.

Up where the snowgrass tussock will be growing will **be** found the sweet blue **fescue-tussock** so relished by stock, but not **often** found close together. Snowgrass is certainly one of our most useful of mountain grasses or tussocks, the

saver of many a sheep's life when snow is deep, and when they may not be able to shift far for weeks. Snowgrass accumulates dead leaves round the roots, these becoming a fire risk, and in the past the careless burning of this in the summer time has been responsible for the ruination of much high country, as once the mountain plants are destroyed the top-soils become loose and simply erode away in the storms, cutting out gulches and destroying our beautiful hill country. This destruction is now being assisted by vermin, deer, thar, chamois and hares, eating out and destroying what fire has failed to accomplish. Unless more drastic efforts are taken to cope with these pests much of our bush and hill country will simply become mountain wastes, pouring down rocks and shingle into our rivers, raising their beds and increasing flood menace over lower country.

Finally I must refer to the Red tussock of Southland. Formerly the whole of Southland's plain country was covered with this red tussock, the size of which was an indication of the quality of the soil; on the best soils growing to 6 or 7 feet, and on lighter soils about 18 inches to 2 feet. This is a good useful plant, giving very succulent feed when freshly burned, and good cattle grazing in the winter when cattle would otherwise starve on white tussock. I have known Canterbury friends not to appreciate the Red tussock being called a tussock. I told a Canterbury friend, a farmer, when I came to Southland over 30 years ago, that there were tussocks that would reach to his elbow on horseback. He came down and I took him out and when I came across some I said, "Here you are," raising the leaves to my elbow when on horseback. Turning to me, he said, "Call those tussocks, I only call them 'damned' rushes."

To keep tussock country in good order, an ever-watchful eye must be kept on the rabbit menace, and where possible the extension of topdressing will improve the feeding values of tussocks and bottom grasses.

-----