# AN INTRODUCTION TO **SOUTH** CANTERBURY

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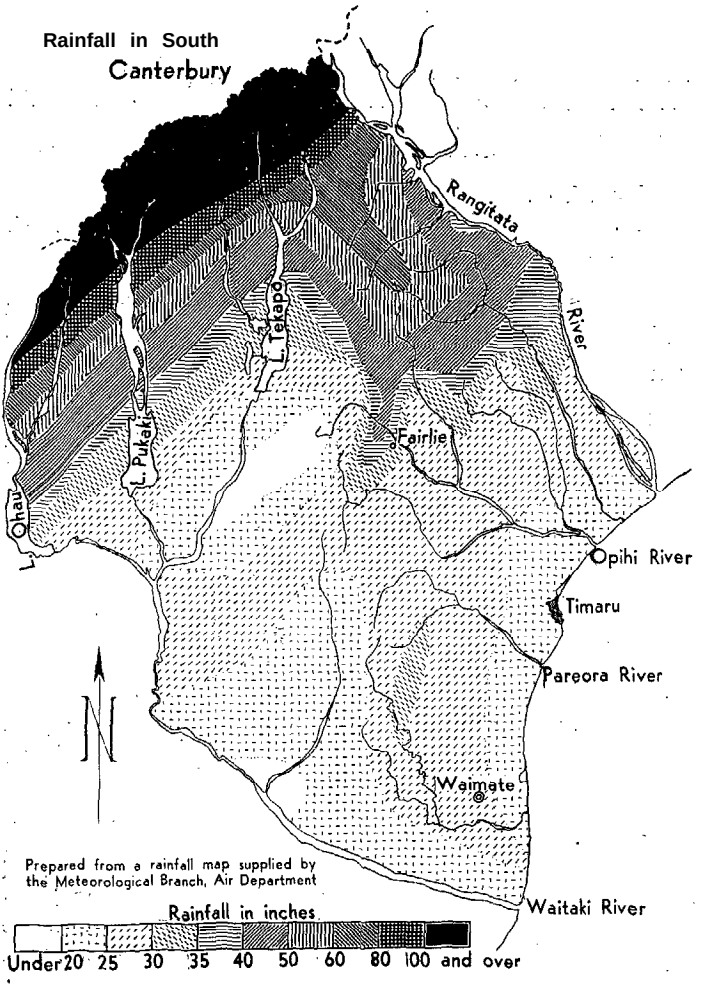
Definition of the Area: South Canterbury is a well-defined region comprising the counties of Geraldine, Levels, Mackenzie and Waimate. It is bounded in the north by the Rangitata River, Forest Creek, and part of the Two Thumb Range, on the west by the crest of the Southern Alps, in the South by the Waitaki River, and on the east by the sea. Of the total area of 3¼ million acres, 2,820,000 acres or 86 per cent of the total area is occupied for farming. Of this occupied area 2,010,000 acres are unimproved land, 651,000 acres are in sown grass, and 125,000 acres in crops, cereals, green feed, and root crops. In 1949-50 the occupied area carried 1,924,000 sheep and 56,000 cattle, of which 6,100 were dairy cows in milk,

Climate: On New Zealand standards the climate of most of South Canterbury is considered to be a dry one. On the coastal belt the annual rainfall is between 20 and 25in., and on much of the down country it is between 25 and 30in. Timaru on the coast has an average annual precipitation of 23in. and Fairlie has 27.5in. Further inland toward the high country the rainfall becomes greater until against the Main Divide it is over 80in. per annum. However, the lowest average annual rainfall recorded for any part of Canterbury is on a relatively small area in the Mackenzie Country where the average is below 20in.

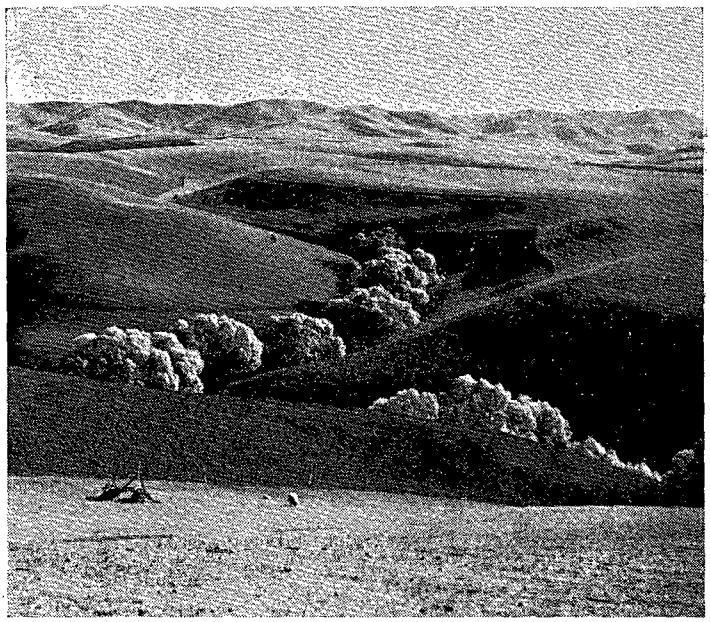
Rainfall is well distributed, but at times there are wide deviations from the monthly averages, and studies made of the prevalence of drought conditions show that South Canterbury frequently experiences partial droughts, while on the other hand floods are not uncommon.

Although the highest precipitation on the plains and lowland occurs in summer-for instance, Timaru usually receives approximately 30 per cent of its rain-

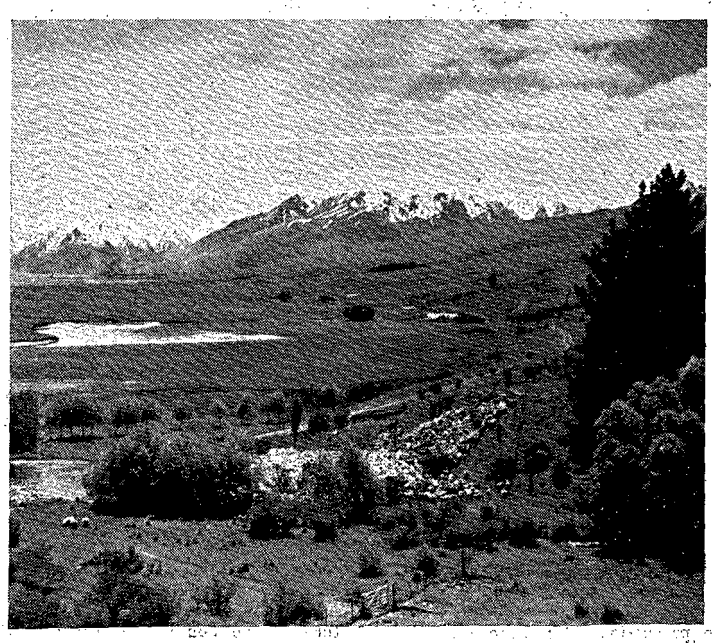



fall from December to February-its effectiveness is reduced considerably' by dry north-west winds which are prevalent at this time of the year. Pasture growth is consequently restricted, but the dry conditions are favourable for harvesting of cereal and pasture seed crops.

On the coast' the temperature range is not great. The lowest mean monthly temperature here is about 41 degrees in July, when approximately 20 ground frosts are experienced, and in January it is 61 degrees. Inland the annual range is greater; in the Mackenzie



The downlands occupy 17 per cent of the land surface of South Canterbury. Under a good rotation the downs will grow well sheep, cattle, cereals, potatoes, linseed, peas, and seeds of pasture and brassica crops.



Of a total area of 3,250,000 acres in South Canterbury, the mountainous and high hill country occupies 1,900,000 acres. This country is the home of the Merino sheep and its stronger-woolled off-shoots, the half-bred, the Corriedale and the three-quarter-bred. This is a view of part of Braemar sheep station.

Grading potatoes in South Canterbury. On the heavier soils around Willowbridge and Studholme potatoes dominate the rotation. Normally South Canterbury grows about 17 per cent of the Dominion's potato acreage and the average yields are the highest in the Dominion.

The production of pasture seeds is a feature of the South Canterbury district. Of the Dominion's acreage cut for white clover seed the district grows between 15 and 18 per cent.

basin approximately 200 ground frosts are experienced each. year, many of them being severe. At Tekapo the mean monthly temperature for January is 57.2 degrees and in July 33.8 degrees. Here frosts. of over 20 degrees are-common in the winter 'as also are snowfalls, an average of 15 being experienced, each winter, and more as the Main Divide is approached. Sheep losses from snowstorms are sometimes very severe;

Prevailing winds on the coast are from the north and north-east and inland from the north-west. The prevailing north-east wind on the coast is sometimes a disadvantage, as it brings fog, which. affects the harvesting of late crops. The main rain-bearing winds are from the south-west and north-west, though the north-west rains affect only the higher hill country.

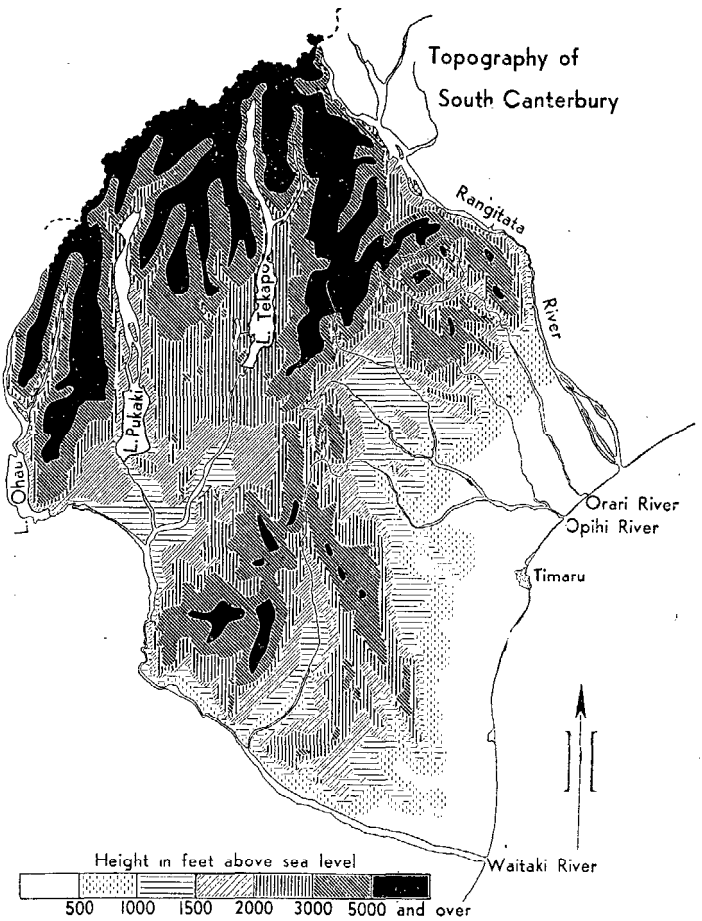
Much of the district receives annually 2,000 hours of bright sunshine and this is a favourable feature of its climate. Such a supply of sunshine stimulates the growth of crops and generally has a beneficial effect on the health of stock.

Although the climate has drawbacks, such as an occasional unseasonable snowstorm, frost, high wind, and periods of drought, it is attractive for many branches of farming, particularly mixed farming, in which meat production, grain growing and pasture seed production are all 'prominent.

**Topography and Soils**: The surface form of the district may be briefly described as consisting of the Southern Alps in the west, grading eastwards through mountains and high hills to rolling downland, and then to an area of flat land on the coast. A more detailed description of these areas will be given later.

The soils of the district can be -considered in relation to this topographical division (1) soils of the plains, (2) soils of the downs and steep hills, and (3) mountain soils.

The soils of the plains which are situated on the bottomlands and on low and high terraces are silt and sandy loams formed mainly from greywacke alluvium and are remarkable for their variation, the depth to the underlying gravel. and' boulders varying considerably. In some soil'types there may be stones throughout the soil profile, whereas: in' other types there 'may 'be 3 to 4in. of silt or sandy loams above the shingle ; in others over 12in. of soil overlies the shingle. Naturally some of these soils are very droughty, whereas others retain moisture very well.




The degree of droughtiness is an important factor in their utilisation.

Soils of the downs are derived mainly from fine, wind-borne loess, which is very finely ground glacial sediment that was fed into the rivers by the glaciers and picked up from the river beds by wind which deposited it in great depths on top of the gravels. On the lower rainfall area of the downs the soils are droughty, but they are fertile and, are used for cash cropping, pasture seed production, and fat lamb production. On the higher rainfall downs area there is frequently a drainage problem and the fertility of the soils is not as high as in those situated on the lower

rainfall section. Most of these soils have a high lime requirement. The steep soils of the hills are those formed on steep greywacke hillsides. The soils of the mountainous area known as skeletal soils cover approximately 50. per cent of the land surface of the district and for the most part are shallow soils. closely related to the parent rock, greywacke:

## SHEEP THE DOMINATING FEATURE

As with many other districts of New Zealand, the dominating influence in South Canterbury has always. been the sheep. Since first the white man set foot here and to the present day the whole of the agricultural and pastoral activities of the province has been wrapped round the welfare of the sheep. It is likely that it will always be so. There have been periods when, through economic circumstances, it has been pushed aside by some crop or crops, but always it has emerged stronger than before.

To those who are not conversant with South Canterbury, but are either farmers and should know sheep or are grassland scientists and. should appreciate the wants of the animal, the province is best described by the sheep which populate its various parts. These are divided into the three areas:—

The high country.
The- foothill country.
The coastal downs and plains.

These divisions lie parallel east and west in bands. varying in thickness throughout the length of the province from Rangitata River in the north to the Waitaki River in the south.

**The high country** in this classification takes in all the land between the two rivers lying eastward of the Main Divide of the Southern Alps and westward of the higher eastern slopes of the contiguous Two Thumb and Kirkliston Ranges.

The highest mountains in the Dominion are in this region. Along South Canterbury's western boundary there are the peaks Cook and Tasman and there are over 30 other peaks with altitudes exceeding 8,000 feet. This mountainous and high hill country, most of which is over 4,000 feet altitude, occupies about 1,900,000 acres of the land area of the district and is. the home of thirty odd high-country sheep stations. Within the region there is the intermontane basin now well known as the Mackenzie Country and

which gained its name from that infamous but hardy sheep thief who in 1855 was probably the first white man to set foot in the area with his ill-gotten gains. The floor of the basin is fairly flat over large areas with a height of between 1,200 and 2,500 feet.

This is the home of the Merino and its stronger woolled off -shoots-the halfbred, the Corriedale, and threequarter-bred, In this high country of long, cold winters and short, hot summers it lives on the upland native pastures as no other type could. Except for small areas of the valley floors and river flats which are cultivated and provide some supplementary feed in the form of hay or chaff, the land is unploughable and because of the sparseness of the pasture covering, it is held in large areas grazing acres to the sheep, not sheep to the acre. In its native state it was practically treeless and is so today except for too few artificial plantations of conifers. . Wool is the source of income, wastage under the rigorous conditions is high, and in the main the runholder is satisfied if the female survival of the natural increase is sufficient to maintain stock numbers.

This is South Canterbury's share of New Zealand's native tussock country with its associated native plants and grasses. It is a typical portion of that vast area in the South Island the maintenance and improvement of which is so vital to the lowlands and plains and on which so little has been done. Here the problem of the grassland scientist is not one of the introduction of high-producing grasses and clovers, but the improving of natural species and the introduction of strains and species which will' persist, grow, produce, and withstand the rigours of the climate as do the sheep which inhabit the area. This is not the land of quick results from high-producing strains. Here any improvement can come only as does the rest of life in this lonely area, the hard way, slowly and unspectacularly, a way that few are willing to tackle.

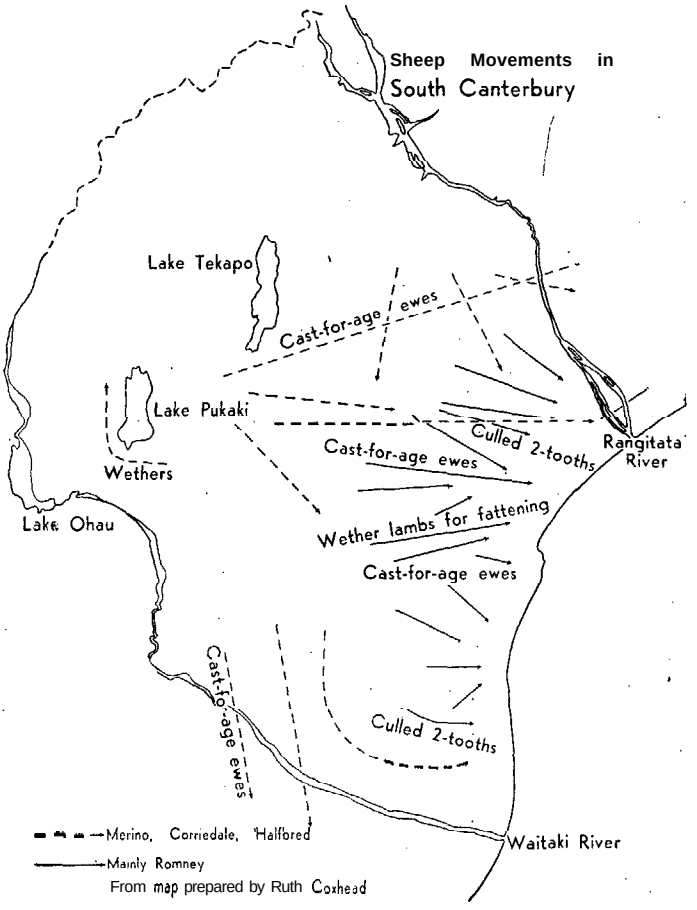
We are inclined to beg the question with advice to get rid of the rabbit, stop burning and take the stock off. But actually, what is there to offer? It is true that there is work going on, but it is little compared with the: size of the area, and, to the people who occupy the land, apparently disconnected. The owners and shepherds who live in this land know the country and the sheep, they learnt their ways from their fathers and grandfathers. They need no advice on management-the climate and conditions dictate

that to them-but they do need help regarding the improvement of the native sward.

## FOOTHILLS

The foothills lying to the east of the montane area occupy approximately 520,000 acres and include the hill country near Geraldine, the Hunter -Hills and the Kirkliston Range. The section is subject to winter snows and the altitude of much of the country is between 1500 and 4000ft. with a few peaks up to 6000ft.

To this area belongs the Romney cross ewe, with some half-bred and threequarter-bred flocks in the drier northern and southern portions. The general management has aimed at the production of wool,



store wether lambs, and cast ewes for fattening and breeding on the downs and plains area and the sale of surplus ewe lambs suitable for the breeding on the same area.

Due to the higher rainfall this area was originally covered with native beech forest and manuka scrub. Through the failure of the original occupiers to freehold the land within the required time or through being acquired by the Government for settlement, the greater portion of this area became Crown land and was resettled as small grazing runs (S.G.R.) or farms held under lease in perpetuity or renewable lease from 1880 to 1911. Whether the land was Crown or freehold, with subdivision came trouble and the trouble has persisted until today.

This is the marginal land of South Canterbury on which so much money has been lost-the land of disappointed hopes and continuous rent reductions, that was abandoned in the economic depression of the 1930's to revert to gorse, scrub, browntop, and creeping fog; the area that came to be shunned by the settler and on which no one would lend money, yet now the land. on which we are prepared to pin our hopes as one of the pillars of increased production. Ultimately the credit for this will go to the few who held on through the difficult periods and showed that this land could be successfully farmed.,

The story is quite simple. Scattered over the area were men who apparently without contact with advisory services, realised the value of lime. They knew the value of supplementary feed and cattle. They were not afraid of hard work. When phosphate and good pasture seeds came their land had a sufficient background for these aids to be used advantageously. There should be no need for experimentation or persuasion ; the examples of what can be done lie scattered over the area. If simple direct methods are backed by hard work the result is assured. This foothill area has a great future.

## DOWNLANDS AND PLAINS

(a) **Downlands:** The downlands are a feature of this part of the Dominion and they occupy 550,000 acres or 17 per cent of the land area of the district. Except for a. few steep escarpments the downs consist of a series of rounded valleys and spurs and from Timaru for approximately 15 miles south they extend to

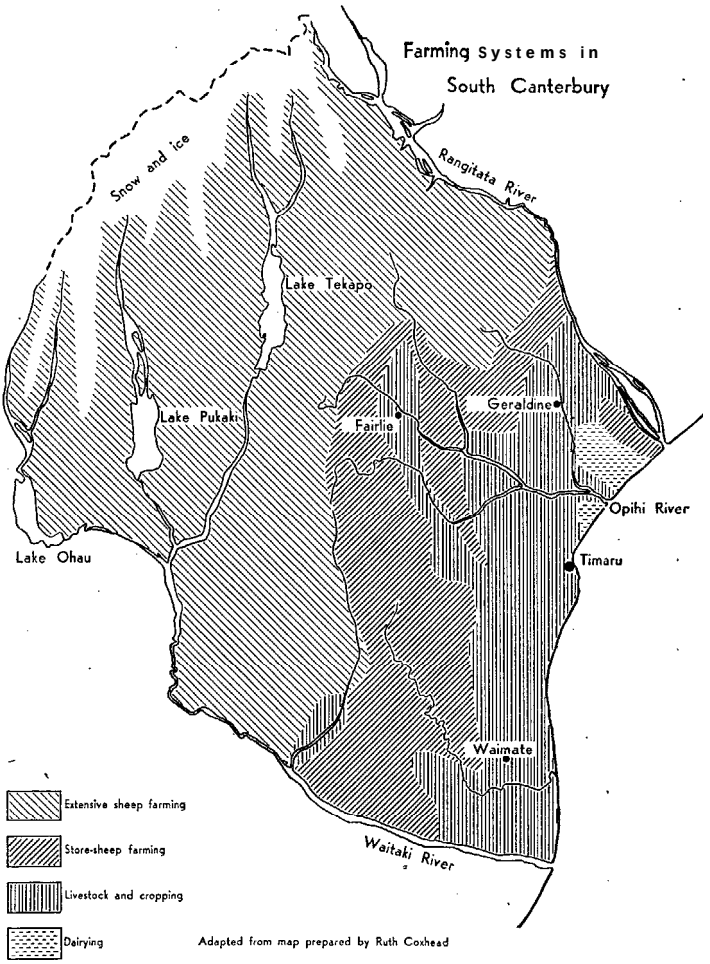
the coast and break the continuity of the Canterbury Plains.

**(b) Plains:** The southern part of the Canterbury Plains extends into the district and there is also another flat area in the south-east of South Canterbury around Willowbridge, Morven, and Glenavy. These plains, like the remainder of the Canterbury Plains, have been built up of rock debris composed of gravel, shingle, sands, and silts deposited by the rivers in the form of fans which eventually overlapped. As a production potential the flat areas are important, but they occupy only 7½ per cent of the land surface of the region.

These downlands and plains are the arable lands of South Canterbury, but still the dominating feature is the sheep; this time, however, in the form of a fat lamb. These lambs are the product of the Romney cross ewe with a fat lamb sire off the mother or the bought-in Romney cross wether lambs from the foothills fattened on rape or grass. This predominance is more confined to the downs and the lighter areas of the plains, the heavier plains soils being more cropped, especially in the south, where potatoes dominate the rotation in the well-known districts of Willowbridge and Studholme. On the less well drained land dairying is the chief source of revenue.

Taken as a whole this is the area that has for the past 15 years produced the bulk of the pasture seeds for which South Canterbury has become well known. Over this time the plough has gradually receded into the background. This recession began with pasture seed growing and continued as a result of the boom in wool and the substantial return from meat. There is no doubt, however, that in common with much other land in the Dominion, whether in the North or South Island, the true role of this country is mixed farming. These downs and plains under a good rotation will grow well sheep, cattle, cereals, potatoes, linseed., peas, and seeds of pasture and brassica crops. This IS possible, of course, only with intensive use of lime followed by phosphate and the establishment of pastures using good type grass and clover seeds and the inclusion of a fallow in the rotation.

The adaptability of this area to almost any type of farming has been its liability rather than its asset. This, of course, is true of similar land in any young country where the settler is lacking in capital or is working. on borrowed money. For the reason of quick




independence, the justification for becoming a farmer, and pushed at critical periods by circumstances outside his control by lending institutions both private and Government, the unfortunate, who should be fortunate, is forced to resort to exploiting this adaptable land by virtually endeavouring to "play the market," unfortunately for the majority generally one jump behind. If the market continues favourable for any one crop, the land is "mined."

This is the reason for the ups and downs of stock to crops and crops to grass that have taken place

on this land since it was first occupied 100 years ago. It is disquieting that after such a time the pattern for the efficient working of this land-the best of South Canterbury-is so obviously obscure.

With the high country and the foothills the patterns are simple, the one for wool and the other for store sheep and wool. The future of both is dependent on the future of wool and meat, both of which at present are in demand. That these lands are being used for the purpose for which they are best suited is right. At the present time this cannot be said for the downs and plains or similar land in New Zealand for that matter.

The things necessary to good farming in South Canterbury are similar to those in other parts of New Zealand and nearly every farmer is using them to his advantage. He knows the importance of lime and phosphate, good seeds, mechanisation, and the need for adequate power for working the land. He knows the advantage of the fallow and the importance of pasture. He is beginning to realise the importance of nitrogen.

He is being forced into the field of efficient utilisation, which is unknown to him and which he dreads. He fears it because of the past. He fears it because of droughts. He fears it because of the ties it brings with it and the slave which he will become under the present economic set-up. Eventually, resist it as he may, he will succumb. Farmers are being forced by the innovations they have so willingly adopted into the final phase, the farming phase of South Canterbury.

## DEVELOPMENT OF FARMING

This farming phase is the name we have given to the third phase, which is the present one in the development of farming in South Canterbury.

The first phase, the grazing phase, was ushered in by the Rhodes brothers 100 years ago when they brought 7000 sheep from Banks Peninsula to stock what became known as the Levels Station. Next to appear was Hornabrook at Arowhenua and by 1855 practically all the downs, plains, and foothills had been taken up and the onslaught on the high country by Tripp and Acland had begun. By 1864 the occupation of South Canterbury was complete. The grazing phase was now in full swing with sheep dominating.

But even before this stage had been reached adequate steps had been taken for the future. For in



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1855 at the opening session of the Provincial Council the Sunerintendent of Canterbury, J. E. Fitzgerald, made these remarks:

"Among the subjects which will come before you in the course of the present session that will principally occupy your attention will be the disposal of the waste lands. The policy on which it is based may be briefly embodied in two propositions. First, that the occupation of the soil by settlers who require it and will use it for agricultural purposes is the basis of all real and durable prosperity to a colony, and, therefore, should be regarded as the main object, to which all others should be made subservient. Secondly, that until the waste lands are required by agricultural settlers the utmost possible encouragement should be given for their use for pastoral purposes." He concluded his speech by saying, "The limit to the encouragement which the pastoral interest should receive may be defined by the principle that it should never be permitted to stand in the way of the permanent settlement of the country by the cultivator of the soil."

In 1854 31,000 sheep were run on 408,000 acres in South Canterbury; 3 years later there were 96,000 sheep on 791,000 acres, and in 1868, when it was considered that the sheep runs were sufficiently stocked to meet the conditions under which they were held from the Crown, there were 707,000 sheep in the district.

It was inevitable that the sheep should be of first importance. The local market for agricultural produce was very limited, whereas the profits from sheep were immediate. During the period that the runs were being stocked the sale of sheep by the established squatters to the aspiring ones was very profitable and it was not until the late 1860's that the demand for sheep began to slacken. However, sheep numbers in the district still continued to increase steadily and by 1882 there were nearly 1,500,000, but a change was now taking place and the pure grazing phase was partly giving way to cash crop production.

During the late 1860's the runholders experienced the problem associated with a fall in the price of wool. From an average price of 12¾d to 13¾d per lb for, the period 1861 to 1866 the price began to fall in 1867 and by 1869 it was down to 8¼d per lb. There was a subsequent rise, but in the late 1870's it fell again,

## CROPPING PHASE

This fall in price caused many farmers or runholders on the better land to consider other sources of income and they began to increase the acreage in wheat. They were aided in this by the growth of the railway system in the 1870's. Timaru was joined to Christchurch in 1876 and by 1880 the railway system in Canterbury was little different to that obtaining today with the main line running down the eastern side of the plains and branch lines running from it to the foothills. The stage was now set for the bonanza wheat farms which were a feature of the late 1870's and the 1880's. Studholme in his book "Te Waimate" has given us a picture of large-scale wheat farming in South Canterbury. In 1887 the Studholmes had 3500 acres in wheat and 1200 acres in oats in the Willowbridge area and one season 175,000 bushels were grown on the Te Waimate run. The neighbouring Waikakahi Station in the early 1890% grew approximately 4000 acres of grain per year and the New Zealand and Australian Land Company and Elworthy at Pareora, had large acreages in wheat.

By this time many of the runholders, particularly those on the downs and plains, had freeholded large areas of their holdings and with the advent of refrigeration in 1882 showing the economic opportunities offering on the land, many turned envious eyes on these holdings and there was a real hunger for land. The land question was a burning one and the Liberal Party's success in the 1890 election was an indication of the dissatisfaction at the state of affairs regarding land. Finally with the introduction of the graduated land tax in 1891, the compulsory acquisition clause in the 1894 Lands for Settlement Act and a system of state loans to settlers, the stage was set for the creation of smaller holdings. Although armed with considerable powers, the government used them sparingly and in effect did not need to use them, since it always had more properties offered to it than it could handle.

In South Canterbury the Albury estate was purchased in 1897. Two years later the great Waikakahi Estate of 48,000 acres was purchased from Allan McLean for $323,000 and purchases of further estates continued until the First World War and afterwards for the settlement of returned servicemen. There has been more land purchased by the State in. South Canterbury for closer settlement than in any other region in New Zealand.

The statistics showing the number of farm holdings in South Canterbury give some idea of the closer settlement of the district:

| Year | Number of Holdings |
|---|---|
| 1891 | 1,838 |
| 1895 | 2,141 |
| 1917 | 3,557 |
| 1925 | 3,779 |

Today there are 3486 holdings, the average size being:

| | acres |
|---|---|
| Geraldine . . . . | 4 0 2 : |
| Levels . . . | 188 |
| Mackenzie . . . . | 3,946 |
| Waimate . . . . | 574 |

During the period of subdivision the cropping phase developed and was undoubtedly due to the new settlers' necessity for cash returns and their anxiety to pay off or reduce their indebtedness. It could not be said, however, that sheep numbers declined, for in 1912, when cropping reached the peak of 145,000 acres in cereals, of which 101,000 acres was in wheat (a figure never before or since reached). South Canterbury was grazing 1,500,000 sheep. During this year there were 250,000 acres under cultivation for crop (turnips, rape, and potatoes). For the first time also the potato acreage reached 3000. Comparative figures for 1923 and 1950 are:

1923—Cereals for threshing: 97,000 acres
Sheep 1,459,000

1950—Cereals for threshing: 37,000 acres
Sheep 1,923,500

There is no doubt that 1912, is the record year for South Canterbury both in acreage, yield; and total production, including sheep. There is also no doubt that this year the virgin fertility of the soil ended:

At this stage one cannot but wonder and admire how all this production was handled, even 'though spread by slower systems of harvesting.

Annual production from then on never reached that peak. again. There were, of course, extenuating circumstances-The Great War- followed by the depression of the 20's and 30's aggravated the position coupled with lack of. knowledge of. fertilisation, land use, and the fact that the farmer continued to farm

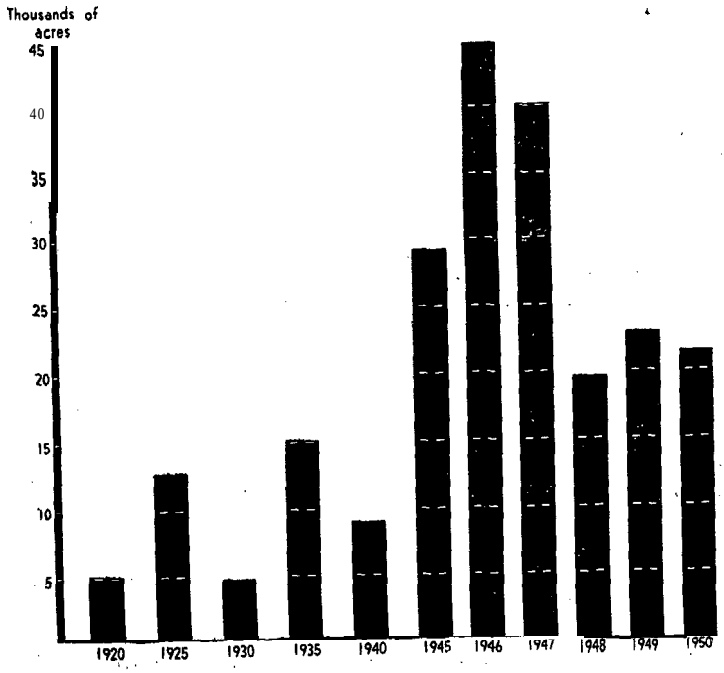
the only way he knew how. In. 50 years from the 1880's to the 1930's South Canterbury passed from being land hungry to being land poor.

The first two phases had passed, one of development, the other of exploitation, a situation common in all young countries. The period from 1935 to 1952 can be described as one of settling down and restoration of confidence in the farming future, in the farmer, and in the fertility of the soil. This was initially due to the introduction of improved strains of grasses and clovers for this introduction took place before any appreciable rise in the demand for food. It has, of course, been boosted since by the demand for our products, but the confidence was there before this.

Within this period is The Second World War. During this time four linen flax factories were established in South Canterbury and 7500 acres of linen flax were grown annually. Today three are still operating and the area of flax grown is about 2000 acres annually.

It is true that South Canterbury has exploited

Area of Grasses and Clovers Cut for Seed in South Canterbury



the pasture seed market to her advantage. Whether or not the district is a good one for seed growing or whether it will continue is of little moment compared with what these seeds did in restoring confidence.

This seed growing gave confidence to the farmer, not only in himself and in his land, but also it gave him confidence in agricultural instruction and research. It can be said that nowhere in New Zealand has agricultural instruction and research received more assistance than it has from the farmers of South Canterbury. The district became the trial ground of New Zealand. It was the results from a small plot in the St. Andrew's district that saved Cross 7 wheat being scrapped by the late Professor Hilgendorf.

## THE FARMING 'PHASE

It is on this background that South Canterbury is quietly slipping into what we want to call the farming phase, the final era of farming development, where the land is put to the purpose for which it is best suited for the needs of the soil itself and the nation. Only until this phase is fully developed and maintained can 'the district really flourish and we are sure that the impetus given by the holding of this year's Grassland Conference here will quicken the development.

At the beginning of this address it was mentioned that the land area of the district is 3¼ million acres, of which 2,820,000 acres were occupied, the difference being barren land such as steep mountain sides and the area above the snow line. Of this area only 789,000 acres are capable of being cultivated by plough or discs and of this area only 14,700 acres have never been cultivated.

The development of the farming phase is, therefore, bound up in the proper use of this 789,000 acres, of which the majority is situated on the downs and plains with a smaller proportion in the foothills. Though the improvement of the high country and higher foothills is necessary both for soil conservation and production, it can proceed only to the extent that the provision of extra winter feed will allow, otherwise increased depletion will surely follow increased stock numbers. For it is realised that in these areas the limiting factors are summer heat and winter cold.

The farming future of South Canterbury is dependent on the land that is capable of being cultivated,

used, and improved. There is room no longer for farming by replacement; the replacement of one crop with another or with stock by crops or crops by stock. The improvement must be by producing more of everything. If this can not be done and we are therefore forced to go on farming by price structure, then there is no future for South Canterbury; and who will admit that? But South Canterbury has a future equal to the best of any other province. This could be assumed to be prophecy, but it is prophecy based on fact, for throughout the area there are many farms on which production by mixed arable farming has been trebled and fertility increased in the last 10 years.

To achieve this there are two aspects to consider. The first, the knowledge available and its dissemination. In this paper we do not propose to discuss these aspects, being confident that the papers presented, the discussions following, and the places visited will convince all that the practical knowledge is available and capable of successful application.

The second aspect is more complex, but it is becoming increasingly evident that it is the one for which we must find the solution, otherwise the first goes for nought.

It has been apparent for some time that the knowledge available to the farming community is not being applied to the extent it should anywhere in New Zealand. Otherwise production would have increased much more than it has, In South Canterbury we have done little more than hold production, but we think that this paper has shown extenuating circumstances which do not apply to districts outside Canterbury. Nevertheless, to use to the full the knowledge available some means must be found to ensure its universal adoption within a period much shorter than that which present progress indicates. If this is not found the whole advantage which we hold is lost.

This problem of application is real as far as the farming phase is concerned. It is the problem which concerns not only the poorly farmed downs land (and there is much), but it also concerns the downs and plains farms which have reverted to the profitable grazing phase. Again we must be reminded that the land must be used for "the purpose for which it is best suited ; for the needs of the soil itself and the nation,"

We are convinced that under existing conditions

the application of the farming phase does not lie in production plans or price structure talks, though they can achieve much. It lies with the individual, the man who holds the land. It is admitted that he needs help in many directions. Mixed arable farming requires more capital than any other type. Those concerned. with rehabilitation fight shy of it; they prefer the grazing phase where values can be assessed in units of sheep or cattle. Improvement and production on arable land costs money in establishment and annual working expenses which are fantastic to those outside its sphere. The majority of arable farms are starved for want of capital either because it can not be obtained or because the owners prefer the less expensive grazing method. Many of the older farmers who want to give up cannot do so for lack of somewhere to go. Despite these and other difficulties it still lies with the individual.

In our present social structure the rights of the individual are paramount, and it is proper that they should be. It has been well illustrated over the years that anything that interferes with individual rights is ultimately overthrown. Rights, however, bring responsibilities and obligations ; responsibilities that must be shouldered and obligations which must be fulfilled if rights are to be retained. The responsibilities of the farming community are to farm the land in the manner for which it is best suited and to maintain and increase its productivity. Their obligations are to provide those necessities which only they can produce.

On the downlands and plains there are many who are doing this, satisfied that not only can fertility be built, used, and increased, but that crop acreages, yield, and stock numbers can also be increased by the application of a sound rotation, the use of good seed, adequate maintenance of good pasture by lime and phosphate throughout its life, proper provision of feed for difficult periods, and adequate cultivation.

There are many who want to do this, particularly the younger men just starting; they see in this style of farming a style as old as mankind, a future of interest, achievement, and profit. Lack of capital and lack of confidence and vision on the part of lending institutions, who endeavour to reduce farming to cost structures employed in the manufacture of shirts, stifle this desire. Finally there are many, unfortunately the majority, who are exploiting the grassland

knowledge, pursuing a comfortable existence under today's profitable prices for meat and wool.

There is little encouragement for them to change to a style of farming that demands increased capital in machinery and implements and increased working costs.. In this policy they are aided and abetted by the present attitude of those who are engaged in the handling of produce when it is ready for delivery by the farmer., This needs some explanation. Through the producing season and at harvest farmers experience nothing but frustration and disappointment in the way their requests for disposal of their produce are met. There is nothing complicated in the facts that when crops are harvested they must be disposed of; when a lamb is fat it must be killed ; and we venture to say that if these products were handled with the speed and efficiency given to wool, production would rise immediately. The only. activity at the receiving end of agricultural production that has kept pace with modern farming is the road transport industry, and this is a pattern on which all others could well-be modelled.

If from next season South Canterbury produced another 50,000 acres of wheat, another 3000 acres of potatoes, and another 100,000 fat lambs (it could do so easily and ultimately will), how would this be handled? This is a real fear of the farmer and one which is delaying production.

Despite all these difficulties the farming phase will develop, and if these difficulties could be overcome, and surely they can, the phase would develop much quicker, which is what all earnestly desire. This is perhaps not the concern of the Grassland Conference, but some appreciation of the present position is necessary for a complete understanding of farming in South Canterbury. The predicted farming phase is absolutely dependent on grassland. Pastures should be ploughed while they still retain their vigour in high producing grasses and clovers so that the close relationship of grass, crop, and stock can be retained.