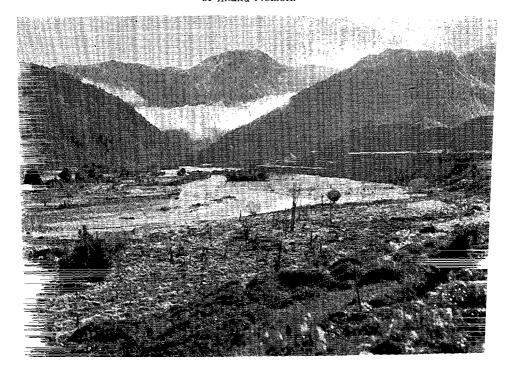
INTRODUCTION TO FARMING IN NELSON

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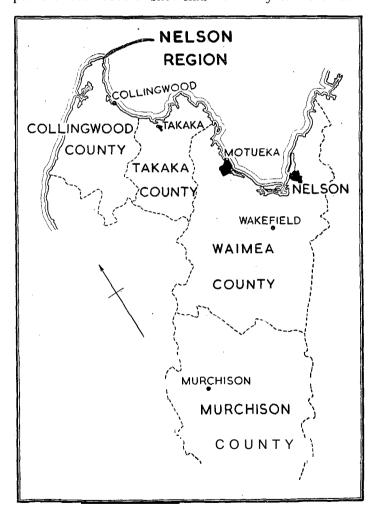
Nelson is a district of scenic charm. It has an equable and sunny climate and a pattern of farming as diverse, or more so, than any other part of the Dominion. It can claim distinction and monopoly in that two of its crops, tobacco and hops, provide the finer pleasures of living. Nelson is a fruitful province. Its agriculture is neither of the north nor the south. Climate and encircling mountains have made its fertile flats highly productive. Fruit, hop, and tobacco growing, cropping, pastoral farming, dairying, and early cropping are highly developed and specialised. In its hinterland of difficult and marginal country the lowlands

Nelson is a mountainous province with very little flat land, possibly not more than 3 per cent of the land area. A narrow river valley $\it of$ inland Nelson.



are turning to furrow and disc as marginal land comes into pasture, while the more difficult country is being extensively re-afforested to exotic timbers for industry and export. The rugged mountainous, hinterland is an explorer's and huntsman's paradise.

Those of you who have come to Nelson by air in fine weather cannot but have been impressed by the picturesque beauty of the scene. Below, the blue waters of Tasman Bay lap a deeply indented coastline sheltered to the east and west by majestic mountains with peaks of over 5000ft. snowclad from May to November.



In your fleeting first impressions you will have noted too the prosperous and well-ordered City of Nelson, but nowhere will you- have seen extensive flat land. Instead you may have noted the small Waimea Plain at the head of the bay,, or perhaps the alluvial fan about Motueka and Riwaka, where rivers of the same name meet the sea. These areas are, closely settled and well roaded, with cleared hills folding back to rugged mountains and primeval forest. Had you passed westward into Golden Bay, very much the same scene would have unfolded, except that the river flats would nowhere run far in from the 'coastline before abutting on to a very mountainous hinterland,

Inland from Nelson City you would note long and relatively narrow valleys below, trailing many miles between the hills. Over Murchison and the Four Rivers Plain with the Buller River cascading through its gorge would be seen an oasis of green pastures dotted with dairy farms and homesteads encircled by rugged mountains. These then are the main areas of Nelson. They include the counties of Waimea, Takaka, Collingwood, and Murchison. This paper traces very briefly the farming development in the four counties and endeavours to give a picture of present land use.

HISTORY

Back in 1642 Abel Tasman, the Dutch navigator and explorer, anchored his ship in what he called Mordenaars (Murderers') Bay because some of his sailors were killed there in an unfortunate encounter with the Maoris. Tasman sailed away soon after from the coastline without landing, thus probably changing the course of New Zealand's history. Gold was first found in Motueka in 1856, and a year later in Collingwood. The locality thereafter became more fittingly known as Golden Bay. The English explorer Captain Cook sailed along this self-same coast in 1769, but it was not until 1841 that sailing ships brought the first immigrant pioneers, landing them. at Nelson Haven. This too was the first settlement in the South Island. It was under Captain Arthur Wakefield of the New Zealand Cornpany, and followed a conflict between Colonel Wakefield, chief company agent, who favoured settlement in Canterbury, and Governor Hobson, who wanted them to go on to Auckland. Thus came Nelson's immigrants from about London. They found a wilderness of fern, manuka, scrub, and swampy ground, where today many of our best farms lie. Back from the coast the hills

and mountains were heavily forested, beech -being the main timber.

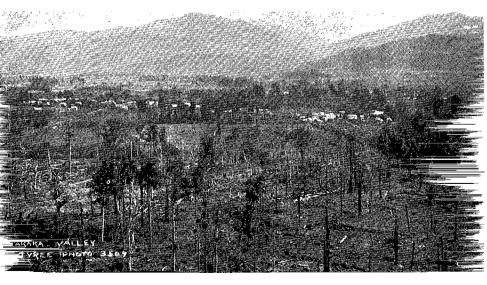
Surveyors and exploration parties were soon penetrating this mountain fastness in the hope of discovering tussock grazing land beyond. 'The work and exploration of Cotterill, who discovered Lake Rotoiti, and Charles Heaphy, Brunner, and Fox, the first three white men to strike inland to the present site of Murchison, were epics of this period. Perhaps the greatest feat of New Zealand exploration was that of Brunner, who with two Maoris set out from the Waimea Plain in December 1846 to trace the Buller River to its mouth, a journey which was to occupy six months, and 18 months were to elapse before he again saw the Waimea Plain.

The finding of gold near Motueka in 1856 and next year at Collingwood gave considerable impetus to the development of the district, and at one period there were over 1000 diggers on the Collingwood goldfield. Murchison, similarly, was a goldfield before its settlement for farming.

While development began on the alluvial flats where the land was cleared and cultivated it .is remarkable how early some of the high inland country was occupied. We find that in the 1860's several grazing runs had been taken up in the Murchison area. Perhaps the first sheep grazed any of inland Nelson in 1848, for in that year Brunner while returning from his mo-

Takaka -Valley approximately fifty years ago.

[Turnhull Library Collection.



mentous journey to the West Coast saw several hundred 'of them grazing near the upper reaches of the Buller River. However, this was probably an injustice, for the sheep had apparently strayed from Marlborough up the Wairau Valley and were not from Nelson

flocks.

If we were to philosophize on the mistakes of the pioneers as we see them today we should admit to the clearing of thousands of acres of steep hill country which time has shown as really too poor and -difficult for any type of farming., Large tracts of this country within Waimea County have already been planted to quickly maturing softwoods -and are now approaching a millable stage.

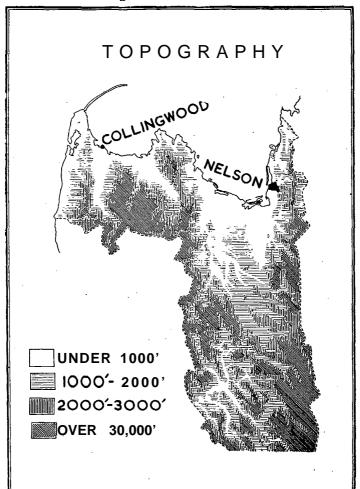
TOPOGRAPHY AND CLIMATE

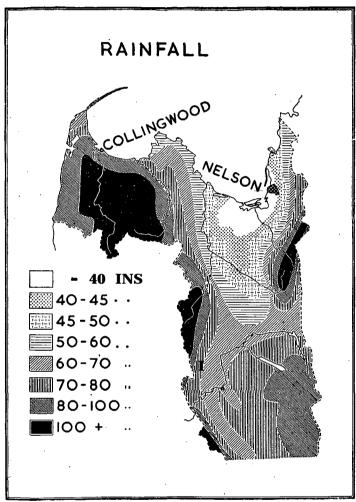
Nelson is a mountainous province with very little flat land, possibly not more than 3 per cent. of the whole area of the four counties. There are narrow valley floors along the main rivers and their tributaries, widening to small alluvial plains near the coast, of which the Waimea and the Takaka Plains are the largest. While inextensive, the only sizeable area of fertile alluvial flats in inland Nelson is the Four Rivers Plain centring on Murchison.

The mountainous nature of Nelson's terrain conditions the annual rainfall and its intensity at particuditions the annual rainfall and its intensity at particular localities. The west coast is directly exposed to the prevailing westerlies; elsewhere the lowlands are sheltered by ranges and lie open mainly to the north. In the west the annual rainfall is consequently high and this decreases eastward. Bainham in the Collingwood County has an annual average precipitation of approximately 150in., Takaka approximately 70in., Motueka 45in., and Nelson 38in. There is also a gradual rise as one goes inland from Nelson, Wakefield having 45in. and Murchison 70in. or more per annum. Normally the rainfall is fairly well distributed throughout the year. rainfall is fairly well distributed throughout the year.,

The effect of altitude on precipitation is strikingly illustrated by instances of intense falls over short periods. For instance, in February of this year over 25in. of rain fell in 48 hours in the Cobb Valley at Upper-Takaka near the site of the hydro-electric scheme dam. This area is above 2000ft, The run-off to the river systems is therefore very great at times and flood control tems is therefore very great at times and flood control becomes a major problem.

mes a major r At Tahunanui airport, 51 where Nelson's meteorological records are taken, extreme frosts of up to 20 degrees F. have been recorded, but winter frosts of 10 degrees F. to 15 degrees F. are more usual. There are striking differentes within the region in temperature, depending, on locality. Some of the foothills of northerly aspect are practically frost-free, as are also parts of the Waimea Plain and the city area, especially where there is movement of air down river valleys. Otherwise shaded valleys can be extremely cold with heavy winter frosts. Waimea County usually experiences a period of drying south-westerly winds in early summer and droughts are not uncommon. Elsewhere,





particularly in Murchison and the alluvial flats of Ta-kaka and Collingwood, it is very unusual for pastures on the heavier land to feel the effects of drought at all severely.

Before giving an outline of the farming pattern of the Nelson region ,I wish to touch on two factors, the first a limiting one, and the second one which has been of considerable assistance to farming generally, though particularly in Nelson;

COMMUNICATIONS

Nelson is indeed unfortunate that it has no through rail link to the remainder of the South Island. $\overline{53}$

It has, however, a highly developed land transport system and good though tortuous highways over mountains to the south, east, and west. The port of Nelson is capable of accommodating many of the smaller overseas vessels trading to New Zealand as well as coastal shipping. These latter ply to Motueka, Takaka, and Collingwood, as well as to Wellington and other North Island ports. Air freight and inter-island airline traffic have developed: remarkably recently, but the cessation of the nightly passenger ferry between Wellington and of the nightly passenger ferry between Wellington and Nelson has left a certain void in communications northward. We in this province are now the most dependent on air services of any Dominion centre. Also we are most dependent on the vagaries of the weather for these external links.

SCIENTIFIC GUIDANCE

The second point concerns scientific guidance which has been given to our primary industries. Through the philanthropy of Thomas Cawthron, an early Nelsonian and trader, nearly all of his estate, approaching £250,000, was bequeathed for scientific research and the betterment of local primary industries. The Cawthron Institute, now in its 35th year, through research work on soils and fertilisers, plant and mineral deficiencies, insect problems of farm,' orchard, and timber, and studies of fungous diseases affecting fruit, hops, and market garden crops has been of inestimable worth to the farming community and to provincial prosperity. The Institute is staffed by able scientific personnel, of whom the present Director is Sir Theoders Piege and it has a close ligious with other research. dore Rigg, and it has a close liaison with other research dore Rigg, and it has a close haison with other research activities in Nelson. such as the Entomology Division of the Department of Scientific and Industrial Research, the Tobacco and Hop Research Stations at Motueka, and: the Scientific and Industrial Research Department's orchard at Appleby, where manurial and spray programmes for Moutere Hills orchards are the subject of close investigation. Other Government Departments, including Agriculture, Soil Conservation Service, Lands and Survey, and the Forest Service have played their parts in farm production, marketing, and reafforestation, and a pleasing feature has been the close liaison between these organisations when consideration has had to be given to any land use problems in the district. The same close link has existed between primary producers and local bodies and in no small measure has led to the resolution of local problems.

COUNTIES FARMING

To consider the farming in the region it is really necessary to deal with it in two independent sections: 1. That for Collingwood, Takaka, and Murchison Counties, and 2. That for Waimea County alone.

As a commencement some idea of the way in which the land is used in the whole region can be seen from the table.

TABLE l-Land Utilisation-Nelson Region

•				
				Acres
Area	occupied			953,000
Unimpro	ved land			657,000
Pasture	(including	lucerne)		225,000
Cereal	crops for	threshing		2,200
Forage	crops .			9,000
Market	gardens,	orchards .		5,400

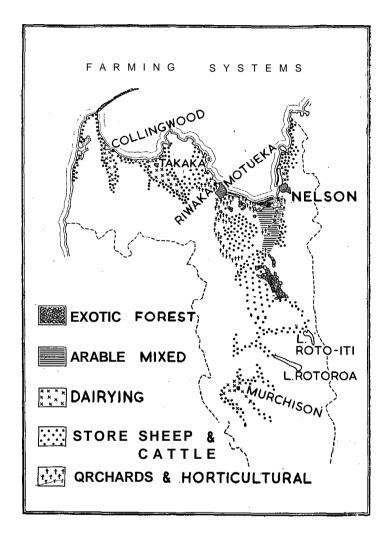
The table shows the considerable area of land in unimproved state which is approximately 70 per cent. of the land occupied for farming. Secondly it shows that cropping (cereal and forage) is not very important, practically all being located in Waimea County. Lastly, almost all of the market gardens and orchards are sited in Waimea County.

In the other three counties, Collingwood, Takaka, and Murchison, the farming pattern is relatively simple, with dairy farming being the predominating feature on the flats and river valleys. Sheep associated with cattle are run on the, hills. -The very diverse nature of the province's farming can be seen from m a p

Of the 24,000 dairy cows 'in the region, these selfsame three counties have approximately 14,000, and of the total 409,000 sheep they have 121,000, or 30 per cent. This clearly shows that Waimea, with 10,000 dairy cows and 288,000 sheep, is the most important farming sector of the whole region.

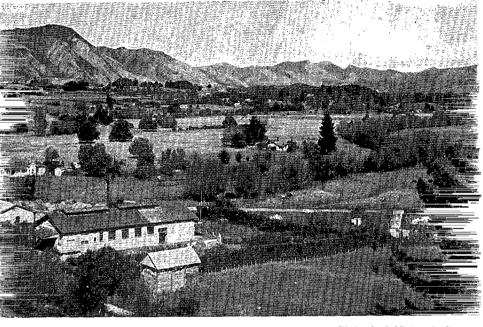
In the Golden Bay district lying between Takaka and Collingwood much otherwise flat or low land is of pakihi formation, the development of which up to the present has proved unsatisfactory, except for small areas, because of the natural drainage difficulties,

Each county is served by a dairy factory, the overall production from the four factories for the. year ended 30th June -last being 2970 tons of butter, with



Erightwater factory serving Waimea County having the largest individual output. Production from the other factories has shown, a steady increase in recent years and this should continue with the development of more land and more intensified farming methods.

The area of farmable land in the three counties of Takaka, Collingwood, and Murchison is small, but on many of the flat areas there has been considerable improvement in farming techniques in recent years. With pasture improvement and better management



[National Publicity Studio.] The Takaka Valley. Dairying is the predominant system of farming in the Valley.

increased production of butter, fat lambs, and beef cattle is likely. On some of the easier and more accesible hill country modern equipment is being used to convert land. covered- in fern and rubbish to good pasture. With favourable economic conditions development is likely to continue. Aerial topdressing has been carried out on some hill country in Golden Bay and the demand for this is increasing.

Again these counties suffer considerable handicaps, one principally being the high transport costs resulting from long hauls over hilly and winding roads. Sea transport is severely restricted in Takaka and Collingwood through difficult tidal access. For instance, by the time superphosphate reaches Golden Bay farms it may cost between \$15 and \$16 per ton. Similarly to get it to Murchison involves a rail haul of approximately 190 miles from Canterbury, after which it has to be conveyed by lorry 30 miles through the tortuous Buller Gorge.

Waimea County is the most important of the four counties from the farming viewpoint. It is the largest and has the most flat' land. The broad features of land use in this county are set out in the following tables.

Table 2—Land Utilisation-Waimea County

			Acres
Total area			984,000
Occupied for farming			564,000
Unimproved land .			377,000
Improved land			187,000

These figures show the striking fact that of a total area of 984,000 acres less than one-fifth has been improved for farming.

Of the unimproved land 183,000 acres or 50 per cent. comprises land covered in fern, scrub, and second growth. Table 3 sets out the major uses of the improved land and gives an indication of the diverse farming pattern.

Table 3-Main Uses of Improved Land in Waimea County

								I	Acres,
Sown gra	ass a	and	lucei	ne				1	19,000
Cereal cro	ps for	thre	shing						2,100
Fodder a	and	root	cro	ps					7,200.
Orchards				-					3,600
Tobacco									3,200
	gardei	ns;	smal	l	frui	ts			1,800
Hops	0								600
Plantation	S								48,500

Sir Theodore Rigg in 1947 estimated that of the total value of agricultural production from Waimea County over 95 per cent. was derived from the improved and cultivated land and less than 5 per cent. from the unimproved land. The position is likely to be very much the same today. He also stated that the area of alluvial land in all probability did not exceed 75,000 acres, and this small acreage of good soil was probably responsible for a very high proportion of the total agricultural production of Waimea County.

As might be expected the heavier land on the Waimea Plain near the larger centres of Nelson, Richmond, and Motueka is used mainly for town milk supply, and these farms rely largely on grass supplemented by hay or silage for winter needs. Green feed, maize, oats, and chou moellier are used in their seasons. There is little root cropping for supplemen-

tary feeding. Lucerne and cowgrass are widely grown for forage and hay, and the taking of seed from cowgrass over summer is common and profitable.

There are numerous small holdings combining the milking of small herds, vegetable growing, hop growing, stone and pip fruit growing, fat lamb raising, and sidelines such as the sale of flowers and plants.

Some of the larger farms on the Plain have run-off hill country nearby and use this to depasture dry stock, leaving the flats for cattle and lamb fattening with a certain amount of forage cropping.

Green peas for picking, canning, and: quick freeze occupy a prominent place in farming on the Waimea Plain and in Motueka, and there are possibly about 1200 acres grown now for these purposes. Barley of quick maturing type (Australian Chevalier and more recently Kenia) is the main cereal crop, yields averaging about 40 bushels per acre and running to 80 bushels.. Very little wheat is grown at present—only 200 to 300 acres of Cross 7-whereas some years ago 2000, to 3000 acres of the variety Major was quite common. Some years ago Richmond had its own flour mill, Early potatoes to be dug before Christmas or early January are grown on warm, stony plain country, though the really early crops of peas and potatoes come from the sunny lower foothill slopes bounding the eastern Waimeas. Plantings here of both crops take place from February onward on steep, sloping hillsides worked and cultivated by horses. A great deal of handwork is required and there are hazards a-plenty, natural and man made, before these high-cost early crops reach the city brokers' floor and are sold to grace the tables of the more affluent. Peas and potatoes from this early belt are marketed from mid-winter to December.

It is quite usual for farmers in the Waimea to mix small-scale dairying or sheep farming with annual cash cropping or even fruit growing, although there are a number of self-supporting units where tobacco, hops, or fruit are the whole or main source of income: Concentration on the better flat land for such annual cash crops has led to the neglect of much of the poorer hill country and its general deterioration, particularly in the years since the slump of the early 30's.

Tobacco'farming in particular is a full year's job. The crop is planted in spring, cultivated over summer, and the leaf harvested and kiln dried in early autumn. Grading takes place during the winter. A successful tobacco grower has little spare time at seasons suitable for pasture renovation or topdressing. This encourages through neglect deterioration to fern and rubbish. Mixed farming where annual crops with a high labour requirement are grown, is thus generally inimical to best land use, especially where the holding is large and comprises poor country.

Merino sheep were first introduced to the South Island in Marlborough, but Nelson conditions proved unsuitable for the breed and Romney or Romney crosses now predominate. There are few sizeable flocks in Nelson by comparison with Marlborough or Canterbury. Over many years past the total number of sheep supported by the province has shown no great changes. The reason for this probably lies in the compensating carrying capacity of land being developed and higher carrying capacity through topdressing as the poorer country retires. It is widely known that much of the unimproved land in Waimea County (377,000 acres) has a carrying capacity of only 1 sheep to every 3 or 4 acres. Even then they are done poorly. Improved pastures are probably carrying 1 to 2 sheep per acre, while where new grasses have been sown, with liming and topdressing, 5 sheep per acre overall is considered possible on what were previously regarded as very poor hills.

In the post-war period several factors of extreme importance to Nelson have influenced land improvement and development. Firstly, aerial topdressing and oversowing on the lower eastern foothills flanking Waimea Plain are showing most encouraging results. Secondly part of the income from high wool and stock returns is being used by farseeing farmers to bring in more marginal country. Heavy machinery, including tracklaying tractors, swamp type ploughs, giant discs and levellers, plus lime, fertiliser, and good pasture seed, are all necessary. Again results within the limitations of climate and soil are exceedingly promising. The Nelson Catchment Board has surveys in hand and completed of the extent and nature of hill country capable of development and the farmers concerned through their Federation are seeking the restrictive factors from individual landholders so that these may be overcome.

On the country which is not suited to farming both the New Zealand Forest Service and 'private in-



Fifty years change in the Ngatimoti district, 1900-1954. Photo taken 1900.

terests are planting trees as speedily as their manpower and resources will allow.

Dairying has increased., not only in the more favoured localities of Golden Bay and Murchison, but also in Waimea County. In Waimea County particularly the individual supplier is usually small, a few cows being kept to supplement other main income sources. The Waimea Dairy Company at Brightwater with an output of 1045 tons (I954 figures)- from 7.25 suppliers is credited with having to collect over a greater mileage in relation to its production than any other factory in the Dominion. This factory also produced 278 tons of dried milk powder in the 1953-54 season.

The arable farming land in Waimea County is now almost wholly on alluvial plain or valley flats, though previously oats in particular were widely grown on foothill country.

Apart from purely horticultural crops there can be no doubt of the value of scientific guidance to farming generally in Nelson. Cawthron researches laid the foundation, by stressing the importance of using lime and phosphate to provide both grass growth and healthy stock. They were also early in the field with their advocacy of lucerne and clovers. In more recent

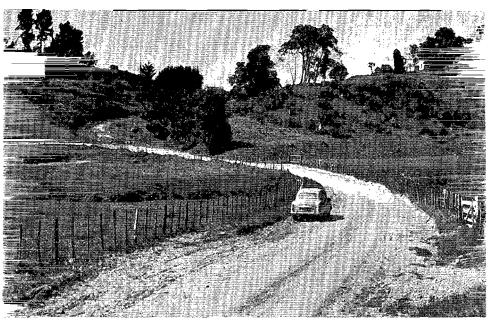


Photo taken 1954

years the results of Dominion research on improved pasture and crop plants have cemented further advances and lifted crop yields and carrying capacities to limits previously not deemed possible. Extension services have likewise improved along with better transport and roading. In 1945 small seeds certification began in Nelson under the Department of, Agriculture and farmers now produce the best grades of seeds locally for their own use and sale. Cowgrass is one crop in particular. Seed from approximately 750 acres and nearly 50 farms is annually Government certified. In all, these advances have contributed to population increases. One authority has given a figure of 50 persons per square mile supported on the Waimea Plains, while the last census figures (1947-51) where the relative growth of patropolities. show the relative growth of metropolitan Nelson as second only in the. Dominion, with Hutt, Wellington, in the leading position.

MOUTERE GRAVELS

Although you will be viewing some of the Moutere gravel soils at the field day and will then see what progressive farmers are doing to develop this class of country, one cannot omit mention of them in a paper of this nature. There are 315,000 acres of Moutere gravels in the Waimea County and they have

always been regarded as problem soils, but as Mr C. I?.' Shuttleworth, chairman of the Nelson Catchment Board, said two years ago in the introduction to a land utilisation survey of the area, the future use of these soils is a matter of the greatest importance to the continued prosperity of the Nelson district. With satisfactory economic conditions, our present knowledge, and modern equipment, the future of thousands of acres of this land is brighter. That they have been regarded in the past as problem soils can be seen from an interesting letter written by. a prominent farmer at Lower Moutere to the editor of the journal "The New Zealand Farmer" in September 1900. The letter reads: "Sir, Inspectors Clifton and Fleming of the Auckland district in their reports for 1898-99 give short accounts of successful gorse growing for sheep, which reports have caused a good deal of interest among farmers here. We have in this district thousands of acres of poor clay rolling hills overgrown with manuka scrub and valued in their unimproved state at 6s. per acre. This, land will not grow the better grasses but only poor stuff, and there is continual expense from the persistent way in which manuka comes again from seed. Several of us have determined to give the gorse a trial. We have had sufficient experience of it as a nuisance and therefore wish to know all we can before starting. With this in view I shall be glad if you will give some information on the following points:-

Frank 100 - 100 - 3

- 1. Whether it is the common gorse and if so how usually gathered.
- 2. Quantity of seed per acre drilled in- rows 6in. apart.
- Height of plant necessary before it is grazed.
- 4. How it is cut for winter feed or chaffing.
- 5. Expense of a machine for rolling (to crush spines) and where obtainable.
- 6. Cultivation necessary between rows.
- 7. Advisability of allowing or sowing grass between the rows."

This letter shows that the problem of utilising this land was a real one-and perhaps the letter was the forerunner of what became known as gorse farming in Nelson. Gorse has been sown and many farmers even today are strong advocates of its usefulness on

poor hill country. Its management, however, is another problem. Gorse is a recognised soil improver. Sheep will do better on gorse than on poor native grasses devoid of clover-s.

With fertiliser, lime, good seed, and the magic of the trace element molybdenum, much poor land can blossom into very productive farms.

HORTICULTURE

Although the main interest of most of you attending this conference is grassland and grassland problems, Nelson obtains a considerable. amount of its wealth from horticultural production, estimated at about $\pounds 2\frac{1}{2}$ million yearly, and therefore one must give some account, although brief, of these crops.

Nelson is mainly known because it grows 42 per cent. of the apples and all the tobacco and hops produced in the country. In Waimea County the horticultural industries account for probably two-thirds of the total income. Tomatoes, small fruits, and canning and quick freeze crops all contribute. In the city and adjacent area over 26 acres under glass are directed to early tomato growing, while the eastern foothills are renowned for early peas and potatoes. Each of these specialised crops is grown where the soils and climatic conditions suit best, and a great deal of research has been devoted to the requirements of them all. Generally a sunny climate, well-distributed rainfall, and sheltered condition are common attributes.

FRUIT INDUSTRY

In the early part of this century fruit growing was a very mixed type. Pip and stone fruits were grown first about Nelson, Brightwater, Motueka, and Riwaka, and apart from supplying the first jam and preserving factory here, fresh plums, apricots, and peaches were shipped to Wellington. At this period apples and pears were difficult to grow because of lack of knowledge of disease control. From 1911 to 1916 there was extensive planting of apple trees on the coastal slopes of the Moutere Hills where today almost 65 per cent. of the orchards are located. The industry has faced many problems, but in the last 40 years it has stabilised. Uneconomic and poorly sited orchards have been abandoned, and the produc-

tion of the remainder has been raised by capable management and scientific treatment. Of the -3600 acres in orchard, over 2500 acres are on the Moutere Hills. Apples occupy around 3000 acres, with about 280 acres in pears and 400 acres in peaches and nectarines. The yields of apples reach between 400 and 500 bushel cases per acre, with 600 to 700 in good seasons on the better properties.

SMALL FRUIT INDUSTRY

Raspberry growing has for many years been associated with farming in the Tadmor Valley and about Ngatimoti and Motueka. The, industry has shown a decline since 1920, when over 400 acres were grown, to under 200 acres now. The areas where they are being grown are further inland and more risky for tobacco growing on account of early frosts. Preferred soils are alluvial, free draining, and friable silt loams. Yields are quite satisfactory,, varying from 2 to 3 tons per acre according to season and locality. While much of the fruit finds ready sale locally, a considerable quantity has been railed to Nelson for factory processing.

Black currants are also grown in limited acreage. Strawberry growing has declined almost completely, but there are now several promising vineyards where

grapes are doing reasonably well.

HOPS

Kentish hops came to Nelson with the very early settlers. For many years Nelson has supplied New Zealand's needs as well as having a surplus in favourable seasons for export. Hop gardens are located mainly in the sheltered. Motueka-Riwaka. districts, but there are gardens in the Moutere, on the upper and less exposed parts of the Waimea Plain, and in the various river valleys inland as far as the Sherry River. At present (1954) there are 104 gardens comprising 606 acres, while the average production per acre ranges from 13001b. to over 17001b. of cured hops.

TOBACCO GROWING

Tobacco growing is a comparatively new industry in New Zealand. Again climatic conditions and the right soils, with an absence. of damaging winds, frosts, or hail, are of prime importance. Sands and sandy

loams are the preferred soils for kiln-dried varieties, but air-dried types can be grown on heavier soils. At present there has been a slight recession in the acreage grown, the figure being 3212 acres in 1954. The industry is concentrated mainly in the Motueka and Riwaka districts and along the respective river valleys, reaching inland as far as Motupiko. Since 1939 the whole of New Zealand's commercial tobacco crop has been grown in Nelson. The industry is well served commercially, the manufacturers having buying floors and leaf-conditioning factories in Motueka, though final manufacture is done in the North Island. The Tobacco Research Station established near Motueka in 193'7 by the Department of Scientific and Industrial Research has been of inestimable value to the industry.

The Nelson Catchment Board has near completion a \$100,000, 23-mile stopbanking scheme on the lower reaches of the Motueka River for protection of tobacco land against flooding. One quarter of the total amount was raised directly by the growers themselves.

Nelson farmers aided scientifically and with unrivalled keenness are forging yet another of the links to our Dominion's prosperity.

Tobacco crop, Motueka district. The whole of $N_{\rm ew}$ Zealand's commercial crop is now grown in the Nelson district.

