THE

OPPORTUNITY IN AUSTRALIA

BY

H. S. GULLETT.

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H. S. GULLETT.

WITH AN

INTRODUCTION

BY

LORD CHELMSFORD

(Governor of Queensland, 1905-9; New South Wales, 1909-13).

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INTRODUCTION.

I AM delighted to write a few words of introduction to Mr. Gullett's book.

In the first place, it gives me an opportunity of expressing my gratitude for the many happy years I spent in Australia. Secondly, I am profoundly convinced of the reality of the opportunities offered by Australia to its immigrants. Again, more particularly, I look upon the peopling of Australia's empty spaces, especially in the North, as a matter of urgent imperial importance. I welcome, therefore, this book as one tending to stimulate a flow of immigrants in her direction. Fourthly, I should like to urge the unwisdom of a policy which narrowly confines the aided immigrants to the classes of agricultural labourers and domestic servants.

Let me briefly elaborate these points. I was seven and a half years in Queensland and New South Wales, and in my capacity as Governor travelled many thousands of miles in these two eastern states, and was the guest of all sorts and conditions of men. Everywhere I received unbounded kindness and hospitality. It may be said that was due to my being the Governor. That is not so. If I had been Dick, Tom, or Harry, the welcome and the hospitality would have been the same. The Australian

is nothing, if not hospitable; no one is turned away from his door. He asks no question of the stranger that is within his gates—at least, let me put it in another way, he may ask questions *of* him, but he will not ask questions *about* him. For him it is enough that his hospitality is claimed. Unfortunately there are many rogues who take advantage of this fine trait, and flagrant abuse of it has not been infrequent.

I remember an instance of this. A rascal passed himself off as an officer of a distinguished British regiment. A girl who met him said, "Oh, then you know Captain Brown?" "Dear old Johnny, of course I do," was the reply; "do you remember his taste in socks? Whenever I see a particularly brilliant pair in a shop, I always buy them and send them to him." His ready reply and modern instance were convincing proof, and he was accepted by his audience as what he purported to be. Invitations flowed in, and he spent many happy days at charming places, until he thought it wise to make himself scarce. Alas! soon afterwards there came inquiries from the police about him and his whereabouts. But it makes no difference to the Australian. He would prefer to be deceived rather than commit a breach of his great law of hospitality. And who will say that he is wrong? Certainly, not I who have received and enjoyed so much of it.

And so let me say to the immigrant, that this hospitality is equally open to him; but let me warn him that guests have duties as well as hosts, and that the guest who invariably sees the worst side of the country which

has adopted him, and pours out his soul everlastingly on the subject, will quickly find that Australians can be outspoken as well as hospitable.

In the second place, travelling, as I did, all these many miles, I had unrivalled opportunities of seeing every variety of country and every variety of occupation. I can, of course, only speak of Queensland and New South Wales, but let me remind the reader that these two states alone comprise 980,000 square miles, eight times the size of the United Kingdom, and equal in area to France, Spain, Germany, Austria-Hungary, and Italy combined.

I once had occasion to travel from Brisbane, the capital of Queensland, to Thursday Island in the extreme North.

The journey was all by sea and within the limits of Queensland, and the distance was approximately the same as that from Tilbury Docks to Gibraltar. It is sometimes well to remind English readers of the vast size of Australia.

Mr. Gullett describes the great pastoral tracts, the wheat districts, the dairying country, the sugar-cane plantations, the agricultural areas, and the opportunities offered by these various industries. I have seen types of all these districts; I have had peculiar advantages for seeing them well; and I have no hesitation in saying that he has not painted too rosy a picture. No doubt it will be said against this, Australia is in a special measure given over to droughts, and a man's possessions may be swept away in a very brief space of time.

Personally, I have been fortunate, inasmuch as since 1905 there have been bumper seasons, and I have had no experience of a drought; but I honestly believe that each

year makes droughts less formidable in Australia, and I gather from information I have received that in Queensland, at least, the small man has come through the dry times of the last few years better than was expected in some quarters. The discovery of the great artesian area and of water in most districts at no great depth down; the extension of the railway systems; the great advance in scientific farming; and, finally, the caution engendered by bitter experience, having as its results the careful limitation of the numbers of stock in the pastoral districts, and in the dairying districts the conservation of fodder and of water—all these tend to make Australia more secure than she was in the past against the ravages of drought. Moreover, closer settlement ought to purchase comparative immunity for the smaller man, for each small settler will be doing his little best against the perils of a dry time, and he can give more individual attention to his smaller number of cattle or sheep.

No; in my opinion, Australia is indeed a land of golden opportunities for those who are capable of taking them; and qualities of the highest sort are not needed for success. I make bold to say that any man who is adaptable, industrious, and steady is bound to succeed.

The immigrant must not be fastidious; he must be ready to turn his hand to anything. Australia is no place for the man who says, "It is not my job," but she has a very warm and kind heart for the man who tries, and really puts his back into a piece of unaccustomed work.

It is unnecessary to dilate on the need for industry, but I must say a word or two on that third indispensable

quality, viz., steadiness—I mean, of course, in special regard to drink. Mr. Gullett has written well and wisely on the subject, and I shall only add a few words in endorsement of what he has said.

It is no use blinking the fact that the temptations to drink in Australia are many and great—I suppose they are equally so in most new countries. The heat; the monotony of the solitary life; the good fellowship of the bush hotel; perhaps depression caused by the unaccustomed toil or momentary ill-success; all contribute their quota. But against these the immigrant may set the very real possibility of making rapid and substantial savings, and the genuine respect which a steady man quickly earns, and which will prove one of his most valuable assets. I doubt whether any genuinely steady man is for a long time out of a job in Australia; and let me protest here against the habit too common in England of sending out young men to Australia who have a tendency to drink, under the belief that in a new country they will rehabilitate themselves. A new country is the worst sort of place for that style of man; it does not want them; and the experiment more often than not ends in a tragedy.

And now let me pass to the wider imperial aspect of this question. Occupation of territory will undoubtedly, as the years go on and the empty spaces of the world are filled up, be only regarded as legitimate against the world, when it is effective. Can it be said that Australia is effectively occupied? Mr. G. H. Knibbs points out in the official year book of the Commonwealth of Australia, 1901-1911,

that Australia "has a density of only 1·53 persons to the square mile, and is, therefore, the most sparsely populated of the civilised countries of the world." No one who has lived for any time in Australia can fail to be otherwise than sympathetic to its ideal of a white Australia; but two things follow from it: first, the difficulty of the problem of filling up the country is enormously enhanced; secondly, the urgency of the policy of encouraging immigration is greatly increased. The peril of Australia's position is even more strikingly shown, when the figures of the population in the Northern Territory—that most valuable portion of the continent—are considered. The Census of 1911 gives us a population of 3248 persons in a territory of 523,620 square miles, in other words a density of ·006 persons to the square mile.

The Federal Government has recognised the danger of this state of things, and gallant efforts have been made during the past few years both to put the administration of this great territory on a sound footing and to stimulate immigration into it. It is early days yet to judge of the success or failure of the experiment, but one may perhaps be permitted to suggest that the key of the situation is not to be found in Port Darwin or in the Northern Territory at all, but in the southern states of Australia. Surely the history of all settlement has been that the easier and more accessible lands are first occupied, and only, when that has taken place, will men overflow into the remoter regions. By all means have your administration and your attractive land tenures all ready, but beware of provoking a reaction against the policy by piling up

expenditure greater than is required by the needs of the immediate future.

If these views are sound, all the more need for a vigorous immigration policy, which will people the South, and expedite the day when a natural overflow will take place into the unpeopled North. Such a policy will not only have that result, but it will provide a population out of which a fighting force could be raised which would safeguard the North during its unpeopled era. Australia is rightly jealous of her high standard of living and of her widely diffused comfort. But her population could be increased manifold before any peril to these could arise, and, personally, when I consider the fertility of her soil, her wonderful resources, and her unmatched climate, I believe she could surpass most European countries in density of population without endangering the material ideals on which she lays such great stress.

I come now to my last point. There has been a tendency of late years in some directions to restrict the class of aided immigrant to agricultural labourers and domestic servants. I am doubtful whether any such limitation is really wise. I cordially agree that Australia should very carefully scrutinise the class of immigrant which is introduced; she has a right to say that she will not be the dumping ground of the undesirables and the unemployables of the Old World, but such a precaution is a very different thing from rigidly limiting the classes to which she will extend her aid. It is, I think, at least doubtful whether agricultural labourers as a class are the best type of immigrant for Australian conditions. The man

who succeeds in a new country must be handy and quick-witted. These are not qualities which are usually associated with this class of labour. They are more usually found in the young town-dweller, and if some such training were given to him as was proposed by the *Morning Post* scheme last year, a very useful type of immigrant could be secured, whose wits would be capable of meeting any situation, and whose physique would quickly respond to the healthy outdoor work on the land. Better still, if the British Local Government Board could only be persuaded to establish training institutions for this class, with an understanding that the Australian Governments would accept as aided immigrants those who proved fit, I feel confident that the results would amply justify the experiment, and that neither the British nor the Australian Governments would have reason to regret the trouble and money expended upon it.

There still remains the child immigrant from twelve years to sixteen years of age. This is a possible source of population which has been very imperfectly tapped. Here and there individual efforts have been made to inaugurate schemes of child immigration, but immigration schemes should not be a matter for individuals, and so far as I am aware Governments have not taken up any such schemes. And yet anything could be made of such children; they could be moulded physically, mentally, and morally to suit their new environment. They would have few recollections of, and less hankering for, the land of their birth, and consequently would speedily adopt their new home; they would reap all the advantage of the

splendid Australian climate and of the healthy outdoor life during their years of growth; they would pick up, with the quickness of youth, those qualities of self-reliance and of handiness, which seem to be innate in the Australian native-born; and in the years to come they would prove a stable element in the community, grateful and loyal to the land of their adoption.

These are in brief a few thoughts which have occurred to me while reading Mr. Gullett's book. He has very clearly and fairly marshalled the opportunities which Australia has to offer; and I hope that as a consequence many people will be induced to turn their thoughts, if not their steps, in her direction. Australia is destined in all human probability to be a great power in the Pacific, and all those who wish her well must hope that, when her opportunity comes in future years, she will, as a result of a wise and a generous immigration policy in the past, be in a position to take it.

CHELMSFORD.

18, Queen's Gate Place, S.W.

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THE OPPORTUNITY IN AUSTRALIA.

CHAPTER I.

PIONEERS.

WHEN my memory begins, the worst of the pioneering was finished on the selection. Our block, like the rest of agricultural land in Northern Victoria, was taken up from the Crown at 20*s*. an acre, payable in twenty years. That was in the early seventies. Ten years later half the holding had been wholly or partially cleared, and my first recollection is of the night fires about the trunks of the timber still standing. Four rooms of sawn hardwood had been built beside the large log and plaster "kitchen," which, with its bark roof, had for a year or two after the start been the only dwelling-place on the block. Half an acre of various fruit trees and a little flower garden surrounded the homestead; the railway, which in the opening years was forty-five miles away, ran within six miles of us; the land had in ten years advanced in value to about £3 an acre. The worst of the work was over; the green bush was vanishing, and the loneliness which made the pioneering so rough on the woman-folk was past.

I did not then know what it was to have missed the pioneering; to have come too late to see the selection covered with a green eucalyptus forest untouched by the axe, too late to ride in shadow over the 320 acres and choose the site for the homestead on the little sandhill in the north-east corner, or to set about the ring-barking and the clearing, and all the rest of the work which is the most satisfying in the world—the carving of a home out of the wilderness. Only in after years, when I had taken to the

soft life of the cities, did I realise what it was not to have worked with the pioneers. But if we missed the beginning, still, as children, we thought our lives quite rough and hard enough. We helped at the "burning off" of the last 160 acres; we milked the increasing herd of cows each morning before we trudged two and a half miles to the little bush school; and at the ploughing and harvesting we worked long days from as soon as we were able to pitch a sheaf or steer a team of horses as they pulled the harrows. What climbs we had up those kindly great plough horses' legs to ride home from the paddocks at nights! What blisters on our tender little feet! What appetites for the cold mutton which, month in and out, awaited us for our tea! What depth of unbroken sleep, and what rubbing of eyes when awakened in the darkness of those winter mornings! Looking back on it now, it was rough and harsh enough, but even then our neighbours, when they came together, talked with an affection touched with sadness of "the old days," when they rode and drove eighty miles in a day to civilisation south of the Dividing Range, and later when they carted their wheat forty-five miles to the nearest railway station at Avenal. They regarded the days when we began to work as attended by conveniences calculated to pamper and spoil.

We had thought them excellent days if we could have cut out the schooling. Forty attendances had to be made each quarter at the little State school, where our education was given to us free, or our parents were liable to summons. So under heavy pressure we did our one-hundred-and-sixty days in the year, and seldom more. The long walk and the work about the cow-yards morning and evening, and the feeding of calves and pigs, did not stand in the way of plenty of sport. The Municipal Council, hopeful of checking increasing rabbit and sparrow pests, paid us twopence each for scalps and heads, and a penny apiece for eggs. We coursed, roaming wide of the track, to and from school, until that was prohibited in the interests of keeping time; and frequently in the luncheon hour we organised paper

chases and ran three or four miles through the green bush of an adjoining selection on which the clearing was belated. We sometimes dozed over our lessons, and an understanding teacher regarded sleeping in school hours as no serious offence. The physical work was never lacking, and yet our appetite for recreation was seldom jaded, and some of those sleepy little selection children were keen and clever students. Horseflesh was cheap in those days. Before we were in our teens we had our own ponies, and as soon as possible discarded these for full-sized horses. Each spring the agricultural show came round and provided us with two days' excitement, prefaced by weeks of preparation and dreams about the prize-winning possibilities of various animals—dreams which were all too rarely realised. In the show week, too, there were concerts and bazaars, and as the years went on and the township grew, travelling theatrical companies and the cinematograph. On St. Patrick's Day fell the annual races, for which, as for the show, the rough stable on the selection usually contained a hopeless candidate, which lost condition as it fretted and sulked for its companions running out in the open paddocks.

Good selection days! Hard as they were, we rejoiced when we no longer had to go to school; we deemed it more pleasant to work all day than to sit over our books in the little wooden schoolhouse. Twenty years after selection, the block was sold for £5 an acre. That was about the time the irrigation came to the Goulburn Valley. The old selectors laughed at the "new fangled" thing. Their crude tanks, excavated from the land, and the river ten miles away, were good enough for them. Many of them fought the proposal to "flood the country." On our selection we planted 10 acres of fruit trees, and another 10 acres of vines, and as the export market was not then developed we lost heavily by the venture, as well as adding infinitely to the labours of our growing young bodies. But how good it was to have fruit nearly the whole year through, and an overflow of grapes for wine and raisins (crude as were our methods, there never was wine like that stuff we

first brewed in the old straw-covered granary adjoining the stable on the selection), and apricots and peaches and apples, fresh and for drying! And when the water came down the canals, our womenfolk grew half an acre of irrigated flower garden the like of which was never seen out of lands of strong sunshine.

But I must hurry on to the more serious side of this little book. As we grew up, four more rooms were added to the homestead. Refrigeration came and the export market was developed. Land jumped in values. The selection has since been sold for £11, and then for £15. To-day it is worth more. Meanwhile the irrigation attracted scores of smallholders, who, settling close together on blocks of from 10 to 100 acres, completely changed the social conditions. At present the few remaining pioneers are old men. They never overcame their dislike to the small irrigated blocks and refused, with rare exceptions, to engage in the highly profitable intensive cultivation which the presence of the streams of clear river water running through their farms made so easy. They were too old and fixed in their methods to change. They referred to the irrigationists as so many "—— Chinamen." Most of them began as working men with no capital beyond their strong arms and a determination to take cheerfully the rough life of the pioneering. Most of them lived to establish comfortable homesteads on holdings worth a few thousand pounds. Some reached wealth; one within six miles of our block entered Parliament and became a Minister of the Crown; some as they made money, sold their farms and moved up into New South Wales with enough capital to become small squatters; occasionally there was a failure, but none failed before they had gone far with their pioneering, and so failure is scarcely the right word to use (to even the failures the young Australian nation and the whole British Empire owes a debt which cannot be measured); some sent their boys to college and university.

To-day all that country is worth about £15 an acre, and without irrigation it would be worth about £10. And this is the common story of the Australian pioneer. The early years were hard and lonely, although the labour and the loneliness are forgotten as the settler sees his clearing expand, his harvest increase, his live stock multiply, and his financial position become assured. The life is extremely simple. It is attended by no adventure. There are no lions or other big game as in Africa, no Red Indians as in early America, no call for revolver, very little use for the rifle. Bad seasons come, although they are in a minority: as a rule the reward is generous and uniform. The community is all British; we had at our little school no foreign blood. Although only less than twenty in number, we included English, Scotch, and Irish. We knew no differences about religion. When Fridays came, little Roman Catholics exchanged their tarts and cakes for the sandwiches brought by little Protestants. Like our parents, we were too engrossed in the changing countryside to trouble our heads about class or creed.

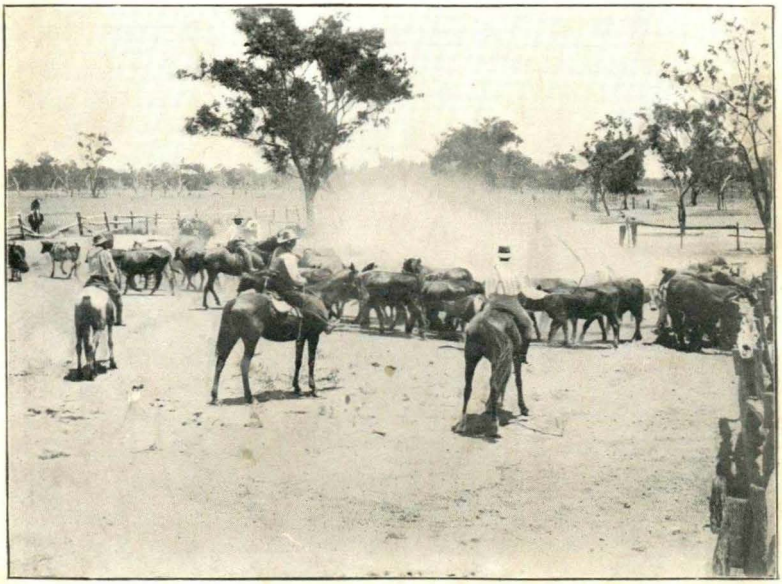
CHAPTER II.

THE TEST.

BETWEEN 1895 and 1905 Australia made an average gain by immigration of five hundred people a year. Then things changed. It became recognised that a population of four millions was set a hopeless task in the development and defence of a continent measuring nearly three million square miles. The opportunity was advertised in the United Kingdom by both the State and the Federal Governments. Cheap passages were provided for approved people. The Mother Country became interested. A new stream of immigration was started, the first of any magnitude since the rush to the goldfields in the fifties. In 1908 the net gain by excess of arrivals over departures was 17,000; in 1909, 29,000; in 1910, 37,000; in 1911, 69,000; in 1912, 93,000.

The State and Federal Governments played the chief part in starting this movement, and are still giving it substantial financial encouragement. The Australian people have been careless about immigration, and even now are perhaps not as earnest about it as they should be. One is safe in saying, however, that quite half a million sterling is now being spent each year in attracting new settlers of the best kind to the Commonwealth. Nearly all of this money goes in paying part of the steamship fares of farmers, farm workers, British lads, of all classes, between 16 and 20 years who declare their willingness to engage in farm work, and domestic servants. This policy makes it an easy matter for people of these four classes to make the long journey. For instance, during 1913, farmers

IMMIGRANTS LANDING.



ON A CATTLE STATION.

and farm labourers could secure a fully paid ticket for £8, domestic servants for from £1 to £6, according to the State to which they went, while growing boys were given passages for £7 cash, or they could, if they wished, travel for a £2 deposit and arrange for another £8 to be paid back in instalments out of their wages after they reached the new country. Every worker who receives a reduced passage carries a Government guarantee of employment at specified wages upon landing. But all the activities of the Governments would be fruitless unless the people who went to Australia were satisfied with their venture. Letters written in Australia are read a month later in the English provinces. The flow of new settlers to the Commonwealth would cease at once if those who preceded them by a few months had not been successful.

Those of us who know the extent and the fertility of the agricultural lands of Australia, and who have been able to compare them with the lands of other nations, are not surprised that the immigration movement, once re-started, has grown so rapidly. It will fluctuate, but we do not doubt that it will continue, or that the results of the past few years will be eclipsed in the years immediately ahead. The bulk of the new people have gone upon the land. Some have bought farms at once, but most of them have begun by working for wages. It is my purpose here to indicate the lives they are leading, and the ample room Australia has for many millions more of the same classes.

The vital test of the rural possibilities of any country is in its possession of fertile lands within reach of satisfactory markets. For the greater part of a century, after the first settlers landed at Botany Bay, Australia could not stand this test. Fertile lands in great variety abounded. But, few as the rural settlers were, they seldom failed in average seasons to over-supply the available markets. To-day, their position is entirely changed. Detailed exploration and investigation have revealed further and still further expanses of highly productive soils, and, thanks to the opportune development of deep sea transport, there is now open to

the producers of the young country markets practically impossible of over-supply.

Let us take first the extent of the territory adaptable for farming settlement. A popular description of Australia is that it is a vast, scantily watered land, narrowly fringed with a strip of soils blessed with good rainfall. This description, although very unjust and misleading, may be frankly accepted, and it can still be shown that the Fifth Continent is capable of supporting a huge and wealthy population. In Australia everything is dependent upon rainfall. The practices of a century have shown conclusively that wherever there is a rainfall in excess of sixteen inches, closer settlement will prosper. The total area, exclusive of the ninety thousand square miles in the colony of Papua or British New Guinea, is, roughly, three million square miles. Of this, upwards of one million square miles have a rainfall in excess of twenty inches. Our best wheat districts have a rainfall of only eighteen or nineteen inches, while very satisfactory results are being obtained on fifteen and sixteen inch country. Each year, too, better methods of cultivation, which come with experience of the proper treatment of soils favoured by low rainfall, are extending the zone of what is known as safe agricultural country.

So that if we throw out the mountain ranges and other areas within the twenty inch rainfall strip, which are for various reasons unsuitable for intensive practices, there still remain quite one million square miles of farming soils. Roughly, this is equivalent to the combined areas of Germany, France, Spain, Italy, the United Kingdom, and Sweden, which carry a population of nearly two hundred million people. Australia now contains less than five million people, so that there can be, for another century or two at least, little danger of the Commonwealth becoming overcrowded. It will be shown, too, that beyond this zone, on which the natural rainfall is adequate for farm practices, there are almost boundless possibilities by the aid of irrigation. Australia's inland rivers are not

imposing, but, by the assistance of the engineer, wide expanses of fertile soils will, as time goes on, become the most fertile and densely populated of any part of the continent.

The traveller from the Old World is impressed with the emptiness and waste of soil in even our oldest and most closely settled parts of Victoria, South Australia, and New South Wales. There is not a single district in the continent of which it can be said that the best is being made of the opportunities, not a district in which further subdivision of the individual holdings is not possible without diminishing the earnings of the present farmers. It may broadly be laid down that every Australian farmer at present is possessed of more land than he can cultivate to advantage. Everywhere, indeed, you find the tendency, strange as it seems, to larger rather than to smaller farms. The lust of land is strong in the people. On those areas which were settled, say, twenty or thirty years ago in blocks of 320 acres each, the tendency is for one successful holder to buy out another, and for the seller to migrate to newer districts further north or inland, where his capital will enable him to take up a block many times larger than that which he has relinquished.

This unrest among the pioneers suggests the boundless territory which still awaits the plough. Every branch of farming is capable of indefinite expansion. For example, take wheat. The country suitable for wheat in Australia is roughly estimated at 200,000,000 acres. This is a conservative estimate, and yet to-day the area under wheat is only 8,000,000 acres. It is the same with dairying. In little more than a decade our dairy herds have been doubled from one to two millions, while, as yet, the dairy country has only been spotted, and the methods in practice are slipshod in the extreme. So, too, with fruit. You may say that fruit can profitably be grown wherever the rainfall is sufficient for general farming. Between 1901 and 1911 the area under orchards expanded from 145,000 acres to 194,000 acres. But the orchards are scarcely noticeable

in a journey through even the most closely settled districts.

Then there is tropical Australia, which may be correctly described as a wide forest region, as rich naturally as the Indies, and as yet scarcely scarred by the axe of the pioneer. Men spend whole lives in our tropical north, and can remember all the people they have met in each decade, while they can count the white women they have seen in twenty years. Mrs. Æneas Gunn, in her delightful book, "We of the Never Never," tells a story which indicates the undisturbed wealth of the north. She was camping with her husband, a cattle-station manager, in the Northern Territory, some twenty or thirty miles from the homestead. Stores were sent out from time to time from the homestead, and one day there came, by way of surprise from the Chinese cook, a large cabbage. As night fell and the evening meal was being prepared about the camp fire, an over-landing drover rode up. Attracted by the fire, he doubtless expected to find an aborigines' camp. He was surprised at the sight of the white manager and two or three white stockmen, and embarrassed at the phenomenon of a white woman. They greeted him cordially. The stranger is very welcome in these isolated parts. The bushman was so nervous in Mrs. Gunn's presence that for some time he was almost speechless. Then the cabbage was lifted steaming from the tin in which it had been boiled. "Good Lord!" he gasped, "I haven't seen a cabbage or a woman for five years!"

It is hard to believe that a country eminently suited for Europeans, and teeming with the possibilities of heavy production and nation building, could exist in such a state in this land-hungry twentieth century. While Europe and Asia are bursting with people, Australia, every bit as rich square mile for square mile, has not yet been even fully explored. It is impossible that such an anomaly can endure. With Japan overflowing in the East and Germany in the West, with European Powers spending millions of money and thousands of lives and risking international chaos for a

foothold in the desert region of Northern Africa and remote Central Asia, it cannot long continue that the world should contain a whole empty continent.

Markets.

Obviously no land, however vast and fertile, is attractive for the settler unless there is a market for its produce. Again and again in the last century Australia suffered from over-production. Just prior to the discovery of gold in the early fifties, livestock could scarcely be given away, while the absence of railways made agriculture impossible except within a short mileage of the new coastal settlements. The gold discoveries brought in hundreds of thousands of fortune seekers. Between 1851 and 1861 the population jumped from 437,000 to 1,168,000.

For a while the gold fever possessed everybody. Settlers deserted their farms, just as the clerks and tradesmen in the cities abandoned their pens and their planes; the crews on the incoming vessels fled from low wages and hard lives before the mast. But it quickly became recognised that the sudden fortunes which excited the whole world fell only to a small minority. Rich without precedent as Australia's alluvial fields were, they disappointed, as does every gold rush, the great bulk of the diggers. Meanwhile, all foodstuffs rose to famine prices. Farm produce became almost as precious as the occasional nuggets. Hundreds and then thousands of the disappointed miners turned their attention from the shaft and the cradle to the fertile virgin lands which they saw everywhere surrounding them. This led to the first real move which Australia made in agriculture.

But as the stream of immigrants which the gold discoveries attracted fell away, and the new farms of the cultivators came into production, the shortage of food of all descriptions was swiftly corrected, and very soon it was found that the soil was again giving more than the local markets could consume. True, there was an unlimited outlet for wool and hides and wheat and other imperishables. But there was no chance of exporting fresh meat

or butter or fruit and other lines of produce which are now the chief output of large areas of our land.

Not until late in the eighties did the cream separator and the improvement in cold storage accommodation on deep-sea vessels come and completely alter the outlook. From that date oversea markets were provided for all the produce the country could raise. The great markets of the world lie in the northern hemisphere, and Australia is far away in the south. To travel from London by sea to Melbourne, which we may take as roughly the centre of those parts of Australia which are productive, takes about six weeks. Our farmers might, on the ground of distance alone, appear at a hopeless disadvantage against their fellows in Europe and North America.

But water carriage is cheap. Produce of all kinds is conveyed from Australian ports to London and the Continent at prices which a few years ago would have been deemed impossible. Fresh meat makes the journey for $\frac{9}{16}d.$ per lb., butter for $\frac{1}{2}d.$, fresh fruit for less than 1d., while the charges for wheat, wool, wine, and other commodities are relatively low. And these rates are quite normal; they are not the result of any temporary policy of suicidal competition between the shipping companies. Most of them are based upon contracts running over a number of years between the exporters and the ship owners. The tendency should be for them to decrease rather than increase. It takes very little knowledge of the subject to know that such a cost of transport is no burden upon production. The Australian coastal farmer is actually able to reach the London market with his produce as cheaply as the farmer of the English Midlands or Wales. He is in a much better position than the wheat grower in the Canadian North-west, who has a long and expensive railroad haulage before coming to water transport. Add to these cheap freights the low prices asked for land in Australia, and you have the explanation of why farming is more attractive there to the man with limited capital than it is in the Old World.

But the marvel of this transport half way round the world is not its cheapness, but that it is possible at all for such sensitive produce as butter, and fruit, and meat. Nothing more impresses one with the achievements of modern science than to see cows being milked in the sub-tropical and even tropical districts of Australia, and butter being manufactured for the bread of the British public. It is hard to believe, too, when you see Australian sheep being slaughtered, that one day two or three months later the mutton will be retailed in a perfectly fresh and wholesome condition in London or Berlin. Likewise the Australian in London, who has worked in the heat of southern orchards and vineyards, always thinks of the miraculous when he enjoys Australian apples and grapes which are as delicate in flavour as those he was accustomed to pluck twelve or fourteen thousand miles away. And each year further improvements are being made in this transport. The latest victory has been in the export of table grapes. Mr. Barrett-Lennard, a vigneron near Perth, in Western Australia, went a few years ago to Southern Spain, and there investigated the varieties of grapes and the methods of packing used in the export trade to London. Returning to Australia, he boldly announced that within a few years the export of table grapes to Europe and other parts of the world would be a large and valuable industry. The Australian people smiled. But Mr. Barrett-Lennard has made good his prophecy, and is now sending grapes in large quantities both to London and the Far East. You may buy this fruit in England during March, April, and May, and will find it hard to believe that it has travelled half way round the world, and come for a great part of its journey through tropical seas.

The subject of marketing makes dry reading. But so much depends upon unlimited export facilities for every kind of Australian produce that the matter must be strongly emphasised. Australia will probably be rapidly filled up with population. Big local markets may be close at hand. But the settler to-day cannot gamble about the future.

He wants to be sure when he buys his dairy herd, sows his wheat, or plants his orchard, that there are assured purchasers at good prices for all that he will produce. The development in all industries in recent years has been based upon export prices. In other words, the prosperity which has distinguished the Commonwealth for the past decade is the result of sales in the world's markets. The average prices for wheat on the Baltic, fruit at Covent Garden, meat at Smithfield, and butter in Tooley Street pay our farmers handsomely. Since we have been able to export on an unrestricted scale, the gambling element, always associated with pioneering, has been largely, if not completely, eliminated.

And our farmers are not only assured of an entry to the Old World's markets, but their produce arrives there at the season of the year when prices are highest. This is simply explained. The Australian midsummer or harvest season comes in December. The bulk of production is between September and March. During these months the pastures are at their prime. The export of butter and meat and wheat and fruit is in full swing. These are the months during which the Old World is under the cold hand of winter. Northern production is at its lowest. Markets, if supplied at all, are supplied with the product of expensive hand-feeding, the use of the hothouse, and the relatively inferior produce which has been for several months in cold store. Prices for all foodstuffs are notoriously higher in England from November to March than in the other months of the year, while the shortage in fresh fruit extends almost until June. Those are the months in which the Australian settler pours his cheaply won produce into London. The result is that the average prices secured by our farmers for all they export are actually higher than those secured by the farmers of England and the Continent. And, strange as it seems, London's prices dictate Australia's prices. Wheat and butter and meat are cheap or dear with us in Sydney or Melbourne or Hobart as they are

cheap or dear in London. The export regulates the local prices.

What is true of Europe in this respect is equally true of North America. Within the last few years the Republic has been actively sampling the goods of the Australian farmer. Shipments of fruit and butter have been highly successful, while in May of this year the first consignment, comprising four hundred thousand pounds, of Australian beef was landed at San Francisco. The consuming power of the American people threatens rapidly to overtake home consumption. Heavy imports of foodstuffs are certain within the near future, and, as in Europe, the demand will be strongest during the northern winter and the Australian summer. Somewhat similar forces are operating in the Far East. Adoption of Western practices is creating the Western appetite for meat. The Japanese are no longer satisfied with their extremely frugal diet, and as China further awakens, the same discontent may be expected there. The Far East appears to promise an enormous outlet for the produce of Australia's fertile acres.

CHAPTER III.

The Paternal State.

From a political standpoint it is sometimes urged that the Australian State interferes too much with the life of the citizen. But one's prejudice against an excessive policy of Government paternity quickly disappears when one becomes a land settler. It must be remembered that the Federal and State Governments hold vast areas of fertile land on trust for the people. The function of the State is to settle and develop these domains for the ultimate benefit of the nation. The State as a land-owner has no hungry shareholders to satisfy. The object is not to sell and develop the lands with a view to the payment of dividends upon local or foreign capital. Success is not measured by high prices extorted from the stranger by misleading fancy advertisements and exaggerated stories of possible production.

The Government secures the land for nothing, and passes it on to the settler loaded only by the cost of bringing it within railway communication and making it ready for occupation. Where the country has been resumed from previous large holders, the price paid by the State is on a fair market basis, assessed not at its value in small holdings, but upon its value to owners who have worked it upon a large scale. Thus large pastoral areas, suited by rainfall and locality for agriculture, are bought at a price slightly in advance of their pastoral value. Smaller areas resumed for irrigation are paid for on a basis a little in advance of their dry farming values. The Government does not drive hard bargains with the

original holders, many of whom are dispossessed under compulsion; but at the same time it takes special pains to ensure that the prices paid permit of the land being offered to small holders at very cheap rates. The new man pays for small retail parcels of agricultural land on the basis of the wholesale price paid by the Government, plus only the charges necessary for sub-division and occupation.

This policy means that the Australian State is able to offer to its own local land seekers and to settlers from other parts of the world land at low prices. Contrast this policy with that followed by private land companies, and it is obvious that the purchaser from the Government must be at a distinct advantage against the purchaser from those whose business it is to make the largest possible profits out of their dealings. It might be asked why a Government should not legitimately aim to make money out of its land transactions. But obviously that would be a shortsighted policy. It is the first duty of State and Federal Governments in Australia to increase the population up to a point of national safety. New settlements mean more immunity from aggression: every holding taken up by the land-hungry man from Great Britain or America means the introduction of one or more families, the employment of labour, an increase in national wealth, a greater sense of security, and more prosperity for the people as a whole.

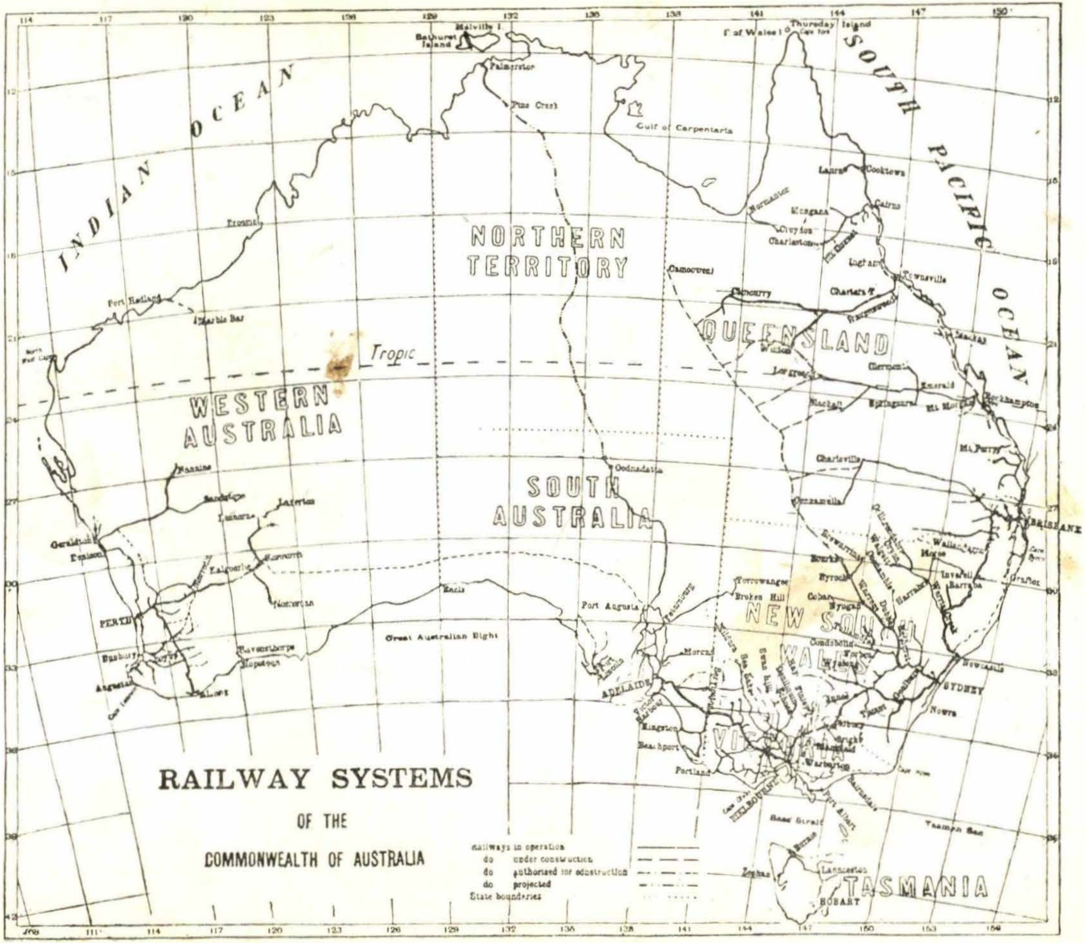
Another important point about Australian land settlement is that the Government owns the railways. And the policy of working the railways is precisely the same as that of settling the lands. Our Government lines and their rolling stock are constructed out of money borrowed upon the security of the State as a whole, at the lowest possible price obtainable in London. The average interest paid upon the £270,000,000 which makes up the Australian Public Debt is 3½ per cent. Of this amount no less than £160,000,000 has gone into railway works. It is not the purpose of this little book to enter upon a defence of State as against the private ownership of railways. Possibly under a privately owned system Australia would be better

served with railway lines than she is to-day, and perhaps the actual cost of construction might have been lower if carried out by private enterprise. But the fact for the land settler to remember is that there is little or no duplication in Australian railway services. You find no great rival tracks competing for the service of a single territory. With rival tracks the settler may at times enjoy low charges, which are the result of throat-cutting competition; but it needs very little consideration to reach the conclusion that the cost of building and maintaining rival competitive works must sooner or later be borne by the residents upon the area served.

The purpose of Australia's railways is primarily to serve the State and develop the unused land. Charges are regulated to pay the interest upon the borrowed money and the cost of running, maintenance, and wear and tear. If at the end of a financial year the railways have shown a substantial profit, as frequently they do, there is an immediate reduction in freights and fares. In other words, Australia's railways are owned by the people upon a co-operative basis, and a special preference is given all through to the rural settlers. For although it is true that Australia's cities are abnormally large, the urban people have not lost sight of their utter dependence upon the prosperity of the country behind. Fares and freights are framed on a scale which differentiates in favour of those who dwell furthest from the seaboard. The young nation is sympathetic with its pioneers, and, indeed, apart from any sentiment, it has been found necessary to give encouragement to the folk who will face the loneliness and relative hardship of life "out-back."

Thus, while in New South Wales the haulage rate per ton of produce for fifty miles is 5*s*., for two hundred miles it is 9*s*. 6*d*., and for five hundred miles, 12*s*. This is but one example of the policy of running railways primarily to extend and improve the country's development.

For many years the Government railways were open to the charge of injurious political control. This, however, is


RAILWAY SYSTEMS
OF THE
COMMONWEALTH OF AUSTRALIA
Railways in operation
do under construction
do authorised for construction
do projected
State boundaries
INDIAN OCEAN
SOUTH PACIFIC OCEAN
NORTHERN TERRITORY
WESTERN AUSTRALIA
SOUTH AUSTRALIA
QUEENSLAND
NEW SOUTH WALES
VICTORIA
TASMANIA
Tropic
Gulf of Carpentaria
Great Australian Bight
Bass Strait
Tasman Sea
Melville I.
Bathurst Island
Thursday Island
Palmerston
Pine Creek
Cooktown
Cairns
Townsville
Charters T.
Rockhampton
Emerald
Charleville
BRISBANE
Cunnamulla
Bourke
Broken Hill
Port Augusta
ADELAIDE
Kingston
Beachport
Portland
MELBOURNE
SYDNEY
Newcastle
Nowra
Grafton
Launceston
HOBART
Zeehan
Burnie
PERTH
Bunbury
Augusta
Geraldton
Port Hedland
Marble Bar
Kalgoorlie
Laverton
Norseman
Ravensthorpe
Hopetoun
Albany
Eucla
Oodnadatta
Cloncurry
Camooweal
Normanton
Croydon
Longreach
Springsure
Mackay
Mt. Perry
Cobar
Nyngan
Condobolin
Forbes
Wyalong
Goulburn
Moree
Inverell
Tenterfield
Warrnambool
Port Albert
Sale
Albury
Tocumwal
Hay

now past. In every State the services are administered by independent commissioners, who in most cases have been drawn from the United Kingdom and North America at high salaries. These officials are almost arbitrary during their term of office, which extends as a rule for several years. They report each year to Parliament, and are sometimes subject to sharp public criticism. But their judgment cannot be influenced by the capricious will of the Government of the day. In railway construction sinister political influence has practically been eliminated. In the early days there were occasional instances of politicians taking advantage of inside knowledge about the pending construction of new lines. Proposed new railways to cost more than a few thousand pounds are now considered by Public Works Committees, which hear all available evidence in public about rival routes and probable revenue, and jobbery is a stranger.

There are now open for traffic about eighteen thousand miles of Government railways. In addition to this there are one thousand and nine miles owned by private companies, the chief of which is the Midland Railway Company of Western Australia. This company received a grant of 3,500,000 acres as a concession for building its lines, the principle operated being similar to that adopted in Canada. There are one or two smaller lines in Tasmania, but, with the exception of these, the private railways are chiefly owned by mining companies, and seldom affect the rural settler. During the present century there has been unprecedented activity in railway construction by the States. Thousands of miles have been added, and thousands more are now in the course of building. Some of these lines follow the dense forest, and highly fertile coastal margin, to which new value and life has been given by the dairying industry, but the majority of them are striking out towards the interior. Briefly, it may be said that it is the aim of the State to bring all the land with an agricultural rainfall within about fifteen miles of railway communication.

A glance at the accompanying railway map of the continent will show how poorly served the Commonwealth is with railways at the present time. And yet if all the land which now lies within fifteen miles of the railways were settled upon the European scale, there would probably be a hundred million people in Australia. Much settlement precedes railway construction. The weakness of State-ownership is that it too often lacks boldness. It is hard to get Parliamentary approval for an Australian railway which does not promise almost immediately sufficient revenue to cover the interest upon the works and the cost of running. This policy throws upon the pioneer the task of justification. However, the tendency now is towards more courage by the State, and it can safely be said that where the railway does not actually go first, it is quick to follow the enterprise of the settler.

If Australia decided to pledge its national credit for new loans amounting to £100,000,000, and spend the whole of the money upon new railways into fertile regions, and backed up this step with a great campaign of advertising and immigration, the result would undoubtedly be successful. Too many of our public men suffer from lack of first-hand knowledge of Old World countries. Few of them realise the richness of the empty wilderness which is under their administration, fewer still appreciate that Australia, and all other young empty lands, will inevitably be filled up with people in the very near future by the mere increase of pressure in older civilisations.

The State Governments have properly given much attention to agricultural education for youths. Residential training farms, which are probably equal to anything of their kind in the world, are established in most of the States, and some thousands of young men are always in training. They receive a comprehensive drilling in the practical work and science of the various branches of agriculture and live-stock raising, while there are also facilities for taking more thorough courses in special subjects. The expert staffs at these colleges are drawn from all parts of the world. Since

farming became fashionable in Australia, as it has during the past few years, the students at these colleges have been by no means confined to farmers' sons, but include large numbers of lads from the cities and also from the United Kingdom. Although most of the establishments are being rapidly added to, the accommodation has for some time been inadequate for the numbers of applicants. But at the risk of refusing admission to native-born boys, the State Governments have wisely made a number of reservations each year in favour of lads from the Mother Country. As the high standard of these Colonial agricultural colleges and training farms becomes better known in Great Britian, they will play a more important part in stimulating the immigration movement.

CHAPTER IV.

The Land on Offer.

THE land now being settled in Australia falls into five classes: (1) Crown lands which have not been alienated; (2) Land once alienated and re-purchased in large areas by the Crown, with a view to subdivision into farm holdings; (3) Land held by large owners or syndicates, and offered in farm blocks; (4) Improved farms for sale by their owners; (5) Irrigated lands.

Unalienated Crown Lands.

This class of land is still available in large quantities in all the States. But in the older States, that is those in which farm settlement has made most progress, the quality of the areas still in the hands of the Government is either indifferent or the land is removed from easy communication with markets. Whenever one of the remaining small reservations of good country close to the railways is offered in the older States, there is a scramble for it by the local people. Hundreds of applications will be made for a single block, because, as a rule, it is sold at the original nominal price. Obviously this offers no prospect to the man from overseas. These remarks apply especially to Victoria, and in a lesser extent to New South Wales and South Australia, although, in the latter States, railway extension continues to bring wide areas of fertile soil within the reach of the smallholding pioneer.

Tasmania still contains much rough and heavily timbered, but fertile country in the possession of the Government. There, however, pioneering is costly and slow, although the reward when the struggle is over is a handsome one. It

may be said that Australian settlers have always shown a marked preference for wide expanses of lightly timbered or open plain country, as against smaller areas of densely timbered lands, although the latter may be far more fertile than the former. The reason is obvious. The pioneer looks for quick returns for a minimum of labour. Tasmania, in recent years, has not progressed at the same rate as the bulk of the mainland. From now forward, however, it may be anticipated that as the more accessible soil on the mainland becomes occupied, the island State will receive more attention. Already this is taking place. Tasmania's bracing climate and its pre-eminence for unirrigated orcharding make it specially attractive to people who wish to avoid too much sunshine. An interesting development in recent years has been the attention shown by the retiring Anglo-Indian to Tasmania as a congenial home in which to combine a pleasant life with sound money-making prospects.

Queensland and Western Australia are the two States which have the largest areas of fruitful virgin Crown lands still available. The former is a magnificent domain extending over half a million square miles, and embraces an extraordinary variety of soil and climatic conditions. The North, which is scarcely tracked, let alone settled, is full tropical. The great central and western regions comprise one of the best pastoral domains in the world, while down the coast from north to south, and to about two hundred miles inland, practically every class of agriculture and stock-breeding may be practised to advantage. The State is cut across the middle by the Tropic of Capricorn, but the climate is not nearly so severe as might be expected from the location. In common with all Northern Australia, the latitude is, over considerable areas, corrected by altitude. There is a succession of wide tablelands commencing with the Darling Downs in the south, and finishing with the Atherton plateau in the north, on which soils of inexhaustible fertility are graced by cool, crisp atmosphere. The unalienated Crown lands fall into three divisions. There are closely timbered areas on the Pacific margin, eminently

suited for dairying and for the cultivation of sugar cane, pineapples, bananas, and all other tropical and sub-tropical products. Upon the tablelands, cereals and roots thrive exceedingly, while dairying and other stock raising may be combined with cultivation. Further inland are whole principalities of Government soil, of which little is known except that much of it is favoured by an adequate rainfall and that it is unrivalled for livestock.

Of Western Australia one must speak in even broader terms than of Queensland. The area is double; the boundaries take in one million square miles of the Empire, and upon this expanse there were in 1910 only 300,000 white people and a few diminishing tribes of aborigines. One might almost say that the State is still owned in its entirety by the Crown. This would, however, be misleading, inasmuch as there, as elsewhere in the Commonwealth, the pioneers possess the freehold of the most accessible and adaptable portions of the land. But while admitting that the early men have been to much pains to pick the eyes out of the State, there remains an almost boundless choice for the man who begins to-day.

Commencing in the extreme south-west corner, we find a region larger than England of forest lands enjoying a good rainfall, rich soils, and a gentle climate, and all this is, broadly speaking, quite undeveloped. Enough has been done by a handful of pioneers to prove that the area excels in those branches of orcharding and farming which are suited to a temperate climate. The beginner there can secure without trouble all the land he needs at nominal prices and upon easy terms. Travelling north and north-west the character of the country changes. The trees stand further apart, and are smaller in girth. We are leaving the region of orcharding and root growing and passing into land suited for wheat and sheep. The country becomes, to use an Australian term, more brilliant, although, acre for acre, it is of lower yielding capacity. Here the opportunity for the stranger is boundless. True, railroads are yet scarce; many of the pioneers began on their blocks

of 1000 acres thirty and forty miles from the permanent way. But an energetic State is busy planting sleepers and laying the steel, and encouraging the settler to push out as far as there is rainfall enough to ensure success for his cultivation. This wheat and sheep belt extends over thousands of square miles, running north parallel with the coast to a point which has not yet been definitely fixed.

So much for that portion of Western Australia attended by a temperate climate. Of the splendid tropical regions which make up the north of the State, and of the grand bracing tablelands now sparsely occupied by the pastoralist, less even is known than of Northern Queensland. It would be wrong to say that all the land favoured by rainfall and held by the Crown in Western Australia is at present available for the settler. The most fruitful spots are valueless unless the settler's produce can be taken cheaply to market, and the great bulk of Western Australia yet lies remote from railway communication. But the railway construction will be speeded up from year to year, and many generations of British land seekers may look forward to finding areas awaiting their industry in this vast State. Obviously the development of one million square miles is not the work of a few years. It is safe to say that fifty years hence there will still be fertile virgin soils in Western Australia. An enormous sweep of the inland country is not favoured by sufficient rainfall to bring it within the range of the smallholder; but, after making full allowance for this, there remains a richly varied domain close to the coast capable of giving comfortable homes to tens of millions of people.

The new settler may expect to secure undisturbed Crown country in Western Australia and Queensland, to a lesser extent in New South Wales, South Australia, and Tasmania, and to a still smaller degree in Victoria. The price asked for this land depends primarily upon its rainfall and its distance from communication. Broadly, it may be laid down that good land suitable for fruit growing, dairying, root crops, and wheat and sheep

operations is obtainable at prices ranging from 10*s.* to 30*s.* per acre. The root, fruit, and dairying country will everywhere comprise the richest soil, and call for the heaviest outlay of capital and labour in its pioneering. The reward on this class of holding will ultimately be the highest; but it has to be earned. The holdings here will range from 50 to 300 acres. Agricultural practices will be of an intensive kind. In its improved state, that is to say, when the holding has been cleared of its timber, fenced, and sown with grasses, the value will range from £10 or £12 to as high as £40 or £50 an acre. These prices are based upon the market prices of improved holdings similarly situated.

The wheat and sheep country further inland will be taken up in larger areas, ranging from 300 and 400 acres to 1000 acres. The price paid to the Crown will be about 20*s.* an acre for what may be described as open forest lands. The improved value of these farms would be from £5 to £10 per acre.

Further inland still one comes to the country suitable for grazing farms. These are offered at from 2*s.* 6*d.* an acre upwards, and are frequently held on long leaseholds at annual rentals ranging from a few pence per acre.

First Steps.

On all classes of country the work of the pioneer is fairly similar. The settler finds his land covered more or less densely with a forest chiefly comprised of the eucalyptus family, splashed with pine and other timbers, and sometimes a light undergrowth of scrub. The density of the forest diminishes as you leave the well-watered lands of the coast and proceed inland, until upon the grazing farm the trees are often so scarce that they present little or no obstacle to the value of the natural pastures.

The pioneer begins by ring-barking his forest, which is done by cutting a circle round the trunk of the tree. This break in the bark leads within a few months to the death of the timber, which dries as it perishes, and sheds the

TYPICAL BUSH ON WHEAT BELT.

AFTER "RINGBARKING" AND FIRES.

whole of its bark and leaves. On most of the coast and over some of the wheat and sheep country, ring-barking and scrubbing are all that is necessary to secure a good burn. At the height of the summer the dry vegetation is lighted, and if the settler is lucky, he clears out the bulk of his forest in a single operation. But more generally it is necessary, during the winter following the ring-barking, to dig a small trench round the trees from nine inches to a foot in depth, and about eighteen inches in width. Into this is piled a quantity of fallen timber and a firestick applied. As each tree falls its timber is used to burn down those succeeding. If the intention is cultivation, as it generally is, any roots remaining are grubbed out to a depth of nine or twelve inches.

The land is then ready for the plough. The cost of clearing cannot be definitely stated, as it naturally depends upon the varying density of the forest. It ranges from a few shillings an acre in the very light forest, to as much as £8 an acre in the heavily timbered rich soils of the coast lands. It is rare for the settler to clear the whole of his selection at the outset. He might be in a position to have all his trees ring-barked, and after that he will aim to clear, say, forty acres upon which to commence cultivation, and then look to clean up the balance as he has time and money available.

It is remarkable that the rich soils on the coast comprise the only areas in Australia which are not well supplied with natural grasses. Or perhaps it is more correct to say that only upon the coastal margins has it been found possible to improve the wonderful and various native grasses by the introduction of exotics. The coastal farmers have sown to much advantage most of the English grasses and clovers, and in the tropical areas have drawn with great success from other tropical countries. The most notable importation has been a luxuriant East Indian production known as *Paspalum Dilletantum.* This splendid grass grows to a height of several feet, and is edible and nutritious right to the ground. Its annual value to

Australia's dairy farmers probably reaches millions sterling. Beyond the coast, however, countless experiments have so far failed to improve upon the native pastures, the only notable exception being lucerne or alfalfa, which is, as I show elsewhere, one of the chief sources of revenue to our irrigationists.

Before the green forests are destroyed the native pastures are coarse and relatively innutritive; but as the shade is removed and the sun sweetens the soil, and as the rainfall, hitherto monopolised by the trees, becomes available for the grasses and herbage, they thicken and improve. They continue to advance in body and value as they are eaten off from season to season.

From the time his ring-barking is completed, the settler is able, from year to year, to increase the numbers of his flocks and herds. The grasses improve, too, as the land is cultivated. A paddock which has been ploughed for wheat or other crops for ten years will, if allowed to rest, become densely matted with grasses again within a few weeks after a good fall of rain. It is the native grasses alone which have made the wide Australian interior so famous as a home for the merino sheep, and, indeed, for all classes of livestock.

The settler, while anxious to begin his ring-barking, will give simultaneous attention to the provision of a water supply. Upon the coastal lands, you may be located upon the banks of a river or small stream, and much of this country is graced by spring water, either already flowing from the soil or obtainable at a depth of a few feet. But the great majority of our farmers have no such natural supply. On nearly every farm water is caught and conserved in large tanks which are dug with ploughs and horse scoops. If this work is done by contract it will cost the farmer about £100 to provide a holding of 500 or 600 acres with an adequate supply of water. As a rule, however, the pioneer begins with a small tank, and increases its capacity as his animals multiply and his need becomes greater.

Then there is the fencing and the erection of the homestead and outbuildings. The latter are so much a question of individual choice that they need scarcely be touched upon here. If the man has the means, and is accompanied by his family, he will probably build himself a decent house of weather board, or even brick, at the outset. The Australian rural home is almost without exception covered with corrugated iron, which makes a cheap and efficient roof, not so hot as might be thought in the summer months if under it there is placed a good ceiling. The chief purpose of this iron roof is to catch a supply of drinking water, which is run off into iron tanks.

The great majority of our settlers, however, make a more humble beginning, and if they commence, as thousands of them have, with a minimum of means, they are often content with a single room roughly built of logs and plaster. Some men, even if accompanied by women, pass their first year in tents. This may seem a great hardship to the dweller in the relatively wet and cold British Isles. But it must be remembered that the Australian climate is, if we except some of the coastal districts, ideal for open-air living. And then about pioneering there is, for the first season or two at least, so much novelty and joy in the conquest of the bush, and in the always expanding clearing, that men will live in great happiness with very little in the way of home comfort. The majority of our pioneers have, in middle life, attained to large and comfortable houses with many conveniences, and yet you rarely meet one who does not speak with affection and yearning of the rough and early years. They are all filled with gratitude for the log and plaster shanty which frequently stands mouldering and dilapidated at the back of the more palatial home which has come with prosperity and family. The second generation, moved by social ambition, would lay rough hands upon the little tumble-down which tells of the humble beginning. But the pioneer proudly holds it sacred.

Lands Partially Improved.

We come next to the lands which have been alienated in large pastoral holdings from the Crown and since resumed for subdivision to farm settlers, and to similar lands offered for sale privately. As I have already explained, in the early days of Australia, before there appeared to be an agriculture future, enormous areas of the most fertile and best-watered country were sold at nominal prices to the pastoralist. In many cases an indulgent and somewhat misguided Government constructed railways through these wide pastoral and freehold areas. Substantial reservations had been made, it is true, for the settlers of the farming class. But these were quickly absorbed, and afterwards seekers for small blocks were obliged to take up inferior land or else proceed beyond railway communication. Naturally this led to a great outburst of feeling against the pastoral monopolists. It was recognised that the squatters had done a great deal in the pioneering of the new country, and that they contributed enormously to its annual wealth. At the same time the people felt that all the accessible land served by railways, and intended by Nature for small holdings and a dense population, must in the national interest be acquired for intensive cultivation. By no other means could the population be increased and the empty continent made safe against aggression.

This led to a strong movement in favour of the re-purchase of these large estates at a fair market value, and their subdivision into farms. This practice has been fairly general in all of the States. Large owners whose properties are deemed suitable for agriculture receive an intimation from the Government that is is desirable they should be converted to small holdings. If the owner disregards this hint and declines to proceed voluntarily, the State has an independent valuation made of the property, and offers to buy. Failing agreement between the parties, the case is carried to a special land court, which hears evidence of value on both sides and arbitrarily fixes the price.

Obviously there is some hardship in this to the squatter, who wishes to carry on his grazing operations undisturbed. But all the world over the interests of the State must prevail. It can be safely said that in no case has the Australian pastoralist been paid an unfair price for his land: on the contrary, the figure has always been above what could be obtained in the open market. But, as I have pointed out in an earlier page, the deal is a wholesale one, and the Government is able in retailing the land to sell it very cheaply to farmers.

Of course many of the owners do sell voluntarily; some of them even before they receive the hint from the Government. This decision is assisted, too, by the Federal Land Tax. This tax exempts holders of land the value of which does not exceed £5000. Between £5000 to £80,000 the tax ascends from 1*d.* in the £ to 6*d.*, so that the more land a man has the higher is his rate of taxation. This measure, passed in 1909, has greatly quickened the rate of Australian closer settlement. Where the owner does not sell to the Government, but is inclined to dispose of his property privately, deals are frequently made with large subdivision syndicates, which do the cutting-up and retailing to farmers. Millions of acres of land have been dealt with in this way since the new century opened.

Occupation by the pastoralist means that the roughest of the pioneering has been accomplished. The green timber will have been ring-barked and the land thickly covered with native grasses. There will also be some provision of water and a little fencing. In short, a farm acquired at the subdivision of one of the big estates will be much closer to comfort and profits than the forest area taken originally from the Crown. The farmer who buys at a subdivision sale, say, in February or March is able the day afterwards to turn a flock of sheep on to his country, while between then and mid-winter he may look confidently to putting 100 acres or more under wheat. His land may be lightly covered with dead timber, but this can be wholly or partially removed in time for cultivation that

season. Of course, this advantage is not obtained for nothing. Land similar to that for which the original Crown selector would pay from 15*s.* to 30*s.* an acre in its forest state will cost, when ring-barked and well-grassed—at a subdivision sale—from £4 to £7. In making his choice between the two classes of country, the beginner will be influenced largely by his temperament and capital. Some men prefer to pioneer for themselves, for the sheer love of carving a home out of the primitive wilderness: others do it from necessity.

Improved Farms.

Lastly, there are the improved farms, of which a number are always on the market. To understand that these give buyers a good opportunity, it must be remembered that farming in Australia is now two or three generations old. The disposition on the part of established farmers to sell does not necessarily indicate failure or exhausted soil. Contentment upon a limited area is not yet a feature of our settlement. The great majority of our farmers aspire to larger and larger holdings. The tendency is always for the successful men to abandon the relatively old districts, and with their capital to embark upon wider operations in the new districts further afield. This means that highly improved farms in the old localities first settled are always coming into the market. Good advice to the beginner, however, is to proceed at once to the new districts, where land of equal producing value is to be had at a third or even a quarter of the price of the improved properties. However, this means a disposition for the rough work of pioneering. I mention the possible purchase of an improved farm because there are always some people who prefer comfort and a narrower prospect of progress to the comparative loneliness and rigour of commencing from the beginning. These improved properties are of all classes, including orchards in full bearing, dairy farms, wheat and sheep holdings, and grazing farms.

[The irrigated lands in Victoria and New South Wales are dealt with in a later chapter.]

Terms of Purchase.

The stranger is always surprised in Australia at the easy terms upon which lands may be acquired. Finance in connection with land settlement has been carried to an advanced stage. This is primarily due to the fact that the great majority of our land settlers have sprung from the farm labouring classes. They have commenced with little capital other than their capacity to fight and to labour. Hence it has been necessary for the State as a landlord and for the private seller to devise schemes which, while financially sound, give the easiest possible terms to purchasers.

It might almost be said that the States actually give away the virgin Crown lands, because only a nominal price is charged, and the terms of payment are little more than a guarantee that the buyer is a genuine settler and not a mere speculator. Space does not permit of full details; but a few examples will serve to show how little capital is necessary to gain possession of a fertile piece of the Australian continent. In Western Australia the Government makes a free grant of from 10 to 160 acres to men not already the holders of 100 acres or more of rural land in the State. This area may be extended by purchase up to 1000 acres of agricultural land, according to its quality. Each State divides its Crown lands into what are locally known as "fair living areas"; in other words, areas judged sufficient to give full employment and a sound income to the occupants. The price in Western Australia varies from 10*s.* to 30*s.*, payable over a term of twenty years. Special care is taken not to embarrass the selector at the outset. The annual payment cannot exceed 6*d.* per acre during the first three years. In Queensland, grazing farm areas up to 2560 acres are obtainable at 10*s.* an acre, spread over twenty years. In the same State, agricultural farms of 320 acres may be bought for as low as 2*s.* 6*d.* an acre, payable over ten years, although it should be said that good farm country is seldom to be had even from the Crown

at less than £1 an acre. Lower prices generally indicate poor soil, unless under special circumstances.

Where the State is sub-dividing a partially improved property the terms are even easier. We have seen that the price paid for these improved farms cut out of pastoral holdings will be roughly from £4 to £7 an acre. In New South Wales, where the sub-division movement has been very strong, a deposit of 5 per cent. is charged, and the balance is paid off at 5 per cent. over thirty-eight years, these payments covering both interest and capital, and giving the buyer a freehold title at the end of that period. In every instance the purchaser has the right to pay cash, or to clear off the balance at any time. Certain improvements are insisted upon. Fences must be erected, water provided, and, in brief, steps taken to ensure that the holding is not merely held as a speculation. These improvements, however, entail no hardship, the settler being compelled to do only those things which are essential for the proper working of his holding. One condition prohibits the selector from selling or transferring his property until a number of years, as a rule about ten, have passed from the date of his occupation. This is perhaps the most unpopular feature of settlement direct from the Crown. Many men object to being tied up for a decade. It is, however, a condition made imperative by the wholesale gambling which went on in the early days, and is not likely to be waived. Prior to its insertion, it was common for men with capital to place dummy selectors upon a group of holdings, and immediately the land was secured from the Crown to withdraw the dummies and work the whole area as a single pastoral concern. So general and undesirable from a national standpoint did this practice become that the States have been to great pains to ensure that the smallholder is a genuine cultivator.

Happily, men who object to this restriction are able to purchase land from private owners, and this gives opportunity to sub-division syndicates and companies. It might be laid down that the purchasers direct from the

Crown are, as a rule, people with limited means who desire the greatest financial assistace. Men whose capital is not severely limited prefer to purchase without restriction as to improvements, residence, and sale. The Government, however, has not been small-minded in this matter. The same generosity which attends the financing of the settler on State lands has been extended to the settler on private lands. I will give one example. In New South Wales the Government will, provided its valuers are satisfied that the price paid by the farmer is a fair one, advance him up to 80 per cent. of his purchase money, and become his sole mortgagor. Nowhere in the world, perhaps, does such magnanimity towards the pioneer go further than this. It means that with a few hundred pounds you are able to purchase in the open market a property up to five times the amount of your capital.

Then, beyond the assistance given by the various State Governments in the actual purchase of land, much is done to help the settler with his improvements, and even so far as in the building of his home and the purchase of his live stock. The irrigation settlements will be dealt with specially elsewhere. In Western Australia the Land Bank advances the pioneer up to £400 to assist him in the clearing of his timber, sinking of tanks, erection of fences and house and steading, and in the buying of live stock and implements. The Minister for Lands in this State assured me a couple of years ago that hundreds of men with capital not exceeding £100 had commenced during the past ten years upon areas ranging from 200 to 1000 acres. This seems incredible, but it will stand testing. The purchase price of the selection of 1000 acres is, say, £1 an acre. On this a deposit of 3*d.* an acre must be paid, or a total of £12 10*s.* Payments during the first three years are limited to 6*d.* an acre per year. The selector begins, perhaps, in a tent. He intimates to the Government that he wishes to carry out clearing and other improvements to the extent of, say, £200 in the first season. The Goverment approves. No money is advanced prior to a start being made. But

the selector with the Government approval in his pocket is able to employ labour and obtain credit for his stores. He works for a couple of months, and then invites Government valuation of what he has accomplished. He receives a loan to the value of the work done, and this actually covers what he or his family have carried out.

This might be thought a dangerously open-handed scheme of state finance. But loss to the State is exceedingly rare, for the reason that the holding is all the time being improved. If the selector should decamp at the end of three or four seasons, he leaves behind a block of land partially cleared and fenced, and probably worth £2 or £3 an acre. Without going further into this scheme of time payment and advances towards improvements, which is more or less common in all of the States, it is clear that the Government is a highly desirable landlord. The prospective settler will find that, so far from exploiting him, the aim is to facilitate his progress as far as is consistent with sound finance. Moreover, the Government is always extremely loth to press harshly even for payment which is overdue. Occasionally pressure may be put upon a man who is notoriously a waster. But should bad seasons come or a man be embarrassed by excessive personal troubles, the Government has always been found willing to make concessions and extend the stipulated date of payment. Indeed, the authorities will, under special circumstances, go so far as to make grants of seed wheat. The State has never lost sight of the fact that the success of the nation depends upon the success of its settlers, and is more than compensated if the pioneer whom it assists makes good upon his holding, and contributes to the aggregate wealth and defence of the country of his adoption.

CHAPTER V.

The Man Without Capital.

Australia is the happiest of hunting grounds for the poor man. White labour of all classes is perhaps better paid and treated there than in any other country in the world. Our country abounds in self-made men. British travellers are frequently displeased at the strong spirit of independence, even arrogance, which marks the Australian worker. But this is easily explained, and is, in an Imperial sense, greatly to be commended. The country has no fixed classes. The Australian newspaper which wrote about the lower and middle and upper classes would promptly lose its circulation, and, peace-loving as the Australians are, might even have its windows wrecked. The prevalent idea that Jack is as good as his master may get a little bit on the nerves of some of our visitors from the Mother Country. But this does not mean that the worker is above his job; it does not indicate a disdain of the rougher kinds of manual labour. Comparative statistics show that the aggressively independent Australian gives very good value to his employers. True, he works only for a few hours a day. Except in agricultural work and domestic service the eight hour day is general, with a marked tendency to cut it even lower. But in that brief day the Australian labours cheerfully. Happy in his high wages, his comfortable home, and well fed, well dressed children, he goes singing into his task. Where trustworthy comparisons can be made, as in bricklaying, typesetting, and other similar occupations, the Australian outstrips each day similar workmen in the United Kingdom and most other parts of the world.

A glance at our manufacturing statistics shows that the capitalist who knows, or should know, his business is quite satisfied with the quality and cost of his labour. Between 1910 and 1911 the capital invested in our young manufacturing industries increased from £58,000,000 to £64,098,000; the number of factories from 13,852 to 14,445; the employees from 286,963 to 311,772; and the wages paid from £23,870,000 to £27,531,000. These happy conditions are instructive, both to the British worker who contemplates emigrating to Australia and also to the new settler with capital. To the one they indicate excellent opportunities for remunerative and congenial employment; to the other they assure a supply of labour at rates which, under Australian conditions at least, are not at all prohibitive. It cannot be too strongly emphasised that a young country which does not offer high wages and reasonable working hours is useless both to the capitalist and to the worker. The British Empire overseas has been built up in the main by the needy emigrant. The capitalist is a prime necessity, but without the accompaniment of the British working man permanent white colonies would never have been established.

If the origin of the settlers of Canada, Australia, and New Zealand could be analysed, it would be found that a very heavy majority arrived in the new land with little other capital than their capacity to labour. With a personal knowledge of large numbers of Australian settlers in all of the States of the mainland, I should say that quite nine out of ten of our small landholders began either as British working men, or are the sons or grandsons of that class. The big stream of emigration to Australia, built by Government advertising and financial assistance from 1906 onwards, was comprised almost wholly of the working classes. And these people only made the venture because they were assured that their labour would be rewarded by higher cash payments in the Commonwealth than in the United Kingdom.

With all the talk of the shortage and high cost of labour in Australia, it is doubtful whether a single bushel of wheat

has ever gone unharvested because of the failure of the farmer to find the labour necessary for the work. And this holds good in regard to all our young industries. At certain seasons of the year the cost of labour is high, but against that land is cheap, and the dividends earned by our settlers on the capital invested is quite as high as, if not higher than, in any other country in the world. The proof of this lies in the thousands of farmers possessed of comfortable homes and freehold properties worth a few thousand pounds apiece, the great majority of whom commenced as pioneers with empty pockets.

Any man not too far advanced in years who can reach the Australian shores may look with confidence to employment on a farm in our rural districts. The only condition is that he shall be willing to labour. Want of experience is no obstacle to an immediate engagement. The country has an almost unlimited capacity to absorb young men who are ready to turn their hands to the management of live-stock and the cultivation of the soil. Lads from fourteen years upwards will be readily taken by farmers, who will give them decent housing, plenty of good food, and a few shillings a week, and at the same time undertake to teach them the rudiments of agriculture. Any cheerful boy has a value to the farmer in bringing in and bailing up cows, feeding calves and pigs, and running messages. Within a few weeks he has learned to milk, turn the cream separator, cart the cream to the butter factory, and ride a horse. On the selection he can from the outset make himself useful picking up sticks at the burning off, and in a dozen other directions. Perhaps he will start at a wage of 5*s.* or 6*s.* a week, but very quickly that is doubled. The adult novice commences at a few shillings, and if adaptable he is within a few months earning £1 in addition to his board and lodging. During 1911 I met a young Londoner on a new selection some thirty miles from a railway in Western Australia. He was living under canvas, sharing conditions with the selector. He told me that he had landed three months before. Yes, he liked it vastly. His wage was

30*s.* and "tucker." I suggested that he had been a farm labourer in England. No, he had been a London butcher's assistant. Already he had saved a few pounds, and his aim was to put by £100, and then to apply for 1000 acres of wheat and sheep country of his own. He was certainly a keen and intelligent worker, but his case was typical of thousands of other beginners on the Australian country-side.

The farm labourer with a little experience receives about £60 a year in addition to his housing and food. Capable teamsters earn another £10 or £20. The men are not hired, however, by the year, but engaged upon a weekly basis. The temperate, industrious man who is really "on the make" has no difficulty in saving £50 a year. His expenses are nominal; £5 a year would keep him in clothes. His "Sunday suit" will endure for two or three seasons. His recreation is confined generally to a little shooting, and to competitive athletics with men on the surrounding selections. Once or twice a year there will be district races, and an agricultural show or two.

The life is, it must be confessed, somewhat monotonous, and in that lies its danger. If the labourer is strongly concentrated upon the acquisition of a property of his own, he gets sufficient pleasure out of his increasing little horde of wealth and his dreams of the future. But too many of them fall victims to the loneliness and lack of excitement. They are tempted on Saturday nights to ride into the nearest township, where there is the inevitable hotel, which is for the farm worker almost the only rural meeting place. One drink follows another, the hot climate and an encouraging publican promote intemperate consumption, and, unless the bushman is strong-willed, he falls into the habit of frittering away his money as it is earned, and with it his chances of becoming a substantial freeholder.

It might appear that this temptation is one easily resisted. But that is an error. It requires much resolution to walk the lonely path during the first two or three seasons in a strange country. The Australian bush is thickly sprinkled with pathetic failures, who have perhaps twenty times saved

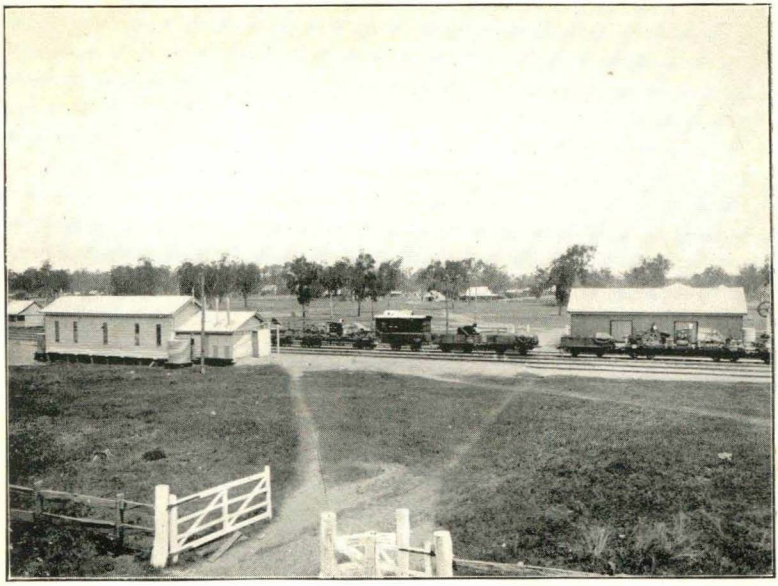
from £50 to £100 and then dissipated it in one wild orgy at the nearest township. This is the tragedy of "out-back." Thousands of men, even after they have accepted the conclusion that they will never make good on their own holding, continue until they die to dream of spending their savings on a holiday in one of the coastal cities, or even on a trip to the "Old Country." But once a man has fallen a victim at the nearest hotel, he rarely ever gets beyond it. I recall one Jimmy, who worked for us on land in Northern Victoria. Year after year old Jimmy, who was an unrivalled farm hand, set out after harvest on his way to spend a month or two in Melbourne. His cheque would run from £50 to £60. He would walk off smartly dressed one hot morning in the late summer, assuring us all that there would be no mistake about it this time, and that he was going down to the sea to take things easily for a month or two, and come back in time for the ploughing. And Jimmy was so decent and sensitive that, although we knew what inevitably would happen, we could not suggest that he left part of his money behind. A few days afterwards, as we rode past the Boundary Hotel in the township a few miles away, we would probably see a terrible figure at full length on the verandah, or Jimmy would come reeling drunkenly across the street to greet us, little better than a maddened beast. A week later his cheque would be gone, and he would be in delirium tremens; then we would drive in and get him, and nurse him to recovery and capacity to re-commence his labour. Poor Jimmy is the other side of the picture to that presented by the young Cockney butcher in Western Australia. It unfortunately cannot be said that every hard-working man succeeds. To win "up country" a man needs moral fibre as well as clever hands and physical endurance.

So much for the failures and the cost. It is more pleasant to write of those who succeed. It should always be borne in mind that success upon the soil in any country, however generous, must be bought and paid for. There is no greater fallacy than that any fool can prosper as a

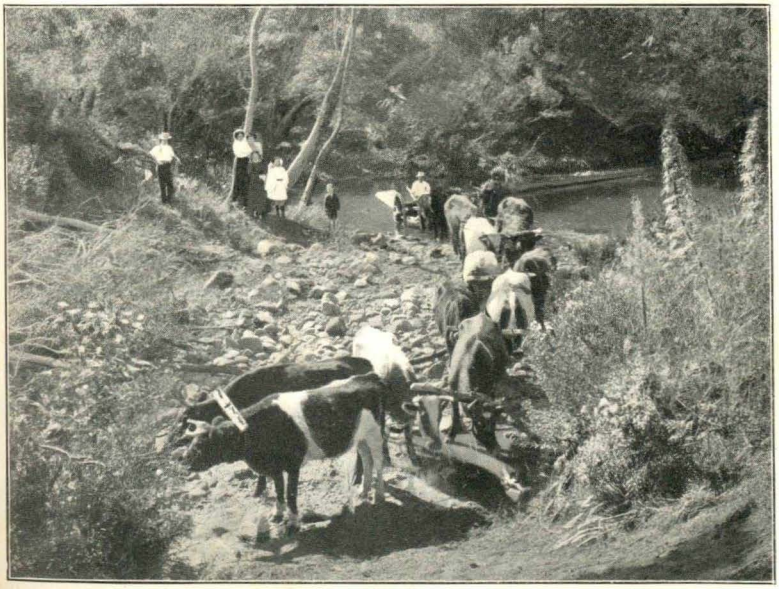
farmer. Too many parents have the idea that a lazy or dissolute son, having failed at everything else, will surely succeed in Canada or Australia. The Empire overseas is no kinder to that type than the Mother Country; in fact, their failure abroad is generally surer and swifter, because of the loneliness and absence of friends. It is true that sometimes youths who will sponge upon their relatives in England will, when placed upon their own base, develop spirit and win out. But they are the exceptions. The country rewards generously those who have good qualities, but it has as little for the loafer or the weakling as any other land. A young man need not be brilliant, but he must be industrious and he must be temperate.

The rise from the labourer to the substantial freeholder is the story of the making of the Australian nation. Perhaps the majority of our large pastoral holders took out some capital with them when they left England. But even among the pastoralists there are large numbers of self-made men, and, as I have said, the farmers are made up almost entirely from that class. Let us follow the better-class agricultural labourer in his progress to freeholder. By agricultural labourer, I mean a man drawn from any class or calling who has learned farm work before or after he reached Australia. We have seen that a steady man can save £50 a year. He will not move from employment until he has at least £100. Then under favourable conditions, such as now exist in Western Australia, he might at once take up a holding of Crown land; but most men will try to acquire more capital before they make their venture They will spend their first £100, perhaps, on a team of horses, and so be in a position in which they can double their income. They will engage either as teamsters on the roads, or enter upon what is known as "shares" farming.

This "shares" farming has bridged great numbers of men from the state of the labourer to that of the comfortable farmer. Agricultural Australia contains more land than labour. Tenancy is uncommon and unpopular. It is rare to find a man who is satisfied to continue paying rent all



RAILWAY STATION AT A NEW COUNTRY TOWNSHIP.



A ROUGH CROSSING.

his life. Nearly every settler aspires to freehold. Owners of large areas of agricultural and dairying lands find it highly satisfactory to engage with men upon a proper sharing basis. If the country is suited for wheat growing, they will place at the disposal of the teamster, from 200 to 450 acres of country cleared ready for the plough. With his agreement made, the teamster is able to get credit from the storekeepers to carry him over the season. The land owner finds the seed, the teamster does the ploughing and harvesting, and the yield is halved.

In almost every season the result to the worker is far in excess of what he could earn with wages. In a good year he often clears as much as from £1 to £2 per acre. He may certainly expect after two or three years at "shares" farming to have a few hundred pounds to his credit, and is then in a position to buy country of his own. Frequently the large landholders sell to the "shares" farmers the blocks upon which they have been engaged. An option over the block is sometimes given at the time operations are commenced. These "shares" farmers live frugally, even roughly. The climate is so mild that they can carry on for a few seasons, without much hardship, in cheap canvas houses. No stabling is required for their horses, which are fed at mangers under the open sky. Conditions during these few years are regarded as temporary, and the men, happy in their money-making, cheerfully do without the comforts of a proper home.

A similar system is carried on in the dairying districts. "Shares" farming there is attractive for married men with families. A start can be made without any money capital. All that is necessary is the capacity to milk a considerable herd of cows. A man and his wife and three or four children will frequently engage to look after a herd of from fifty to one hundred head. The landowner finds the cows and the country, and also a dwelling house and the necessary yards and steading for the milking. The family do all the labour, including that of feeding the calves and pigs and the cultivation of a small area for the growth of fodder.

The cream is "separated" on the property and carted to the nearest butter factory, and the monthly cheque is divided. In addition to the proceeds from the cows, the family sometimes receives a share of the profits from the calves and swine.

The Scottish Commission, composed of agricultural and livestock experts, made the following report upon "shares" dairy farming in the State of Victoria, and these remarks apply with equal truth to other States:—

"A Victorian share farmer's balance sheet, taken from the estate manager's book, will illustrate how the system works out. In this case the tenant got one-third share of all sales. He had about 140 cows, and a large number—400 when we were there—of very well-bred pigs. He sent sometimes as many as 400 gallons of milk in one day to the butter factory, and sometimes as few as 90 gallons. He required six milkers, of whom, however, four were his own sons; and he gave his hired man *22s. 6d.* a week and his keep. In 1909 the milk sales amounted to £1418—the tenant's share being £493; the profit from pigs amounted to £498, of which the tenant got £166. He had also an allowance of about £10 for the calves he reared. The tenant's total income from the farm in 1909 was therefore £669. In the year 1908 swine fever diminished his return for pigs, but he had more from milk, and his income was £551. Another farmer on the same property had, in the same years, incomes of £480 and £518. If it is remembered that these men had good houses and several unreckoned perquisites, such as permission to keep fowls; that they could do nearly the whole work of the farm without employing hired labour; and that they had next to no capital invested in the business—the landlord supplying everything but the labour—it will be seen that they were doing really well. It must not be supposed that all dairy farmers on the share system are equally prosperous. In some districts we found them just making a living, and perhaps barely that. Still, on the whole, they were making decidedly

better wages than they could have earned as hired labourers, and they were their own masters."

Thus there is sound opportunity both for the single man with enough money to buy a team of horses and for the married man with a growing family without any capital at all.

A good deal of just criticism has been levelled in recent years in the British Press at the unsatisfactory offer rural Australia makes to the agricultural worker who is married and wishes to have his wife with him. There are plenty of good openings for the married couple without children, but for the man with a young family not old enough to milk the prospect is not inviting. This is primarily due to the fact that the Australian farm labourer in nearly every case gets his board and lodging provided by the farmer. A wage of £1 or 30*s*. a week means that sum in addition to "keep." "Keep" means plenty of good, plain food, provided, as a rule, in the farmer's kitchen, although, sometimes, the labourer has his meals with the family. The sleeping quarters are plain, and often rough. Two or three men will share a "hut" built of hardwood and covered with galvanised iron, and in this they will sleep and spend their winter evenings. These places are well ventilated and quite healthy, and can be made comfortable if the men so wish. It is rare to find quarters provided for the labourer's wife, and almost unknown for a farmer to provide accommodation for the young families of his employees. The only exception is in the case of a married couple who are both engaged to work at the farm, or shee or cattle station. The woman then cooks or does house-work, and the man is engaged outside. The essence of the contract is that the woman shall be available for house duties, and consequently children are unpopular, if not actually forbidden.

Obviously, such a system is open to attack, but, from the up-country employer's point of view, it can be stoutly defended. Every farmer and pastoralist's wife would prefer the single domestic and the single labourer to the married

couple. But domestics in Australia are at a premium, and they are especially hard to get for farms and stations. Girls naturally prefer the brighter life of the cities and towns. The settler's wife, after heroic attempts to keep her house in order, persuades her husband to engage a married couple. Even without children, the married couple is not a popular institution. We find that the good cook is often married to a bad ploughman or careless stockman, and that the ideal farm hand has often chosen a useless housewife. However, a faulty couple will be tolerated so long as they are without a family; but the advent of children, making it impossible for the wife to carry out her agreement, is nearly always followed by dismissal.

Unfortunate, and even cruel, as these conditions may appear, they are, if regarded in the right spirit, merely a phase in a young country's development. While it is hard for the labourer and his wife to be penalised because they have a family, it is equally hard for the settler's wife to be constantly, and even dangerously, overworked. At its worst, too, the evil is a small one. The number of married couples engaged is infinitesimal against the numbers of single employees. Labourers are not long prevented from marrying by this arrangement. As we have seen, those who are sober and industrious soon become their own masters.

CHAPTER VI.

The New Chum.

Broadly speaking, farm practices are the same the world over. The intelligent agricultural labourer who has learned his work in Scotland speedily adapts himself to the conditions of either the Canadian prairie or the Australian dairy farm. Naturally some branches of farming require special knowledge. For example, the farmer of Lincolnshire would, in the first season, be somewhat astray on an irrigation farm in the Murrumbidgee Valley. But even two farms so wide apart, both geographically and in detailed practices as a holding in Lincolnshire and a block irrigated from the Murrumbidgee, call for the same experience and the same horses and implements. If a man can drive a team and work a plough and other cultivators, has an understanding of livestock and a knowledge of almost any economic plant life, he will soon make himself at home on any farm in the world.

Each year Australia receives from Great Britain thousands of young farm labourers, and, provided they are cheerful workers, they earn their wages from the day they reach the farm in the new country. The farm labourer, or the farmer who has taken out capital, becomes accustomed in a few days to the use of many furrowed ploughs and larger teams of horses. As each change in the season brings with it a change in practices, the "new chum" adapts himself to machinery which he has not seen before, but which is generally only an extension in a labour saving direction to that which he has been accustomed to in the Mother Country. In some industries, as for instance, dairying, there is little or nothing new to be learnt. In dealing with

sheep, the stranger is for a season or two troubled by the shearing machines, but otherwise he speedily gets used to the rudiments of our pastoral life.

But while the British farm labourer can immediately earn his wage in the Commonwealth, it cannot be said that the British farmer with capital can look to winning success so quickly. It is one thing to learn to drive Australian teams, milk Australian cows, and yard and work the merino sheep; but it is quite another thing to learn the land and livestock values of a new country three-quarters as large as Europe; and still more difficult to acquire what every prospective land settler should have, and that is some sound understanding of the Australian climate. The farmer in every country must know his climate. He can never look to predict the wet and dry seasons with absolute accuracy, but at least he must be able to do it with some measure of success. And this is especially true of a variable land like the Commonwealth. In England, the farmer is frequently troubled with excessive rainfall or excessive cold; in Canada he gets too much snow. In Australia the complaint is against the heat and the absence of rain. The land is phenomenally fertile and generous. It carries one hundred million sheep as against Canada's three or four millions; and as the Australian merino is dependent entirely upon natural grasses, this may be taken as a sound indication of the pastures. And, as this high carrying capacity is maintained over indefinite periods, it may be claimed for the Commonwealth that it is well and consistently favoured by Nature.

But although the average fruitfulness is high, Australia is a country which must be closely understood and watched by its settlers. Our wheat farmers are lost if they do not sow early. The pastoralists invite ruin if they yield to the temptation to overstock in good seasons. The British farmer emigrating to Australia has perhaps a better prospect of making large returns upon his money than anywhere else in the world. Wherever he goes he will find prosperous settlers, who are not only living well,

but nearly all of whom are laying by a lot of money. But however capable the newly arrived Britisher may be, he will, if he is wise, take plenty of time in the selection of his holding and the venture of his capital. All young men, regardless of the money they possess, should engage for at least six to twelve months with an Australian farmer, and so acquire a close knowledge of local land and stock values and Australian rural practices. To some people this may not be congenial. A man who has been an employer all his life does not care about placing himself under a master. Men who feel like this should spend a season travelling about our country districts endeavouring to pick up local knowledge before they become purchasers.

Every country contains inferior areas of land. It is notable that in Australia most of the chief ports at which the overseas arrival steps ashore are surrounded wholly or in part by second or third class country. This gives a rare opportunity to the operations of the dishonest land agent. The stranger will find in the newspapers many advertisements setting out the attractions of farms quite close to the cities and the coast. Seen in the spring, these places look highly attractive. But so keen is the demand for good farms within easy distance of the centres of population in Australia, that the stranger may well be shy of these propositions, no matter how inviting they are made to appear. The bulk of the best land available to-day lies at a considerable distance from the cities. Much of this country is quite as productive as the land in older districts, for which two or three times as much money is asked. The wise man will (1) beware of land agents with individual farms to sell; (2) work for a time with a successful farmer; or (3), failing that, spend some portion of his capital in travelling, so as to learn local conditions and study relative land values.

Don't be in a hurry. Lands are now being settled at a good rate. But there is still an almost immeasurable area of country of the greatest variety and fertility remaining. Bargains next year, when you have acquired some

experience, will be quite as remarkable as those at the present time. And not only must you be careful about land; you must be equally careful about livestock. There is precious little honour in the disposal of farm animals. It is all too easy for the inexperienced young Britisher to purchase a herd of dairy cows with lumpy udders and blind teats, and horses with the richest variety of ailments. As an Australian countryman with some knowledge of farm people of other lands, I should say that, as a rule, Australians are conspicuous for their honesty. But, at the same time, the stranger is looked upon as fair game, and if he commences to buy without experience and is not taken in hand by a friend who knows, it is quite likely that he will secure an indifferent piece of soil at an artificial price, and that his holding will become the dumping ground for the livestock failures of the district.

I remember when, twenty years ago, the first irrigation settlements were established in Northern Victoria, and how, as the "new chums" arrived, some of them young Englishmen, but the majority young city men from Melbourne, the farmers for twenty miles around immediately took stock of what could be sold to advantage to the stranger. We offered them land at two or three times its usual value, and even the farm boys were excited at the possibility of working off obsolete ponies and second-rate saddle hacks to advantage. And, generally speaking, a prime lot of unprofitable rubbish those new settlers accumulated. At the same time, I have equally strong recollections of the generous disinterestedness with which almost every Australian settler will give up his time and the benefit of his experience to the stranger, if he is appealed to. Australians of all classes strongly dislike the know-all stranger. If the "new chum" arrives and frankly admits that he is a "new chum," and asks for advice and assistance, he finds that he has fallen among very good friends. The district would strongly resent men of this kind being imposed upon. Everything possible would be done to see that he bought well, and that he avoided

mistakes in his initial practices. But let him beware if he comes in and adopts a superior attitude towards the old hands. There is an interesting sensitiveness on both sides. The arrival from the Mother Country is disposed to be somewhat condescending to the mere Colonial. The Colonial, who has been through the heavy pioneering, and is intensely proud of his new land, and more than conscious of its splendid promise, adopts the attitude of precocious youth to advancing old age. Under the circumstances, there is often an unfortunate amount of misunderstanding, and even ill-feeling. Generally speaking, however, the Australian settler welcomes the stranger with both hands, and gives freely both of his hospitality and of the fruits of his pioneering. A little tact on the part of the new arrival, and all goes well.

It is customary in books about new countries to set out in detail the outfit necessary for emigrants. The young Englishman who goes abroad is so keen upon his equipment that I hesitate to advise him to take little with him to Australia beyond his ordinary English clothes. Nothing could be tamer than the Australian countryside. It is wide and fragrant; it suggests immense distances; it is marked by a very simple but a highly distinctive and attractive life of its own; it is, despite a century's pioneering, still decidedly new; it brims over with opportunities for the industrious man. But still it is all very peaceful. Its people are very plain dealers. The life of the countryside is almost absolutely without swank. The roaring gold-digging days are completely gone. Mining is still a big Australian industry, and promises to be so indefinitely. But the individual shaft sinker, dreaming of fortune with every blow of the pick, has been succeeded by powerful companies which exploit reefs at deep level and employ thousands of miners at so much per day of eight hours. The romance is gone out of gold digging. It has become a mere humdrum, organised industry. Gone, too, are the galloping coaches of Cobb and Co., with their burdens of new colonists fresh from the old sailing ships or their bags and boxes of gold

dust and nuggets, their armed escort of police to ward off the bearded bushrangers, who were always mounted, as the story goes, upon thoroughbred horses. Such things are of the past, and, alas! they can never come again.

The boundary rider or drover, those peerless stockmen about whom so much good verse and fiction have been written, are at first sight the most disappointing of mortals to meet. We remember the thrill we had when our eyes fell upon our first American cowboy; how pleased we were to find him still with his lassoo, the broad-brimmed hat, the fur and fancy trappings to his leather breeches. They were the cowboys of our school books and our imagination. Picture, in contrast, the Australian drover. Even his horse is disappointing. You find him in a plain cotton shirt, either white or a dull blue, no collar, and only sometimes a handkerchief, and then not a fancy one, about his neck, a weather-worn, old felt hat, frequently battered and with a hole or two in it, white moleskin breeches, rarely made specially for riding, and plain walking boots. They use ordinary English saddles, and ride with their shoulders well down in a comfortable attitude, which may be easy and graceful, but is far from smart. Their horses are often equally disappointing; that is again at first sight. But this plainly dressed, easy-going, soft-spoken man will, upon acquaintance, unfold into a master of everything associated with horses and cattle, and will disclose an intuitive, almost uncanny, knowledge of bushcraft.

He carries no revolver or defensive arms of any kind, as he has no call for them. When the "Jackeroo" or "new chum" comes to the station and appears in the latest cut of riding "bags," with elegant tops and all the rest of what, to the young Englishman's mind, is a proper Colonial outfit, he makes an extraordinary contrast beside the real bushman. And each month, as the stranger becomes more competent, he sheds piece after piece of the fancy outfit of which, when he left home, he was so proud.

If it is the intention of the young Englishman to spend only a couple of years in Australia, picking up what is

known as Colonial experience, he should aim at once for the wide pastoral inlands. He should engage as a Jackeroo on one of the big sheep or cattle stations, and he will find that a couple of years spent in riding about after sheep or cattle over the fragrant plains, with the shooting of rabbits and wild duck, coursing after hares, a little polo, occasional picnic races, and other pastimes, with squatters' dances in the winter months, and a trip or two a year to the coastal city make a very agreeable interlude. But if it is his intention to take up land in Australia, he will, unless possessed of considerable capital, be well advised if he shies clear of the seductive life of the big stations. To engage as a principal in the pastoral industry requires a large capital, and is beyond the means of all except a favoured few. And those favoured few are able to lead so pleasant a life in the Old World that there is little to tempt them abroad. Hundreds of young Englishmen of good family, but little means, make the mistake when they go to Australia of passing over the farming districts. They are a little contemptuous of the narrow, limited life of the farmer, and the "dirty work" of cultivation or dairying. In their dream of Australian life they have ridden thoroughbred horses, chased kangaroos and emus, and swapped yarns as they smoked their pipes over night fires, with the big overlanding herd moving restlessly in camp close beside them. Their head is full of adventure. Following the plough or riding the harvester under a fierce sun has seldom entered seriously into their calculations. The pastoral life is alluring, but for the youngster with limited capital it leads to nowhere. The life of the Jackeroo spoils him for the industry of the limited area of land which his means will enable him to acquire. He probably lives with the squatter's family or with the station manager; and Australian pastoralists are notoriously unsympathetic towards the farming movement. Accustomed to their wide areas, they honestly believe it impossible for a man to make a living off a square mile of country, and they scoff at the prospects of the irrigationists upon their little

60-acre plots. Then the Jackeroo is constantly in the society of the young squatters possessed of unlimited cash. The life is ideal in its way, but it is a bad atmosphere for the young Englishman whose capital, either present or prospective, does not exceed perhaps £1000. He can never become a pastoralist; yet he cultivates tastes which make it impossible for him to become a farmer. As a young man, the station work suits him, but as he grows older he is rather a pathetic figure as an overseer, on a salary insufficient to enable him to marry; or, if he is exceptionally lucky, he rises to be the manager of some out-back station.

It is very necessary strongly to emphasise this matter, because not only are young Englishmen tempted to aim for the outside pastoral life, but their parents, setting excessive store upon the social aspect, are inclined to agree with them. The prospective Australian settler, who has, or will have, any sum up to, say, £5000, will do well in his venture to Australia to proceed from the outset upon severe business lines. The more he roughs it at the beginning, the sooner will he attain to a position of comfort and independence. His objective should be the possession of as much agricultural land as he can work to advantage. Let us assume that, before he leaves England, he knows nothing of agriculture or livestock, though even if he is a practised English farmer it will be well for him if he follows the same course as that laid down for the penniless "new chum." On the voyage out there is much to be said in favour of travelling third-class, along with the great majority of British emigrants. There is a saving of upwards of £20 between third and second class, and of £50 to £60 between third and first. But beyond the money saved, the cheap travelling will prove very profitable. The third-class fare is plain but good; the tables are, thanks to cold storage, well supplied with fresh meat and vegetables, and the sleeping accommodation is ample and wholesome. The future landholder has for company a large number of young English farm workers, and others like himself, possessed of limited means. He

gains on the trip some knowledge of a class of people whom, as he becomes a farmer, it will be his business to employ, even if previously he has not lived among them.

When you land, the golden rule is to buy nothing in a hurry, whether it be a horse or 1000 acres of land. Aim at getting experience at somebody else's expense, and not at your own. This is, as I have shown, always fairly easy. The wages at the outset will not be high, but this will not be an important consideration for the young Englishman, whose business it is to learn Australian farming as quickly and as inexpensively as possible. The work will be arduous, and the life perhaps a little rough. He may live with the farmer's family, or in quarters with other hired men. In either case the experience will be invaluable, and will save him much money and trouble when, later on, he sets up for himself. It is generally possible, at very little trouble, for any young emigrant to get from Australians in London letters of introduction, which will be useful upon landing. But even without these the risk of unemployment in the country districts is very small.

At the commencement, life as an agricultural labourer may not be altogether happy to the young man unaccustomed to physical labour, or to living away from his family. But to the great majority there is sufficient novelty and adventure in it to make it palatable, if not highly enjoyable. Working as a farm labourer you make invaluable acquisition in three directions. You learn to know what is a proper day's work to expect from your men; you learn the value of land and livestock; and you acquire—and all this at the farmer's expense—a knowledge of the local farming conditions. No hard-and-fast rule can be laid down as to how long this employment should be continued. Naturally, some men learn faster than others; but it may safely be said that from six months to a year should be utilised in this way. Once some experience has been gained, it is a simple matter to exchange one position for another, and it is advisable, circumstances permitting, to work in more than one district.

To sum up:—The British farm labourer who goes to Australia should keep in view that he has to save up £100 before he can improve his position, and that he can save only by sticking close to his work and keeping clear of the hotels. He must choose between the hotels and the farm which, if he is industrious and temperate for a few years, he is practically certain to possess. Let him refuse beer until he has bought a team of horses, and all will be well with him.

The young man with limited capital, or who expects to have capital, but is without rural experience, should refuse the pleasant life of the big pastoral station, and enter cheerfully upon the comparative drudgery of the farm. He must persevere until he has found a good progressive farmer who is willing to give him experience, in addition to board and lodging, and a few shillings a week in return for his labour. When he knows something about land and stock values and the practices of agriculture, he should buy his own farm, but not before. When he sets out to buy, he must not be afraid to spend £20 travelling about in one or more States in search of his holding. He should buy in the new districts where values are low and a quick rise in prices is assured.

The experienced British farmer will be wise if he puts his pride in his pocket and works for a season with an Australian farmer. If he cannot do that, he should spend some of his money travelling in good farming districts before he thinks of buying. Wheat growing land in Australia of equal productive capacity varies as much as from £3 to £10 an acre. The difference is between the new and the old districts. Seek out the promising new districts.

CHAPTER VII.

THE WHEAT GROWER.

THERE is a broad difference between the practices of the wheat farmers of Australia and north-west Canada. The Canadian grows wheat and little else. His prairie is rich, his crop as a rule is heavy ; he stands to win or lose on one stake against the fates which govern the seasons. His activities are confined to a few months of the year. He is greatly rushed at the seeding and the harvest, and has idleness forced upon him for the remainder of the year. The Australian wheat grower is at work all the year round. He may ease up a little in the autumn and spring; but that is from choice rather than from necessity. His soil is not as rich as that of his friendly rival in Canada. But it is far more adaptable. Our wheat growers are in every case also sheep farmers, and very often they engage in dairying and sometimes in orcharding. They are known as wheat farmers because wheat is their first source of income, but we speak always of their country as the home of " mixed farming." They are located upon an irregular strip of country found in all of the States of the mainland.

This wheat belt commences immediately inside the coastal ranges, and spreads inland just so far as the rainfall dictates. It has an average fall of from fifteen to thirty inches of rain in the year, and its width varies roughly from fifty to one hundred and fifty miles. The soil differs considerably in quality. The best of it is a

red, friable loam, but its fruitfulness and value are decided rather by the rainfall than by analysis. Tell a countryman the amount of rain enjoyed by any district in the course of a year, and the months in which it falls, and he will know in nearly every case what will be its average yield under good methods of cultivation.

In appearance, the wheat belt is rather monotonous. Over wide areas it is a level plain, although in some localities it is sufficiently undulating to be picturesque. In Victoria, New South Wales, and South Australia, nearly the whole of it has been brought within twenty miles of railway communication, and the Governments are active in constructing further lines. It is generally accepted that wheat-growing to be profitable must be carried on within twenty-five miles of railway communication, and that farmers are handicapped if they have to cart their harvest more than twelve miles.

The practices of our wheat-growers are broadly similar throughout the continent. The farms range in area from about 320 to 2000 or 3000 acres, although occasionally you find men with only a quarter section (160 acres) making a fair living by clever cultivation. In tracing the operations of the wheat farmer, we will assume that he has purchased his country either in its virgin forest state from the Crown, or at one of the subdivision sales of pastoral holdings, and made it ready for the plough. After providing for the purchase of the property for cash or on the time payment system, a few hundred pounds will be necessary for the provision of livestock, fencing, implements, and the sinking of tanks. The first aim will be to possess a flock of sheep. No matter when a wheat farm is first occupied, the natural grasses will be sufficient for grazing. It can be assumed that all of the wheat belt will carry a sheep to the acre, and this capacity can easily be increased by the assistance of cultivation and the growth of green crops for forage or fodder.

Let us take a man on a holding of 640 acres. If he decides to crop 200 acres a year in wheat, he can safely

essay to carry at least three-hundred ewes, and in addition he might look to run a herd of from thirty to forty dairy cows, and have ample grass over for his light and draught horses. For his ewes he would pay from 10*s.* to 14*s.* a head, according to their class and the season. He will probably choose merinos, and cross these with any of the well-known British breeds. His lambs will come from May to July, and be at a nice age when the spring grasses commence in the following August. These lambs usually reach a good freezing or export weight, which is about forty pounds dressed, by November, when they are saleable at prices ranging from 10*s.* upwards. Thus the wheat farmer is able, without danger of over-stocking, to make a good profit out of the annual increase as well as out of the wool returns of the flock itself.

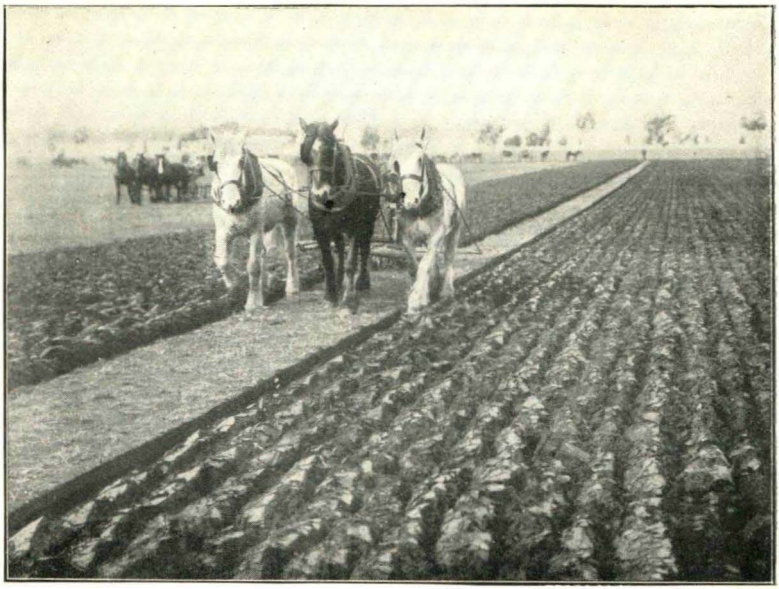
The abundant spring grasses make this possible without engaging in anything in the nature of a gamble. As the ewes age they are fattened off and sold, and replaced with younger ones. These sheep live entirely in the open, and in the great majority of cases thrive solely upon the native grasses. Some of our more advanced wheat growers use their flocks for grazing off the growing wheat, if it promises to develop too rapidly and rankly, while occasional men also grow rape and other forage crops for their ewes and lambs. The sheep are useful, too, in feeding off the bare fallow and keeping it in a clean state. Apart from the annual shearing and the marking of the lambs, the flock requires very little attention, and is easily handled by those who carry on the cultivation of the farm. What sheep work there is falls chiefly in the spring when the seeding is over, and before the wheat is ready for harvest.

Most of our wheat farmers also engage in a little livestock dealing. Their flock of one sheep to the acre is regarded as the safe carrying capacity of their paddocks in a bad season. In every good season—and the good seasons are in a considerable majority—the merino ewes

and their cross-bred offspring are over-supplied with grass. The farmer then looks about for a flock of a few hundred store wethers, and, as a rule, these can be obtained at a reasonable price from a district which is not so well favoured in that particular season. Store sheep of this class are constantly supplied to the farming districts from the large squattages further inland. It frequently happens that the wheat belt receives good rains in the late summer or early autumn. The downpour is immediately followed by a great burst of grasses. The farmer is assured that the usual spring growth will come six months later, and he is in a position to net a hundred pounds out of the extraordinary autumn product. He buys store wethers at, say, 9*s*. or 10*s*. apiece, and sells them a few months later at a profitable increase.

Large numbers of our wheat growers are now dairy farmers. Butter factories, nearly all of them co-operative, are established throughout most of the wheat-growing districts. Obviously the cows require more labour than the sheep. But most of the wheat growers who combine dairying and cultivation are satisfied to depend entirely on the native grasses, which are at their best, as we have seen, from August to the end of November. This means that when the milk is in full flow, and the herd is making most work, there is comparatively little doing in connection with the wheat crop. Nevertheless, dairying greatly increases the work of the wheat grower, and is invariably unpopular with his family and his employees. The tendency of the farmer is to encourage his family to do the dairying in the early morning and late evening, in addition to the ordinary labour of the farm, rather than to tell off a special staff for the care of the cattle.

Prior to the dairying days we looked for a slack season on the wheat farm in the autumn and spring. When the cream separator made milk production easy and profitable, we found we had to work hard all the year through. Considerable herds are milked by the farmers' children; indeed, this practice is carried to an unfortunate excess



GOOD WORK WITH THE PLOUGH.

COMBINED HARVESTERS AT WORK.

in many of our rural districts. It is common for boys and girls of tender years to milk ten and twelve cows apiece, and walk two or three miles to school, before half-past nine in the morning. They bring the cows home with them as they return from school, and are milking again until dark or afterwards. We did this with a very bad grace as children, and were often caught sleeping soundly over our lessons in the warm bush schoolrooms. But, despite considerable outcry about it and dire prophecy of injury to the physique of the young Australians in the dairying districts, the practice seems to do the children very little harm. It is an inevitable phase of pioneering, and due to the average farmer's scarcity of capital during the early years and to the shortage of labour. Doubtless, as time goes on the evil will be modified, if not entirely removed.

If dairying is unpopular with the wheat farmer's children, it gives highly satisfactory financial results. The butter factories pay for the cream monthly, and this means that the farmer is able to pay cash for his stores, and so is saved from a ruinous system of credit. Before dairying came, a common practice among the early settlers was to go to the general storekeeper in the nearest township at the beginning of the year, tell him the area it was proposed to crop, and secure a year's credit for all classes of provisions. This covered almost everything purchased during the twelve months, including clothes and even the bags and twine used at the harvest time. The storekeeper took a lien, sometimes in writing, but as a rule only verbal, over the farmer's crop. The unfortunate settler paid a high credit price for his goods, and when he carted his wheat into the township after harvest he was under compulsion to sell to his creditor. Naturally he often received the lowest prices which the storekeeper could force upon him; in other words, he bought in the dearest market and sold in the cheapest. Of course, the storekeeper took considerable risks. Farming was very primitive then, and prices for grain were often low. For example, I remember wheat selling in Victoria

in the early nineties for eighteen pence a bushel. The tradesman always ran the risk of a bad season, when the district crops would not be sufficient to meet the bills, and he then had to finance dozens of farmers until the succeeding harvest.

Those undesirable conditions are now past, and dairying went a long way to make the change. Thousands of our wheat growers were enabled by the possession of a herd to pay for their stores from month to month, and when the year ended they were very frequently in the happy position of having the wheat harvest as clear profit over all working and living expenses. Apart from dairying, too, the higher prices prevailing over the last twenty years, and especially over the last ten years, for cereals and wool and meat have gone a long way to improve the financial position of even the latter-day pioneers. It is still common for the new districts, especially when they are made up largely of ex-farm labourers with very little capital, to carry on to a great extent on the credit system, and it is of the utmost importance to men of this class that credit can be obtained. But there is now more competition among store-keepers and grain buyers, and that, added to the higher prices for produce, prevents the extortion and hardship which was all too common twenty years ago.

A small percentage of our wheat growers engage also in orcharding. Fruit and vines grow well over nearly the whole of the wheat belt. Most farmers will, at least, have orchard enough to provide the home with fruits and a year's supply of jam, while some of them plant a few acres of trees or vines with a view to sales. The introduction of the orchard to the wheat farm is even more unpopular with the workers than the dairying. A few acres of fruit trees demand more attention than the rest of the farm. But in skilled hands the orchard is highly profitable, and that fruit growing and wine making can be practised so generally emphasises the wide range of rural pursuits which can be followed by these farmers. But, profitable as the various adjuncts are, the main purpose of the wheat grower

is naturally his wheat crop. He will make a fair living out of his sheep and cows or orchard, but it is his wheat which will make him rich. The successful wheat grower makes money in lumps. He may run along for two or three seasons in the enjoyment of a fair income, then will come an exceptional crop favoured by good prices, and he will make several hundreds above his ordinary earnings. This is the common story of the wheat grower, and explains why "shares" farmers so quickly become farming freeholders, and the farming freeholders frequently become small squatters.

The operations of the wheat grower fall chiefly in the hot, dry months of the year. Not only the harvesting, but a large portion of the ploughing, is done in the summer or autumn months. Immediately the harvest is over, and the wheat stacked or carried off to the railway station, the farmer turns his attention to cultivation. This is sometimes in January, and by February ploughing is in full swing. Summer is still at its height, and, as might be expected, the ground is often hard and the going very heavy for the teams. But, while it is practically impossible in the summer months to get the ploughs into new land, or land which has been for some years out of cultivation, the shares enter readily into the soil from which the previous crop has just been harvested. This land remains fairly loose to the depth of the previous ploughing, and the teams can also be active upon the areas which every good farmer has under bare fallow. The horses are in good hard condition after the harvest, and in the long days of the late summer and early autumn cultivation proceeds rapidly. The farmers use ploughs of several furrows, generally from three to five, and each furrow turns over about an acre-and-a-half each day. The work is dusty and unpleasant for both man and beast, but summer ploughing is so good for the soil that it is always adopted. Land turned over to the sun in February enjoys two or three months' fallow before it is seeded, a very important consideration in good agriculture.

As the winter approaches and the days shorten, the pressure increases. The ploughmen commence to rise earlier, and are out of their beds between four and five o'clock in the mornings. Some of our best agriculturists house their plough horses in the winter months, but generally the animals are turned out in the grass paddocks at night. If there are two teamsters at work upon the farm, one will go straight from his bed to the horse paddock, and travel in the darkness until he discovers the leg-weary teams. The other proceeds to the stables, which are generally rough structures of hardwood poles placed upright in the ground and roofed with straw, and puts out and mixes the feed. Meanwhile, the aged "rouse-about," or one of the farm boys, is pulling the live coals out of the kitchen fire, which was covered up with ashes over night, and making tea for breakfast. This is almost invariably comprised of cold mutton, together with home made bread and toast, and plenty of jams and pickles. Now and then in the winter time a steer may be killed, and everybody greatly enjoys the break on to beef for a few weeks. The Australian farmer and his children and employees grow very tired of the home-killed mutton.

There is some loitering over breakfast. The object in such early rising is to ensure that the horses will have about two hours' feeding before they are taken out to the ploughs. At about daylight they leave the farmyard. Where the ploughing is half a mile or more from the homestead, the mid-day meal is usually taken to the paddock, and the horses fed and watered on the spot, so as to save time in travelling.

Much depends, of course, upon the arrival of the early winter rains. If the farmer is recultivating the paddocks he sowed in the previous season, or has a considerable area under fallow, as every farmer now has, his ploughing is independent of the early rainfall. But if he wishes to break new country or re-plough paddocks some years out of cultivation, he must wait for the moisture. As a rule, the seeding is finished by the middle of May, but sowing

frequently continues until June, and even into early July if the weather has been unfavourable. Generally there is enough moisture in the land to give the April and May sowings a good start before the light frosts come in June and July. Anyway, the frosts rarely injure the Australian wheat crop, and are so mild that the young blades grow all through the coldest months. As a rule, the late sown crop is more or less a failure except in seasons favoured by exceptional rains.

The ploughing is followed by the ordinary harrowing, and, when the ground is rough, by some rolling. The seeding is done almost entirely by the improved modern drills. This brings us to the question of manuring. Nearly all of our wheat farmers now use artificial manures, the most favoured kind being superphosphates. These are drilled in with the wheat at the rate of about forty pounds to the acre. Seeding in Australia is exceptionally light. Exhaustive experiments have shown that the best crops are grown from about forty pounds of wheat to the acre, although the use of larger quantities ranging up to a bushel, and even more, is not uncommon.

Remarkable changes have taken place in recent years in the varieties of wheat sown. Down to the beginning of the century Australia's farmers kept pretty closely to well-known imported varieties of a kind deemed suitable for the hot Australian climate. But an extraordinary alteration was then worked by the brains and, one might justly say, the genius of a single man. This was an Englishman named William Farrer, who went to Australia in the eighties, and settled down upon a small block of land in the Queanbeyan district in New South Wales, where he carried out the cross-breeding of wheats upon a large scale. He worked, as the true scientist always does, for the sheer love of the thing, and quickly made it evident that his practices were destined to have a substantial effect upon the bulk and value of the wheat crop of the young country. He carried out thousands of cross-breeding experiments, aiming all the while at producing wheat which would be

immune from the various diseases from which the plant sometimes suffers, and high in flour content and best adapted to Australian conditions.

Farrer worked with great thoroughness, and was never content with what appeared to be a greatly improved variety until it stood its test upon an economic basis. A number of his wheats now make up the bulk of the eight or nine million acres sown annually in Australia. They are distinguished by their excellent flour qualities, their complete resistance to smut, and their economy in the growth of straw. For instance "Federation" has for years realised 6*d.* a bushel more than the old pre-Farrer varieties. This new wheat grows upon very short stems, which are practically free of flag. Farrer made a signal success here in getting a maximum of grain with a minimum of straw, an obvious commercial advantage in a wheat country where the rainfall is sometimes short, and rarely excessive. Within a few years Farrer accomplished in regard to Australian wheat-growing what the merino stud masters have in the production of wool. But his work was the more remarkable because it was accomplished by one individual. He was the poineer of wheat improvement in Australia, and he lived long enough to be recognised in all wheat countries as one of the greatest men of his age in the world of plant life.

The wheat crops require little or no attention between seeding and harvest. If growing too freely they are fed off by sheep, and sometimes harrowed or rolled. A large portion of the area sown with wheat is cut for hay. We make no meadow hay in Australia. The decision of the farmer to make hay or let his wheat ripen is made according to the relative prices promised for wheat and hay, or chaff. The option is a useful one, inasmuch as every crop of wheat which is excessively dirty with wild oats or other troublesome weeds can be cut green. This gives both a profitable crop of hay and at the same time, by preventing the weeds from seeding, has a cleansing effect upon the land.

Hay-making commences in November, soon after the shearing has been completed. Green crops are cut with the ordinary reapers and binders, and there is then a pause of two or three weeks before the grain harvest begins. I should have stated that the wheat belt is nearly everywhere suited for the production of both oats and barley. Oats are grown to some extent for corn, but more generally for hay and chaff. Malting barley proves very profitable in some districts, especially on the higher, cooler tablelands, where it is generally more remunerative even than wheat. Oats and barley are easily harvested with the reaper and binder, and subsequently thrashed. The thrashing machines are seldom owned by the farmers, but are travelled from place to place by their owner. The farmer pays all the men employed, and so much a bushel to the owner of the thrashing machine. Thrashing time, although it lasts only a few days, is the greatest event of the farmer's year. Breakfast is at six o'clock, and the machine has been running for two hours before that time, while work proceeds at the double until dark, which does not come until after eight o'clock. The travelling employees are paid by the hour, so that they do not complain at the long working days. But the farmer and his family, already tired with their own harvest, are usually exhausted when the machine draws away from their farm; while the housewife, who for a few days, with little or perhaps no help, has been cooking for sixteen or twenty men, which means that she has been working for practically the twenty-four hours in each day, is not sorry when the rush is over.

But the bulk of the harvest is now done with the combined harvester already described. A farmer attended by a man and a boy is able to gather, thrash, and bag 250 acres in the season with this wonderful machine, and so is made fairly independent of labour. Through the harvest months it is general to commence between six and seven in the morning, and to continue until sundown at about eight o'clock. There is a break of twenty minutes for "morning lunch" at half-past nine, about an hour for

"dinner" between twelve and one, another twenty minutes for "afternoon lunch" at four o'clock, while "tea" falls between eight and nine in the evening. The morning and afternoon lunches are made up of unlimited quantities of very hot tea, supplies of sweet cakes, and, if there is an orchard, some fruit. For mid-day lunch, there is the inevitable roast or boiled mutton, while for "tea" you get the same mutton cold. For breakfast, the dish alternates between cold mutton and mutton chops. You rarely see beef during the summer months, unless the farm happens to be close to one of the townships, and meat is bought rather than home-killed. But the majority of our farmers kill for themselves, which means mutton all the year round, with the exception of a beast or two killed in the winter, and occasional poultry on Sundays. Ale is never served to harvesters as in some districts in England. We drink great quantities of tea for every meal, and between meals water from canvas bags.

The harvest comes suddenly and finishes quickly. The crops ripen with a rush, and, unless they are immediately reaped, the heads loosen, and the grain falls. This means that the busy farmer is regardless of the hours he works. He is in the paddock just as long as there is light and sufficient heat for the threshing of the grain. Sometimes the dew at night is enough to toughen the heads so that they cannot be harvested very early in the morning; but, given dry conditions, it is now not uncommon to find men, by the assistance of electric and acetylene light, working the teams throughout the twenty-four hours. Of course, this means proceeding in shifts with two or three lots of horses and two lots of men.

It is common for a great effort to be made, especially by the younger members of the family, to clean up before Christmas. As growing lads we always promised ourselves a holiday for Christmas, and worked feverishly at the harvest all through December. But only once can I remember being successful. If there were no crop in danger of spoiling, we would cease work on Christmas

day, but if there were any urgency we were compelled to disregard it. As a rule, on the wheat belt, the last grain is bagged in the week between Christmas and New Year, or a few days afterwards at latest. Then comes the carting away of the grain to the nearest railway station. Grain is seldom stored on the farm, even if it is to be held on the chance of a rise in prices. The usual practice in storing is to take space near the railway station, or in one of the large salesmen's warehouses at the city of export.

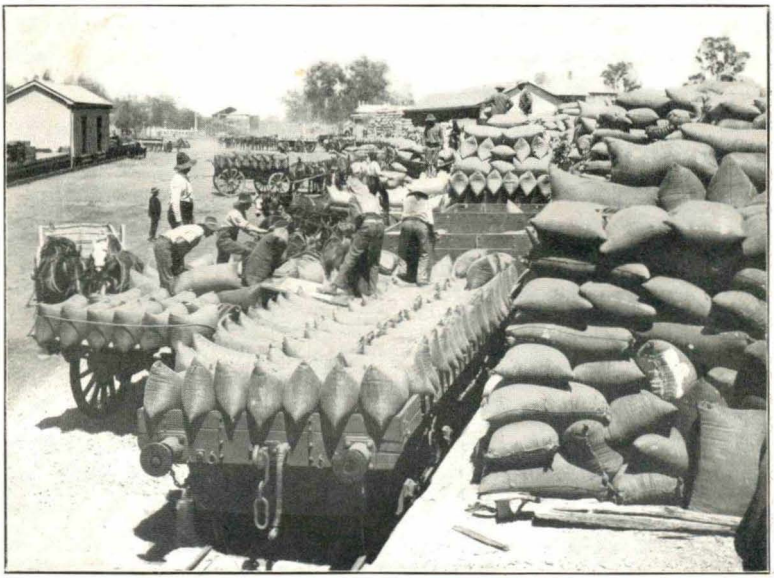
Australia does not yet practise bulk handling on the elevator system; all of the wheat is bagged. Down to a few years ago bags were made roughly to hold four bushels, or two hundred and forty pounds. Frequently they held more; sometimes as much as three hundred pounds. Before we came to manhood our young legs tottered unsteadily under these heavy weights. Within the past few years a humane Federal Government has forbidden the use of wheat sacks containing more than two hundred pounds, and has in consequence received the gratitude of every Australian farm labourer. Drays and waggons cart the bags over the dusty roads to the township. We feel by then that the rush of the harvest is over, and dally awhile swapping stories of record crops and other features of the harvest with our neighbours as we meet them at the cross roads, or as we unload at the railway station, or stop for a drink at the township hotels. The general comradeship of the countryside perforce goes to pieces in the crowded months of November and December, and is not renewed until January. As a rule, all farm stock becomes prime fat upon the rich grasses of the spring and early summer. The working horses maintain their condition, and their muscles harden during the harvest, so that they are in excellent fettle for the ploughing which, as we have seen, commences immediately the carting away is finished.

During the past ten or fifteen years, substantial improvements have been made in wheat-growing practices. We

have seen that Farrer did much by giving Australia more profitable wheat plants. Then there has been a big advance in what is known as "dry" farming. The uninitiated, however, will be extremely careful on this subject. It should always be understood that there is nothing new in dry farming. It was practised by the ancient Egyptians, and it merely means cultivating the soil so as to make the most of the moisture in lands where the rainfall is light. It does not mean, as is too often represented (chiefly, it should be said, by individuals and companies with huge areas of light rainfall lands to sell), that crops of wheat and other grains can be grown without rain at all. The stories which come from some of the western States of America, and more recently from South Africa and Australia, would lead you to believe that rainfall was almost a hindrance to the proper development of vegetation.

The amount of rain required for growing a crop of wheat varies according to the time at which it falls. Careful and repeated stirring of the surface soil, so as to produce a fine tilth which retains the moisture, will sometimes give profitable yields on country where the rainfall does not exceed ten or twelve inches. But much money is lost, and many hearts broken, because of foolish advice about dry farming. Each decade in Australia we are advancing further with our farming towards what used to be known as the desert. But the lower the rainfall the greater the skill and watchfulness required. Where one man would get a payable crop on a twelve-inch rainfall twenty would fail. All the patent machinery and "advanced" methods ever devised will not make up for the lack of moisture. Certain vegetation follows certain zones of rainfall all the world over, and without irrigation Nature's fixed rule cannot be tampered with. The wheat-grower in Australia is wise for the present if he keeps within the sixteen-inch or, at least, the fifteen-inch rainfall, and disregards the advice of the dry-farming cranks and the great dry-land owning interests which support them. One strong point

CARTING THE HARVEST.



WHEAT AT COUNTRY RAILWAY STATION.

against dry farming is that it necessitates an abnormal amount of cultivation. And cultivation is expensive.

In the early days of our wheat-growing it was customary for the farmer to continue wheat growing on land, year after year, until the paddock became either exhausted or excessively dirty with wild oats or thistles. That primitive practice has now been pretty generally abandoned, and a proper rotation system established in its place. There is no fixed rule for this rotation, but, generally, the farmer aims to have one acre under fallow for every two he has under crop. Thus, if he has three hundred acres of wheat land, he will give each part of it a complete rest every third year. In this way he keeps his land strong and clean, and has at the same time one hundred acres at least on which he is able to sow early, and so take a minimum of risk against the season. Not infrequently he allows his cultivated land to go back into grass and be grazed by sheep; and, in some instances, he cultivates rape, vetches, or other green crops upon his fallow, and either feeds them off with sheep or ploughs them in when green. The land for fallow is ploughed in the winter, immediately after the seeding is over. It then receives that season's rainfall, and during the following summer it is frequently harrowed, so that the surface is kept fine, even dusty, and evaporation, as far as possible, prevented. This, in brief, is what is known as "dry" farming. The fallowed land is sown in the following autumn, and, as dry farming is more or less successful, the subsequent crop has the advantage of two seasons' rainfall instead of one. Broadly speaking, dry farming is a shining success when the season is favourable; that is, when either a fair amount of rain falls or when what falls comes at an opportune time. It depends, too, upon the amount of wind during the season. I have seen huge districts in the alleged dry farming States of Western America in a bad season, and passed by thousands of acres of sown wheat none of which, despite the best dry farming methods, was deemed worth harvesting. The absence of rain and a windy season made an absolute failure of the system.

Summing up, the operations of the "mixed farmer" on the wheat belt are fairly simple and agreeable. He has neighbours on every side of him, schools within at most two or three miles' walk for his children, good roads leading to the railway township, which will contain a public library, a sufficient supply of churches, stores, and places of amusement. Sport is provided by an abundance of rabbits or hares, and sometimes both, with occasional wild duck and quail and snipe. The livestock on the farm, which often extends as far as the possession of some pure bred animals, greatly adds to the interest of the holding. Industry and intelligence are nearly always rewarded by an income considerably above the cost of living expenses, while the farm in nearly every case advances rapidly and substantially in value.

CHAPTER VIII.

The Dairy Farmer.

Three things about the Australian dairying industry would strongly impress the dairy farmer from Great Britain. First, there is the almost unlimited and very diversified area which is by nature suitable for dairying; next, there is the indifferent quality of the great bulk of the two million cows which make up the dairy herd; and, thirdly, there is the general absence of advanced practices and the ease with which high money returns are obtained.

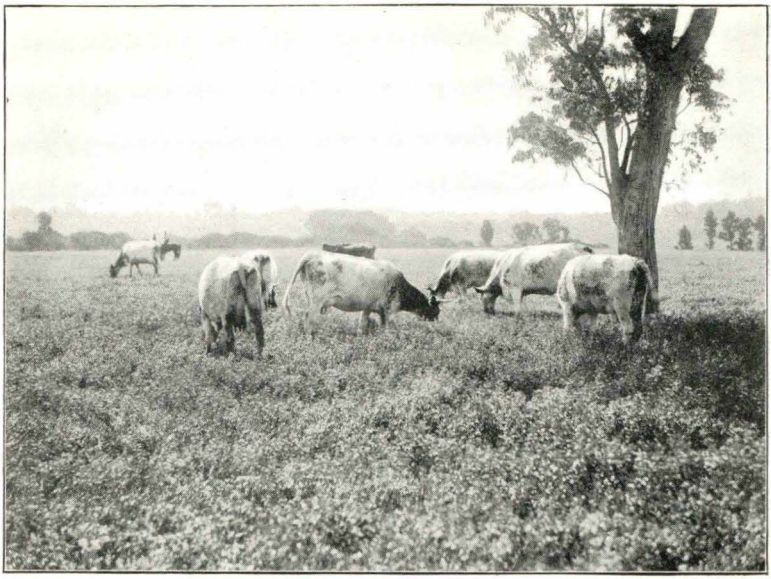
Before the cream separator and cold storage came to Australia the dairying industry was small and primitive. Butter and cheese were made in a few of the cooler districts close to the coast and in proximity to centres of population. The local market was closely limited. There was very little possibility of export, and the future of the industry seemed unimportant. We believed in those days that cool latitudes were indispensable to the production of butter. Then came the revolutionising machinery, and an extraordinary change was made. We know now that dairying can be carried on independently of latitude, and that, given sufficient rainfall, cows can be profitably maintained almost anywhere in the Commonwealth. High rainfall coupled with strong sunshine means great possibilities in pastures. Fat pastures are essential for high butter and cheese returns. The deep milker must get her meal easily; she is not suited for long foraging jaunts; she must live in comfort and plenty.

Our best rainfall country, as we have shown, almost invariably follows the coast, which in its natural state was

densely covered with forest trees, and often, too, with heavy undergrowth. While it promised a generous ultimate reward to the pioneers, it called for arduous labour and patient waiting for returns. Naturally much of it was passed by, and preference given to the wheat belt further inland, where, if the soil was lighter, it was more easily cleared, and was also better suited for the keeping of sheep. Until the separator and cold storage showed the possibilities of the export trade in butter, much of the richest coastal country was neglected.

When the profit in cows was clearly understood, pioneers attacked the dense forest and the undergrowth with confidence. They knew when they had expended £5 or £6 worth of labour in clearing an acre, that acre would support a cow, which on the average would easily yield a profit of £8 or £9 annually. Within a few years after this was realised, much additional settlement took place in Southern Victoria and more especially on the New South Wales coast north of Sydney, and right up the Queensland coast as far as Cairns, in the full tropics. And very quickly the dairy farmers discovered that with proper care they could produce butter in the sub-tropics, and even in the tropics, quite equal in quality to that they made in Southern Victoria. This discovery naturally caused much excitement in rural Australia; indeed it was of the greatest national significance. It promises more than anything else to solve the settlement and garrisoning of our tropical north. For many years it has been established that beef cattle will breed and thrive in Northern Queensland, in the Northern Territory, and in the great and equally rich areas in the north of Western Australia. Beef cattle are closely akin to dairy cattle. One is safe in saying that where the beef Durham will prosper so will the milking Durham, and probably most of the other dairy breeds.

We have no statistics to show how many dairy cattle there were in Australia twenty-five years ago, at about the time when the cream separator was introduced. But we know that the number was low. The rate of increase at



COWS ON LUCERNE.

IRRIGATED MAIZE.

the present time is shown by the fact that between 1901 and 1911 the dairy cows doubled from one to two millions.

Close behind the rich coastal margin is a long, irregular system of mountain ranges, the valleys of which are well suited to dairying. Here the industry is making steady headway. Further inland on the wheat belt, which lies between the ranges and the pastoral plains, the industry is extensively practised as a subsidiary to cereal growing and sheep raising. Roughly it may be said that dairying can be profitably practised upon all the country with a rainfall above eighteen or twenty inches, and that it gives really good returns where the rainfall exceeds twenty-five inches. There are, too, big possibilities for the cowkeeper upon our irrigated lands, where large numbers of cattle can, with the assistance of hand feeding, be maintained upon limited holdings.

Very early in the industry it became recognised that if any noticeable success was to be achieved, the Government must take steps to ensure sound and uniform methods in the manufacture and export of butter. The farmers, too, displayed an unusual disposition towards co-operation. Apart from dairying, there is very little co-operation among our rural settlers. It was found, however, that butter could not be made upon a large scale if each man proceeded individually. At the outset co-operative creameries were established to which each farmer carted his milk, and returned with the skim for his calves and pigs. The cream was then sent to butter factories in the cities, and the co-operative farmers divided the money received. But this system has been almost entirely displaced by the building of local butter factories. Most of the farmers now do their own separating, and so save much labour in hauling the milk to and from the creameries There are, too, a number of proprietary factories, which buy the cream outright from the farmers at prices fixed by the market value of butter from time to time.

The establishment of district butter factories marked a big advance towards a uniform product. There were still,

however, many weak spots in the manufacture. Thousands of farmers, hitherto strangers to dairying, had rushed into the industry when the separator and cold storage gave promise of assured monthly returns. The majority of these had the crudest ideas about sanitation and methods generally. Cream of all ages was delivered to the factories, and the butter was naturally indifferent and inconsistent. Shipments sent to London evoked loud and repeated complaint. The Governments of the various States quickly recognised that if dairying was to be developed into an important national industry strong measures must be adopted. The farmers, too, under the pressure of the best opinion among themselves, cheerfully worked towards improvement, and each year saw a general advance.

At present the Government supervises the industry right through from the cows in the pastures to the placing of the butter upon the London market. The cattle are subjected to a rigorous inspection by State veterinary surgeons, and all animals suffering from tubercular and other dangerous diseases must immediately be slaughtered. Then every cow must be milked under a shed with a clean concrete floor. The milk and cream must be kept while on the farm in a specially constructed building isolated from other premises. Sanitation and cleanliness are insisted upon at the butter factories. State railways and the coastal steamships are provided with efficient cold storage accommodation to convey the butter from the factories to the port of export.

Arrived at the port, the Government provides ample cold storage accommodation while the product is awaiting shipment, and before the commodity can be exported it must undergo inspection and grading by State experts. These officials first satisfy themselves that the butter is fit for export at all, and afterwards they divide it into three grades; first, second, and third, and each box is plainly stamped in a manner to show its grade. This compulsory grading has undoubtedly had a marked effect in levelling

up the output of the factories. One copy of the grader's report is sent with the butter to London, and another copy returned to the directors of the factory of origin. If the report is unfavourable, the directors, who are elected by the co-operative farmers, are in a position to take action against their butter-maker. If the latter is unable to effect improvement, the Government is ready to send, at its own expense, an efficient State expert to make inquiry into the workings of the factory and the supply of cream. These experts frequently stay at the factories for some weeks and take full charge of the operations. It is often found that the fault is not with the factory manager, but with some of the farmers themselves, who are supplying inferior cream. As the concern is worked upon a co-operative basis, it is at times difficult for the directors to bring pressure upon one of their own members. But when the State steps in with its independent investigation, this is made easy. The causes are traced, perhaps, to insanitation, or to the presence of weeds in particular pastures, and action is taken to remove the obstacle to success.

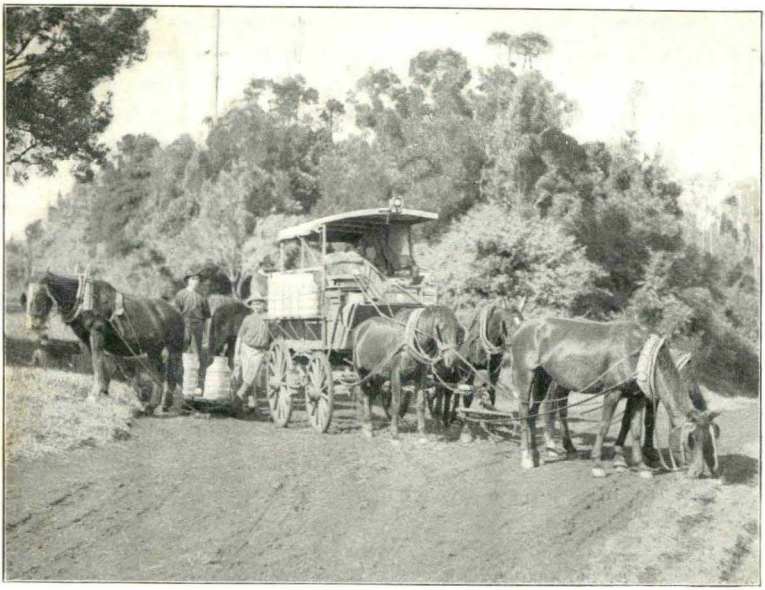
It was also hoped that grading would facilitate the marketing of the butter abroad, as it has undoubtedly done in the case of New Zealand. So far, however, the Australian graders have not been definitely accepted by the London trade. Tooley Street, the great butter market, complains that Australian grading is not yet sufficiently uniform. This is, doubtless, due to the very wide area over which the butter is made, and to the number of graders employed. The difficulty, however, promises only to be temporary. Grading is unquestionably right in principle, and, as the palate of the Australian experts comes more closely into line, the system should prove quite as successful as it has in the case of New Zealand.

If the Australian dairy farmer is to be commended for the disposition he has shown to co-operation in manufacturing and marketing, very little can be said in favour of his methods in other directions. At the same time, it must be recognised that this industry—already so

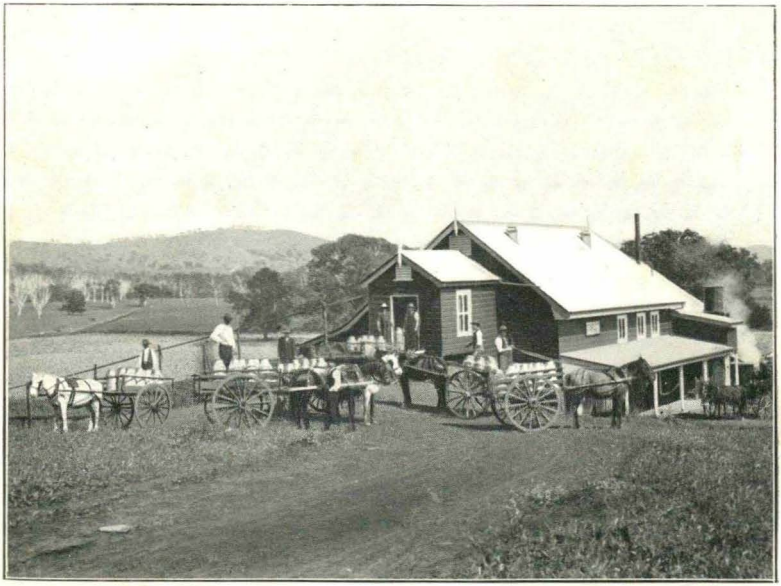
substantial, and possible of almost infinite expansion—is only in its infancy. Great progress has undoubtedly been made, and Australian dairy practices are inferior in comparison with those only of Denmark and other countries where butter making has been proceeding for centuries. The two chief weaknesses in the Commonwealth are in the quality of the cattle and in the almost total neglect of that hand-feeding which is necessary to produce a flow of milk all the year round.

The indifferent quality of the cattle is simply explained. When the possibilities of dairying were revealed, the cattle of the Commonwealth were chiefly made up of beef breeds. Dairying received very little attention among the farmers, and none from the larger holders. It was a common sight, twenty years ago, to see settlers dividing the product of their dairy cows with the calves. The cows would be taken away from their calves at night, after a wild struggle, which was anything but conducive to milk production. All night the parents and their offspring bellowed for re-union. In the morning the angry, excited cow, thinking only of her calf, was milked by the settler. The calf was then returned to her, and remained with her until the evening. Among many of our squatters you still see, every day, this extraordinary performance. When the news about the profits of dairying spread over the countryside, cows of every description were hustled into the rough-and-ready home-made bails. Beefers greatly predominated. The first herd I remember milking contained a couple of Polled Black Angus, a few bawley Herefords, some beef Shorthorns, and a number of nondescripts made up of crosses of all three. Naturally, the product from motley groups of this description was, individually, very low. But grass was abundant, and the expenses light, and even then dairy farming paid us well.

Already in twenty years the position has undergone considerable change. The Australian settler is instinctively fond of pure bred stock. He has inherited from his British farming ancestors a keen eye for good form



FARM BOYS DELIVERING CREAM TO THE CO-OPERATIVE WAGGON.



CO-OPERATIVE BUTTER FACTORY.

in horses, cattle, and swine. The most hopeless selector will contrive to have something in the nature of a thoroughbred, usually a weedy horse, with which he hopes to win a local handicap, and dreams of ultimately winning the Melbourne Cup. From the outset there was a general determination to displace the nondescript beefers with milking cows of good strains. The first step was the purchase of sires of improved breeds. But so scarce were dairying stud cattle that for some years little could be done in this direction. A few long-sighted men, however, began importing dairy cattle, chiefly Ayrshires, milking Shorthorns, and Jerseys, from Great Britain, and later on the Agricultural Departments of some of the State Governments commenced similar imports of cattle, which they placed at the disposal of the farmers at nominal prices. The result was a steady change from the mongrels to good grade milkers, and this tendency is being everywhere continued. Within another generation the traveller in Australia will probably be as much impressed with the quality of the dairy herds as he is to-day with the high standard in merino sheep, beef cattle and horses.

So far preference has been given to the milking shorthorn and the Ayrshire, with the Jersey next in favour. The Guernsey cow has also a rapidly increasing number of admirers, while all other British breeds, including the Kerry and the Dexter Kerry from Ireland, have their fanciers. There are also many herds of the Holstein. The Shorthorn is particularly suitable to the sub-tropical and tropical areas, where the heavy growth of grasses gives an easy living for very little travelling. The Ayrshire is more popular further south, although right through the coastal districts the Scotch cattle are crossed with the Shorthorns with advantage. Occasionally you find a tendency to evolve a distinctive type of cattle which is, to an interesting extent, the product of peculiar local conditions. The best example of this is to be found on the rich coast south of Sydney, where the Illawarra cow,

a cross between the Ayrshire and the Shorthorn, has become a fixed type, and makes up one of the best milking herds to be found anywhere in the world. The little Channel Islanders are at home under the most extreme conditions. They do well in the south, and also flourish exceedingly right up in the tropics.

Housing is nowhere necessary. The cattle run out of doors all the year round, and only on some of the higher tablelands, such as the New England district in New South Wales, the Darling Downs in Queensland, and among the mountains, is rugging at night imperative. This simplifies operations to a great extent; indeed, in dairying, as in all other rural industries, the natural conditions are so favourable that they encourage very slack practices among the farmers. So far there has been an almost complete dependence upon the pastures, and hand feeding has not been generally adopted. The dairying country with its high rainfall is the only portion of Australia on which exotic grasses can be sown to advantage. There the native grasses which come after the destruction of the heavy forests are inferior to the growth which follows the sowing of English varieties, and some of the larger and coarser grasses from tropical countries. These strangers flourish throughout the greater part of the year, and especially in the summer months. Further inland on the wheat belt, the farmer is dependent entirely upon the natural pastures, which are in some cases supplemented by the growth of forage and fodder crops.

Naturally this dependence upon pastures means an intermittent flow of milk. The output of butter is heavy when the grasses are good, and falls away as the season becomes less favourable, and entirely ceases in the event of a temporary drought. For some years our best dairy farmers have been giving more attention to the cultivation of sufficient soil to grow fodder both for green feeding and for the making of ensilage. Silos are being increased. The Government Agricultural Departments are assisting this movement both by demonstrating the value of ensilage,

and in some States by the loans of the money necessary for the building of the silos. Nearly the whole of the dairying country is well suited for the growing of maize, sorghum, and other fodder crops. The average yield of the Australian dairy cow is low; scarcely half of the yield in Denmark. To some extent this difference is due to the poor quality of the Australian cattle, but in the main it is due to the lack of hand-feeding in the seasons when the pastures are at their worst. Nor is it likely to be greatly improved for many years. In the well-established districts our farmers, as we have seen, are raising the standard of their dairy cattle, and they are also slowly awakening to the increased profits which would follow less dependence upon Providence and greater activity in the production of green crops. But despite this tendency, the advantage will for a long time be set off by the constant opening up of new dairying districts, in which the quality of the cattle will at the commencement be poor and the dairying practices slipshod.

It is rare to find a dairy farmer of any kind who is not prosperous. Our men not only make a sound income after paying wages, but the great majority of them are saving money. Those who are active in improving the average yield of their cows by attention to breeding and the provision of fodder are among the largest money spinners of our rural settlers. The dairy farmer in England who emigrates to Australia and adopts there the painstaking methods he has applied to his industry at home is assured of very big returns upon his capital. And even for the young and inexperienced man dairying in Australia is a very sound venture.

Good dairy land in its green forest state can be obtained from £3 to £10 an acre. Improved farms in the best districts frequently change hands at prices up to £50 and even £60 an acre. The beginner in the forest will find at the outset sufficient natural grasses to support a small herd, so that he has some income from the day he takes possession. The clearing is heavy and arduous: rich soils grow

heavy forests. But, after the first burn—which will destroy only a small part of the forest—exotic grasses can be sown. The aim is to make a rough job, and reach an income as soon as possible. The balance of the timber can be cleaned out over a number of years, and, as each tree is felled and burned, the carrying capacity of the farm advances.

Butter factories follow closely after the pioneer. Some of the farmers deliver their own cream to the factories, but, as a rule, co-operative waggons are driven through the districts. The cream is then carried and placed upon a rough stand by the roadside, from which it is collected and the empty cans returned, with a minimum of delay to the waggoner. Sometimes the farmer uses a sleigh to carry his cream to the roadside.

Some of the dairy farmers cultivate potatoes and maize, and other crops, as an adjunct to farming, but the majority of them are content to depend upon their cows, and calves, and pigs. Swine give good profits, and, with the increase of bacon-curing factories, some of which are run on a co-operative basis in conjunction with the butter factories, the industry is steadily advancing. Cheese is made upon an increasing scale, and the quality is distinctly good. In 1911 about sixteen million pounds of cheese was made, its value being about £400,000. So far, however, the Australians are not cheese eaters. Perhaps this is due, in some measure, to the cheapness of meat, and the large extent to which it is consumed. Perhaps, too, cheese is unpopular because, in a hot climate, it is inclined to be a somewhat greasy and unattractive foodstuff. This might also be said about butter. But, by the extension of butter factories, ice has in recent years become very cheap over wide areas of the Australian countryside, and is coming into general everyday use among our settlers. We appear to be approaching a time when, as in America, we shall regard a daily supply of ice as indispensable as our supply of bread.

The beginner on the dairy farm generally commences by the purchase of a herd of heifers, or of milking cows in

their first or second season. For good two or three-year-old heifers the price will range from £2 to £6, while grade cows of fair average quality can be had for from £6 to £8, according to quality and season. Labour sometimes presents a difficulty. Dairying is obviously more an industry for the married man with a growing family than for the single man. Milkers, however, are easily obtainable at from £1 to 25*s.* a week, in addition to their board and lodging. Families can be engaged to milk the cows either upon "shares" or for wages. Then, the milking machine is quite efficient, and is coming into general use.

Altogether dairying, while less attractive, perhaps, than wheat farming or life upon the grazing farm, excels both of those branches of settlement in the regularity and certainty of its returns. The dairy farms are smaller than those on the wheat belt, and, consequently, with more settlers to the square mile, there is more opportunity for social life, a greater number of centres of population in the shape of country townships, and a closer proximity to the sea, which means—even in the hottest months—plenty of cool breezes. There are the usual rural pastimes, including shooting, horsemanship, and very often excellent fishing. In the older dairying districts the breeding of stud cattle is widely practised, and farmers who are stud masters are never without interest. Agricultural and livestock shows are held throughout all the settled countryside, both on and off the coast, and competition between exhibitors, especially in animals, is particularly keen. The life is fairly laborious, but carried on as it is in an ideal climate, it is, on the whole, not unpleasant; and, as profits are on a generous scale, our dairying districts are marked by a spirit of prosperity and contentment.

CHAPTER IX.

THE ORCHARDIST AND VIGNERON.

ONLY a few years ago fruit could scarcely be given away in Australia. I have recollections of feeding pigs and calves on prime apricots and peaches, and of seeing plums of excellent quality drying on the branches or falling from the trees to rot on the ground. In those days—some sixteen or twenty years ago—we were almost entirely dependent upon the local markets. Summer would come, and the first fruit would ripen. For a week all would be well. Peaches and apricots would sell in Melbourne at high prices, and the heart of the orchardist rejoiced. Then would come a few hot days; all through the orcharding districts, fruit would ripen with a rush. In a week the market was hopelessly glutted, and our selling agents in the cities would send us letters asking for remittances to cover loss on our consignments. It was then that the pigs and calves became useful, for at that time the Australian orchardist, with few exceptions, knew little or nothing of fruit drying or canning, and the operations of the local pulping and jam factories were limited.

Those were the dark days of Australian orcharding. Better times have now come. To-day, our orchards are profitable and are expanding rapidly. In every State you find prosperous fruit growers and vignerons, and thousands of acres of young trees are each year planted. Between 1902 and 1910, the area under orchards increased from 146,700 acres to 185,000 acres. And if it be considered that during those years all our rural industries

were exceedingly profitable, it must be allowed that the expansion of the orchards was only because fruit growing paid handsomely. The sudden change in outlook is easily explained. It is due solely to the advent of cold storage facilities, both on land and on the steamships trading between Australia and the outside world. The first consideration of the fruit grower in the Commonwealth is to raise produce, not for sale in his own country, but for the people of Great Britain, other European countries, North America, and the Far East. Australian apples are to be found for sale in most countries in the world, and pears in less quantity. Dried fruits and raisins are also meeting with large demand abroad; while each year brings the southern grower closer to the time when he will be able to send more delicate fruits, such as grapes and peaches and apricots, in perfect condition to all parts of the world. Within the past two years large quantities of Western Australian grapes have been sold at high prices in London. Peaches and apricots from South Africa are to be seen each year in the fruit shops of London and the provinces, and as these have braved the tropics, the Australian is confident that the difference between a three and a six weeks' voyage is of small consequence. Distance counts for little nowadays in deep sea transport. Apples from five of the six Australian States are sent to London for slightly less than 1*d.* a pound.

In the section dealing with markets, I have explained how Australian fresh produce reaches the markets of the Northern Hemisphere at the season when supplies are lowest and prices at their best. Fruit ripens naturally in Australia from the beginning of December to the end of March. During those months the northern orchard is deep in winter, and when Australia's apples and grapes arrive in Covent Garden they find the north almost dependent for supplies upon the limited and expensive product of the hothouse. It is this fact which appears to ensure for the orchardist of the Commonwealth so great and successful a future. We might increase our

Australian orchards and exports twenty fold, and still run very little risk of glutting the markets of Europe and North America between, say, January and June. When English strawberries and cherries find their way to Covent Garden, Australia's last consignments of apples are being offered. We have had a clear field before the sun has returned to ripen the northern fruit. Consequently it may be laid down with confidence that the Australian fruit grower has an assured market, and that the present orchard area in Australia may be almost indefinitely extended without any danger of over supply.

The Commonwealth is rich in fruit lands. Good orchard produce may be raised in all of the States where the rainfall is sufficient. In Queensland such tropical products as the pineapple, the paw-paw, the mango, the custard apple, the banana, and the guava grow to perfection in the northern part of the State; while on the southern tablelands, English fruits flourish as they do in Kent and Devon. In the other States farther south are found localities admirably suited to citrus fruits, apples, pears, peaches, plums, apricots, almonds, olives, and figs; while all the berry fruits flourish in Tasmania and in the colder districts of the mainland. It is, indeed, difficult to name a fruit which will not grow under natural conditions in some part of Australia. Not only are the soil and the climatic conditions satisfactory, but the country is so far fairly clean of pests, frosts are seldom troublesome, and the orchardists may look for a regular return without a heavy working expenditure.

These orchard lands are to be had at low prices and on easy terms. This is true both of irrigated and unirrigated areas. In Tasmania and Western Australia, the two States which have shown the biggest increase under fruit trees in recent years, the fruit grower depends on the natural rainfall. Between 1902 and 1911, the area under fruit trees in Tasmania increased from 11,500 acres to 30,000 acres, and in Western Australia from 6000 to 17,000. This develop-

A MAIN IRRIGATION CANAL.

A YOUNG ORANGE GROVE.

ment was almost entirely due to the financial success attending the export of apples to Europe and North America. In Tasmania and Western Australia, the man who is commencing as a fruit grower requires a capital of at least £600 to £1,000. He will take up heavily timbered land which must be cleared at considerable expense, and then after he plants his trees he must work and wait for three or four years while they develop to the bearing stage. Of course, cleared land may be purchased, but if so, the price paid will be substantially heavier. During the years while he waits for his harvest, some return may be obtained from roots and other crops grown among the young trees, though this is a practice not approved by all orchardists. A man with from £600 to £1000 should be able after, say, four years to look confidently for a net income of £300 and upwards. Tasmania is at present appealing successfully for settlers to Anglo-Indians who are about to retire from the Civil Service or the Army. Some enterprising private companies are offering suitable orchard lands upon an easy time payment system, and the undertaking to plant, cultivate, and care for the trees generally at a fixed sum each year until the orchards come into bearing. The scheme has proved popular with the Anglo-Indian, who, by its agency, is abl to send his money from India during the years immediately before his retirement, and later to walk into his fruit farm when it is full and profitable bearing. A man with an income of a few hundreds a year is thus enabled to escape the drudgery of the unremunerative term of pioneering. Of course, there are plenty of men, both in Tasmania and Western Australia, who begin with very little capital indeed, and who manage to carry over the first few years by dividing their time between their orchards and neighbouring farms, where they take service as labourers. Forest land in its virgin state can be bought from the Government from 15*s.* to 30*s.* an acre. The same land cleared and fenced and planted with fruit trees would cost about £30.

On the irrigation settlements of Victoria and New South Wales, where the orchardist will probably make greater headway than anywhere else in Australia during the next decade, a start is cheaper and easier than in Tasmania or Western Australia. The settlers live in a hotter climate in northern Victoria than in Tasmania, but as compensation they reach profits more quickly, and their annual returns will probably always be somewhat higher. In both regions the orchardist is, and will continue to be, very prosperous, and the choice of location is a choice between a climate which, in Tasmania and the south-west corner of Western Australia, is similar to that of England, and the hotter, drier conditions of the irrigated territory.

It is not easy to write with certainty of the money required and the probable returns from orchard lands. The personality of the settler plays a far bigger part in all branches of farming than is generally admitted when estimates are being framed. But writing with intimate knowledge of irrigated country in Australia, I should say that a man of average industry and intelligence and, say, about £500 may look to make an income of at least £200 in his first year, and from £300 up to £1000 subsequently. That would be after paying for labour and allowing interest on his capital. It should be explained that our fruit growers on irrigated country do not confine themselves only to fruit. The new settler would take up, say, 60 acres of land, and in his first year would not plant more than 10 acres with fruit trees. On the balance he would immediately engage in dairying and the growing of fodder crops, chiefly lucerne (alfalfa). But as orcharding profits are higher than those from dairying or hay-making, he will increase the area under fruit trees from season to season.

The 60-acre farm would, under the Victorian Government scheme, cost perhaps £15 an acre, or a total of £900. This amount may be paid off at the rate of six per cent. per annum, which, continued for thirty-one and a half years, clears both interest and capital. The first half-year's payment amounts to £27. A house built for the

settler by the Government at a cost of £200 may be paid for over twelve years. Say £250 are spent on improvements at the outset, and thus we get roughly :—

	Total Outlay.	Government Loan.	Settler Pays.
60 acres of land, at £15 ...	£900	£873	£27
House	200	270	180
Improvements	250		
	£1350	£1143	£207

This leaves the man possessed of £500 with £293 to purchase livestock and implements and to get a start. Income, as we shall see when we reach irrigated farming, may be commenced during the first three months, so that one is safe in saying that a capital of £500 is adequate for a good start on one of the irrigated blocks in Victoria.

In New South Wales, on the Murrumbidgee irrigation scheme, some hundreds of thousands of acres are being made available along somewhat similar lines, but with this difference, that the New South Wales Government has decided not to sell the freehold of its lands. The tenant is to have a perpetual lease at a rental of 2½ per cent. upon the unimproved value of the land, which is to be re-assessed every twenty years. The initial expenditure for a 60-acre farm under the scheme works out roughly as follows :—

	£	s.	d.
Rent	27	3	9
Water rate—half only due the first year ...	6	5	0
First of two instalments on fencing ...	4	14	6
Survey fees	4	5	0
Charges on the land	42	8	3
First instalment on £400 house	40	0	0
Interest at 5 per cent. on house	20	0	0
Total	£102	8	3

Make allowance again for livestock, implements, etc., and it will be seen that a little capital goes a long way in Australia when invested in irrigated orcharding. The New South Wales Government requires that the settler shall possess at least £500.

Of Australia's fruit growing down to a few years ago, it may be said that it has been in the expensive and experimental stage. We have been seeking for the products which would best suit our local conditions, and, at the same time, meet with favour in the export market. There has been much planting and uprooting, and the fact that, despite this handicap, profits have been sufficient to encourage growers to increase their operations, is a sound guarantee for success in the future. Settlers who begin to-day lose no time in experiments. They commence at once by planting trees the produce of which has an assured sale. Each year, too, our growers are advancing rapidly in the art of drying and canning, and in these directions there are boundless possibilities for export.

Fruit growing is one of the most arduous branches of farming. It calls for heavy and constant labour, and skill and experience intelligently applied. The orchardist knows few slack seasons. The popular notion is that fruit trees flourish unattended, giving a brave show of blossom in the spring and a generous harvest of fruit in the summer. But when the orchardist has cultivated his land, dug or hoed round his trees, and attended to his pruning, spraying, and bandaging, as well as thinned his young fruit, and completed the picking, and packing, and carting away, he seldom finds time to rest with an easy conscience. Rich orchard lands, if neglected, grow an abundant crop of weeds and grasses: the watchful owner is always moving between his trees. Pests are, on the whole, not very troublesome in Australia, but we have the codling moth and other insect and fungoid enemies, and have to be vigilant in keeping them in check. For the careful man they have no terrors, provided his neighbours are not permitted to breed them. The Governments of the States compel orchardists, under penalty of fine and the uprooting of their trees, to adopt destructive and repressive methods, and thus the vigilant man is defended against those who are slothful.

With all its hard work, the life of the fruit grower is not unattractive. Practices vary sharply from month to month, and so orcharding is perhaps less monotonous than any other rural occupation. The industry, like dairying, is especially suited for men with families. There is plenty of light work at which boys are useful, and girls and women make clever and efficient pickers and packers. Generally speaking, Australian public opinion, even in the country districts, is opposed to girl and woman labour in the fields. It is very rare to see females taking any part in the production of grain crops, or, indeed, doing any farm work beyond milking cows, handling fruit, and attending to poultry. They are, however, especially adapted for working among fresh and dried fruits, and in those districts where drying and bottling are extensively practised the women of the house are kept very busy over several months of the year.

Vine growing is practised in all of the mainland States with the exception of Queensland, and, judging by results, it is, like orcharding, capable of almost boundless expansion. At present the area under vines reaches 90,000 acres. Most of the crops grown are for wine, although substantial and increasing profits are made from raisin production, and from the supply of the fresh fruit to the increasing local markets. Many of the irrigation orchardists have a few acres under vines, and find them highly profitable. So far, wine is not generally drunk in Australia. Even in the localities where it is cheap, it takes a distinctly second place in public favour to beer. You do not find even in the wine-producing localities that general consumption by all classes which is so common in areas on the Continent. This is not due to any lack of quality, but is simply a matter of the breeding of the people. The Anglo-Saxon, accustomed to beer at home, will for some generations at least drink beer in preference to wine in Australia. Australian wines are by European standards decidedly good. It seems inevitable that as time goes on the local market will show great improvement.

Considerable quantities of wine are sent to the United Kingdom, the value of the export in 1910 being £128,000. The bulk of this wine is made up of a full-bodied, red burgundy, which has become very popular with some classes in Great Britain. Australia's best wines, however, are scarcely known in the Mother Country, for the simple reason that the price of the Australian production is, quality for quality, somewhat higher than Continental wines with an old-established reputation. Although vine-growing land in Australia is very much cheaper than in Germany, France, or Spain, labour is more expensive, and the Australian farmer looks for higher profits than his peasant rival on the Continent. On the whole there appears to be a better prospect for the growth of raisin and table grapes in Australia than for grapes for wine. In an earlier chapter on markets I have shown that successful experiments have been made in the export of fresh grapes to London. There is every justification for believing that these experiments are the beginning of a big and lucrative trade, which will place vine growing in Australia upon a new footing.

CHAPTER X.

Sunshine and Water.

The early colonists in Australia noted the ideal opportunities for irrigation offered by the wide sweeps of the gently undulating inland country, served by rivers, and favoured by strong sunshine during the greater part of the year. Given rich, friable soil and a water supply, irrigation is increasingly profitable as the rainfall diminishes. With moisture assured, the fewer the cloudy days and the hotter the sunshine, the greater the annual production; in other words, the greatest yield comes from irrigable land which enjoys the longest growing season.

If the limited areas of high tableland country in the Commonwealth are excepted, it may be said that the growing season can be extended throughout the twelve months of the year. Wheat and other cereals make slow but sure progress throughout the brief cold period, and, as the sunshine returns, shoot up and mature at a rate which never fails to surprise the new arrival from the Mother Country. But, under natural conditions, the season of growth is very limited. Except in those years in which there is abnormal summer rain, it does not exceed three or four months out of the twelve. The reputation the continent has as a home for livestock is due to the fact that the grasses which grow and ripen so swiftly suffice, with their harvest of highly nutritive seeds, to maintain animals over the balance of the year.

The early settlers who were at all familiar with the practices of irrigation, at once saw that if moisture enough could be provided, there was nothing to prevent green

crops all the year round, and an unbroken succession of harvests. But irrigation, on a big scale, calls for heavy expenditure upon dams and other conservation works, and upon a network of distributing canals. Here and there a settler set up a little individual scheme of his own, but, as this meant much labour and intensive cultivation upon a small area, it did not appeal strongly to men who, thanks to the almost unlimited areas of land at their disposal, were inclined rather to lead an easier life at pastoral pursuits, or at agriculture and grazing combined. Until early in the eighties, when Victoria, whose people have always been conspicuous among the Australians for their spirit of enterprise, commenced building weirs and cutting channels, practically the only irrigationists in the country were the Chinese gardeners. All through the settled districts, and extending right out into the remote interior, the traveller of thirty or forty years ago found dotted over the country refreshing little plots, seldom more than an acre or two in extent, of irrigated vegetables and fruit. In the hot, dusty summer months, every settler's thoughts turned with gratitude to the clever, cheerful Asiatic who had come among them, excavated a big tank, stored a supply of water, and, with the assistance of hand pumps, given the district for twenty miles around an assured supply of fresh produce at reasonable prices. The pioneers might, for very little labour and trouble, have imitated the Chinese. But with big areas of cheap land in our possession, and a disposition for riding about after sheep and cattle rather than for laborious labour with hoe and spade, we were well content to take our supply of vegetables from the "John." But when Victorian legislators, inspired by Mr. Alfred Deakin, began to talk of the possibilities of the countryside under irrigation, we thought of the Chinese gardeners, and the most bigoted "dry" farmers amongst us had to admit that by the artificial application of water one acre could be made to produce as much as ten dependent upon natural conditions.

Once started, the irrigation idea travelled rapidly. Doubtless there is room for much profitable work even

EXCAVATING IRRIGATION CANAL.

close to the coast, but the true home of the irrigationist in the Commonwealth is out on the wide, lightly rolling plains of the interior. Australia's inland rivers in their normal state are not impressive waterways. Even the best of them fall to little more than a trickle in the driest parts of the year, while the majority dry up into a succession of unconnected water-holes, or even disappear entirely. Seen in late summer they appear to be without irrigation possibilities: you might ride or drive across "rivers" which are clearly marked on the map, and make dust in the crossing. But these same rivers pass down huge volumes of water in the annual wet seasons, while in the occasional flood year they frequently spread out for miles over the surrounding country, and roll slowly like a muddy, inland sea towards the coast. Providence has been exceedingly gracious to our settlers over those wide areas where the rainfall, although occasionally heavy, has a habit of sometimes failing utterly for two or three seasons in succession. We have discovered, at various depths, apparently inexhaustible supplies of artesian water, which, when bored into, gushes to the surface and pours, in channels extending for many miles, clear, life-giving water.

Another boon is found in the great mountain gates through which the wide shallow streams of the plains occasionally pass. Without this phenomenal formation it would be an almost impossible task to dam up and conserve these intermittent streams. But the occasional range of hills falling across the inland river at right angles, and broken by a narrow pass, supplies the hinges for giant gates of easy construction. Our engineers have located many places where, at a relatively low cost, the flood waters of the wet seasons can be impounded and conserved until the time comes for them to be led out and applied to the thirsty soil.

The enthusiasm with which irrigationists have proclaimed the ideal fitness of great areas of the Australian country-side for irrigation has led to some misconception about the country as a whole. Without labouring the point, it must

be insisted that, while there is a remarkable opportunity for the artificial application of water, Australia also possesses almost infinite sweeps of country graced by a good rainfall upon which irrigation is superfluous. The reader must always keep in mind that Australia is as large as the United States, and three-quarters as large as Europe, and that while irrigation is necessary and profitable in the Mediterranean countries and in the Western States of America, it is uncalled for in Northern Europe and on the Atlantic slope of the North American continent.

At an early date, irrigation will be practised extensively in all the mainland States of the Commonwealth. At the present time, however, it is confined almost solely to the great basin of the River Murray and its tributaries. A glance at a map of Australia will show that the Murray itself touches the three States of New South Wales, Victoria, and South Australia, and that the system which feeds it extends widely over northern Victoria, western New South Wales, and southern Queensland. There are hundreds of millions of acres of country in this basin which lend themselves admirably for the application of water. The land is made up either of level plains or of lightly rolling reaches, and the contour generally makes irrigation by gravitation cheap and simple. The first beginning of importance was made in northern Victoria, on the rivers Goulburn and Campaspe, in about 1882. Simultaneously, two small colonies were established on the River Murray, one at Mildura in Victoria, and the other at Renmark in South Australia, by private enterprise which had its origin in California. The main venture, however, was inaugurated and carried out by the Government.

In irrigation, as in many other directions, the Australian State plays a strong hand. The broad principle has been laid down that the river waters belong to the people, and are, except under special conditions, unalienable. In the main Victorian scheme, and the others which have followed in New South Wales and South Australia, the State builds the head works out of public money, cuts the channels or

ditches, carries the water to the settler, and charges him for it at a fixed annual rate. Party politics the world over ensure that State activity of this kind meets with much condemnation. But in the field of irrigation it is generally admitted that the State should be the sole owner and distributor of the nation's streams. The settler obtains cheaper water from the State than under a privately owned scheme, and at the same time runs no risk of exploitation by the raising of charges from time to time as his prosperity increases. The aim in Australia is that the farmer on the irrigated areas pays to the Government a price which merely covers the interest upon the money expended in the head works, the channels, and the administration. The State does not look, as does the private promoter of an irrigation scheme, to make a profit out of the venture; consequently, if the Government works along sound economical lines, the settler is assured of his water at bedrock prices. In the pioneering stage in Victoria, much money, doubtless, was wasted; but those early lessons have been profited by, and it can safely be said to-day that our State irrigation projects are being handled with efficiency and economy.

At the outset the Victorian Government experienced great financial difficulty, because of the unpopularity of irrigation among the men who held the land. Those farmers, who were the original selectors, held areas sufficiently large to give them a comfortable living without engaging in the more arduous and scientific practices of irrigated agriculture. The irrigated block is, of necessity, a small one. Each acre demands close attention, and a considerable outlay of clever labour. This is obvious when one remembers that the irrigationist who has a 60-acre farm may place half of it under orchard, and, on part of the balance, will harvest five or six crops of lucerne (alfalfa) in a season, while, on the rest, he will grow fodder enough to milk a herd of cows. The old selectors knew nothing of intensive work of this description.

The State began by charging the landholders only for the water they used. Some of the selectors used none at all; the majority bought water but sparingly. The result was an immediate shortage of revenue, and a substantial national loss upon the outlay. For nearly twenty years the Victorian scheme appeared to be an unqualified failure. Then a new Government breathed fresh life into the venture by the importation of one of the world's foremost experts in the engineering and economics of irrigation. Mr. Elwood Mead, who was at that time at the head of the irrigation branch of the famous United States Department of Agriculture, and whose name is a household word in the irrigation States of Western America, was induced to proceed to Victoria and take the scheme in hand. Mr. Mead has, within a few years, completely altered the outlook. He at once put his finger upon the weak spot in the original scheme. Owing to his influence the settlers in the irrigable areas were compelled to pay a fixed per-acre rate for the water which was available for their use, whether they used it or not.

The effect was instantaneous. Extended areas were either put immediately under irrigation, or were sold by their owners to escape the tax. But Mr. Mead went further, and the Government, careful as Australian Governments usually are to guard against hardship, came into the market as a wholesale buyer of land. All those holders who wished to sell their properties, rather than irrigate them, found the State a ready buyer at a fair market value. This gave to Victoria the possession of large valuable areas of watered soil, which was immediately cut up into small farms and offered to both local settlers and to people from overseas. Having accomplished this, Mr. Mead, accompanied by a member of the Government, proceeded, in 1909, upon a propaganda campaign in Great Britain, some of the Mediterranean countries, and the United States, and brought before thousands of desirable settlers the terms of Victorian land settlement and the possibilities of irrigation. By June, 1913, no less than

77,000 acres of this repurchased land had been settled in small holdings. The new settlers on this land numbered 1157, who are now thriving where only 103 large "dry" farmers were at work four years ago. In 1912 upwards of 200,000 acres were irrigated in Victoria.

Meanwhile the irrigation idea was taking a strong hold upon the minds of the people of New South Wales, and early in the century the Government there put in hand what is known as the Burrenjick scheme, in the valley of the Murrumbidgee. This great work, which involved the building of a dam second only in capacity to the famous dam at Assouan, was partially completed in 1912, when the first blocks became available for settlement. By July, 1913, upwards of 600 farms of an average area of about 40 acres had been taken up. South Australia moved simultaneously, and extended areas to be watered by the lower reaches of the Murray are now being prepared in that State. Western Australia has also made a beginning; while in Queensland the Government is giving the subject its earnest consideration. It should be mentioned that both New South Wales and Queensland have borrowed the services of Mr. Elwood Mead, and obtained expert reports upon the irrigation possibilities of their waterways, an important fact because it shows a generous disposition to commence irrigation in Australia abreast of Western American practices, which are, it is scarcely necessary to say, the most advanced and profitable in the world.

Down to 1911 Victoria had expended about £3,000,000 upon irrigation works, and in that year 143,000 acres were irrigated. Large additional schemes are now under consideration, and are essential unless the State is to close its doors upon the steady inflow of settlers who are now being attracted from Great Britain and Western America. The disposition of the American irrigationists to proceed to Australia is the best evidence of the advantages which are offered. The American farmer is, taken all round, a far keener business man than the farmers either of Great

Britain or of Australia, and that they will give up profitable holdings in California and other Western States, to commence again in Australia, indicates that cheap land, cheap water, and assured markets are available in the Commonwealth. The Burrenjick scheme in New South Wales provides ultimately for the irrigation of about 1,000,000 acres. In South Australia about 20,000 acres are irrigable, and supplementary works on a big scale are now in hand.

It is clear, therefore, that Australia is taking irrigation in earnest, and is fully seized with the possibilities which it gives in the increase of population, production, and national wealth. Of all farm life none is more attractive and satisfying than that of the small irrigated holding. The pioneer on an irrigated block avoids much of the roughness and all of the loneliness which accompanied the first conquest of the bush. He takes up country which has been for nearly half a century under occupation in large holdings, and in nearly every instance he finds it cleared and partially fenced, or at worst sparsely occupied by trees which have been killed by ring-barking many years before, and which are very easily demolished. If a man enters upon a block of, say, 60 acres in New South Wales or Victoria, he will find his holding a bare, unpromising piece of land, perhaps quite flat, and at most only slightly undulating. The absence of trees, although a saving in labour and a guarantee of quick returns, gives that air of desolation which invariably depresses the beginner upon the Canadian prairie: there is much companionship even if much heavy labour in the trees of the forest. But the experienced irrigator is untroubled by the bareness of the prospect. He looks ahead a year or two, and goes singing into his task.

Unlike the ordinary pioneer, the beginner upon the irrigated block may expect early results. In an incredibly short time after he takes possession of his bare holding, his income will have commenced, and within a year or two his home will present indications of that luxuriant growth and

picturesque appearance which go always with successful irrigation. The irrigated farm produces on the scale of a gigantic hot-house, with the difference that while the soil is always damp and warm and prolific, the atmosphere in which the worker moves is dry, clear, and exhilarating. The Englishman at home is familiar with what can be done in hot-houses under glass. When you get ideal irrigation conditions, the daily development of plant life is just as rapid as it is in the glass-house. But as it takes place in the open, it is far stronger and more attractive.

You commence on your area, perhaps, in the summer months when all the land is parched and dusty. Already the water channel is running along one of your boundary fences, or perhaps even cutting your property in two. If you wish your income to commence at the earliest possible date, you will immediately place your wooden checks across the stream of fresh river water, a simple operation that takes only a few minutes, and three or four hours afterwards your work as an irrigator has begun. You will lightly flood a patch of a few acres, and immediately it will carry a team of horses a start is made with ploughs and cultivators, followed by a sowing of maize or Cape barley or other green fodder crops. That done, the settler arranges for the purchase of ten or twenty milking cows, to be ready for the bails as soon as the green crop is fit for cutting.

At the same time, attention will be given to the fencing and building necessary for a run for the cattle and for their milking, as well as for the housing necessary for the cream separator. The little homestead will probably be simultaneously rising into shape, and there will be enthusiastic planning of flower garden and plantation about the home, with an avenue of various trees out to the roadway. The man who looks to make his house as comfortable as possible for his wife will also put in hand the construction of a stand to carry a windmill and tank, with a capacity of a few hundred gallons, at a height of fifteen or twenty feet. This will cost only a few pounds, and when it is

accomplished, it may be said in all truth that the settler's home has the conveniences of a London suburban dwelling. The river water is available for the kitchen sink and the bathroom, while there is an inexhaustible supply for flower gardens and lawns.

Long before this work is finished the crop of green fodder will be two feet high, and inviting the scythe. Within a few weeks after entry the settler is able to commence milking his ten or twenty cows, from which he may confidently expect a monthly return per head of from 15*s*. to 25*s*. The number of cows milked will probably depend upon the amount of labour available, and two good milkers, without hardship, can attend to from twenty to thirty head. The immediate income is one of the greatest attractions of this class of farming. It provides the new settler with money for wage paying, and probably, too, for the upkeep and expense of his house. It must all the time be kept in mind that irrigated agriculture means intensive cultivation, which calls, of course, for a considerable amount of labour. Within a few months of entry the settler on his 60-acre holding will aim to place, say, 20 acres under lucerne. The number of cuttings of this crop in a year in either the Goulburn Valley or the Murrumbidgee Basin may be taken as a sound indication of the possibilities of production generally. Five or six crops in a year, each yielding a ton to the acre, may be confidently looked for. Over a long series of years the average price of lucerne hay has exceeded £3 a ton on the ground, so, by easy calculation, it will be seen that lucerne growing is a profitable venture.

I was surprised to find, on a personal investigation into irrigation in Southern Canada and the Western States of America, how big an advantage Australia possesses in this respect over the North American Continent. Canadian irrigation is practised upon country which lies in a high latitude. The growing season is extremely short. In Southern Alberta the settler is lucky if he is able to get more than one cut of lucerne in a season, and although,

BEGINNING ON AN IRRIGATION FARM.

IRRIGATING A YOUNG ORCHARD.

thanks to the great richness of the prairie, this cut will be heavier than the average crop in Australia, the annual return is much lower. Again, in all the central irrigation States of the Republic the altitude above sea level is a big factor in reducing the heat of the sun and the growing months, so that there again the number of crops possible in a year is substantially below the average in the Commonwealth. And what is true of lucerne cultivation applies to production as a whole, and gives our southern farmer a big pull over his North American rival.

With a herd of twenty cows and 20 acres under lucerne, our irrigationist is already assured of no mean income, and although his labour bill will, unless he has a working family, be considerable, his margin of profit will not be small. The sowing and harvesting of lucerne is a simple process. The crop, which is cut as it flowers, is harvested with the common mowing machine, and as soon as it dries, which is only a matter of a few days in this brilliant sunshine, it is stacked, for choice under a high shed, covered with galvanised iron and open at the sides, and pressed and sent to market. Lucerne hay, unlike hay made from wheat or oats, is not troubled seriously by mice, and so may be stored almost indefinitely. Some of our growers store for five or six years until they get a dry year, when the price is seldom less than £6 a ton.

But this by no means ends the range of activities of the busy settler. He must find time during his first winter for a commencement with his real source of income, which is his orchard. A man with a 60-acre holding will look to have ultimately at least 30 acres under various fruit trees. Now, the planting and care of an orchard calls for much skill and expense. The trees have to be bought, and at least one expert should be present when they are planted, and his services will also be necessary in pruning and tending the trees until the owner is himself a competent orchardist. We know that the fruit growers of Tasmania and Western Australia, and, going abroad, in British Columbia, Washington, Oregon, and other American

States, have in recent years been engaged in a highly lucrative occupation, and that, thanks to the improvement in storage and transport facilities, there appears no fear of overstocking the world's markets with this class of fresh produce. Figures already quoted show that orcharding without irrigation in Australia has been so prosperous in recent years that the area under trees is being rapidly expanded. But all of these other Australian and American orchardists who are now doing so well are at a marked disadvantage when compared with Australian irrigationists.

To commence an orchard in Tasmania or British Columbia, or anywhere else, unassisted by the artificial use of water, means the possession of money enough to engage in a long, arduous struggle with primitive forest conditions and the financial power necessary to wait at least four or five years until the trees come into bearing. Our irrigation farmer, as we have seen, commences earning within a few weeks of occupation, and if he were to confine himself alone to dairying and lucerne growing, his income would be a big return upon his capital. But, good as the returns are from these sources, they are easily eclipsed by the average harvest of the fruit trees.

It is plain, therefore, that the men on these irrigated blocks are big money spinners. And all this is no mere building of castles. We have in Australia to-day many thousands of acres of orchards in full bearing. At Renmark, in South Australia, 5200 acres average about £100,000, and at Ardmona, and other beautiful settlements in the Goulburn Valley of Victoria, the average earning is commonly higher. Then these settlements have been pioneers. They have for twenty-five years been experimenting in the best methods of irrigation under Australian conditions, and in the varieties of fruit trees which are most adaptable both to local and export markets. The beginner to-day commences abreast of this hard-won experience, with a financial advantage which is obvious.

The income is by no means the only attractive side of these new colonies. Of all farming in the world, none is

so satisfying and attended by so much beauty and comfort as that practised by the irrigationists. We have pictured this bare, dusty piece of land with its early homestead, its life-giving stream of clear river water for irrigation, and its windmill ready to pump water for the use of house and garden. To paint another picture of the transformation which two or three seasons will work is to tax the credulity of dwellers in these northern islands. Of course the annuals of the flower garden will bloom in a few weeks almost the world over; but it is only the combination of hot sun, rich soil, and plentiful water that will so quickly make the house and outbuildings, which in the first few months stand in painful conspicuousness upon the landscape, the secluded centre of a veritable thicket of every description of temperate and sub-tropical vegetation. Nearly every settler makes the mistake of planting the shelter trees about his home too thickly, and within two or three years he will probably be engaged in relentlessly thinning out the little forest which has so marvellously risen at the doors of his household.

The irrigationist has few stores to buy. It is almost impossible to name fruits which will not grow to advantage. All may not perhaps give the same financial returns, but every man can quite well grow a wide selection in small quantities for his own satisfaction. If vines are not planted in a big way for profit, as they can be, at least half an acre of best varieties will be put down to ensure an abundance of table grapes, easily made wines, and raisins for the homestead. All the berries, although not so completely at home as those grown in cooler England or in Tasmania, will yet give a good return. Fruits of all descriptions may be dried without trouble, and jams and preserves give full opportunity to the housewife. Poultry flourish exceedingly: the world's records in egg-laying are held by our Australian fanciers. There is an overflow of milk and cream and butter. Pigs will add to profits, and two or three settlers may combine and kill their own sheep for a meat supply.

Then there is the social side. The irrigated areas in Australia are almost the only parts of the country where the numbers of people engaged to the square mile approach to rural Europe. The irrigationist and his family know none of the isolation of the pioneers of the bush. Although they may be from one hundred to three hundred miles of the seaboard, they will have a railway town within a few miles of their home. And these towns are of a superior class. They will contain from a few hundred to a few thousand people, and are the centre of an attractive social life. Like the individual irrigation holding, they have an abundant supply of water at their doors, and special efforts are being made by the Government to encourage the citizens to make their centres of population beautiful to look upon. They are being laid out in spacious streets planted on either side with a rich variety of shade trees, and broken by wide garden squares. People familiar with the wonderful beauty spots created by the irrigationists in the midst of the desert of Southern California, which have become the fashionable winter resorts of the millionaires of the Eastern American States, may confidently look within a few years to find places of equal attraction in irrigated Australia.

Then the small holdings mean many neighbours. When our selectors each occupied from 640 to several thousand acres apiece, every little bush homestead was a lonely landmark. One's nearest neighbour was more or less a stranger, and his appearance an event in the week. The irrigationist has a dozen neighbours within half a mile of him. This naturally means that, apart from the railway townships, there are many facilities provided for social intercourse on a public basis. School-houses, churches, small public halls for dances and concerts, tennis courts, golf links, and other recreation grounds are dotted all through the watered settlements. There is also a considerable economic gain in this very close form of settlement. It makes co-operative practices a simple matter, and, better still, it tends to level up all the work

of the holdings to a high standard. No class of Australian farmer is marked by excessive exclusiveness. A generous disposition prevails to assist the stranger, and this makes it easy for the inexperienced man who is ready to learn to avoid expensive mistakes at the outset, and rapidly to bring his practices abreast of those of his expert neighbour. The freemasonry which marks pioneering in all new countries is in Australia very strongly developed. The man you meet at your boundary fences is almost too willing to tell you the secrets of his success, and although this may sometimes be a little unwelcome to independent spirits it has no small financial value.

When the irrigation colony, extending perhaps over 20,000 acres, has been a few years in operation, it presents a picture of distinctive rural charm. The prolific growth which comes so easily suggests wealth and happy lives. Already we have advanced far enough, as I have said, in a few of these settlements to be able to dream of Australian Lombardies and a succession of wide gardens equal to those which have made Southern California the delight of travellers of all nationalities. And when this appearance of well-being is associated with high money returns, the Arcadia is complete.

CHAPTER XI.

THE PASTORALIST.—I.

THE story of the Australian pastoralist is, to a remarkable extent, the story of Australia. It is the story of the explorer and the pioneer, the story of the shepherd who chanced on to the first gold and started the mining industry. It tells of all the rough, free life of the half-century which followed on the first settlement, of the hazardous overlanding, of the ringbarking which killed the millions of acres of eucalyptus greenwood, and turned the land to grey; down its pages gallop the great red and yellow coaches of Cobb & Co.; read on, and you are confronted with the bushrangers who have been the delight and terror of the schoolboys of the world. It introduces you to great sheds of rough-mannered, clean-thoughted shearers, to widely scattered shepherds and boundary riders, to drovers whose track winds out unbrokenly across a whole continent; it ushers you into sumptuous homes on the inland, where there is the luxury and convenience of a London mansion; it leads you to the lonely huts of the out-stations, where the shy children start and scurry at your approach, even as rabbits; it takes you out and on over rich coast lands and ranges, across bracing tablelands, up and down mountains, which have their tops always in snow; it draws you out across plains which do not end until a land nearly as large as Europe has been traversed.

Follow the pastoral industry through, and you have Australia before you. Of course, there is much else besides this grazing of sheep and cattle. There are the mines, and there is all the agriculture of which a favoured

continent is capable. But if you trace the pastoralist's story closely you will miss few of Australia's assets. For the squatter was first. Australia was a vast squattage before she became a digger for gold or a grower of wheat. The farmer increases to-day by the cutting up of the lands which the squatter for a century has stocked and sweetened and improved; the hundreds of towns which are rising all over the settled parts of the Commonwealth are all, or nearly all, situated on country first harnessed and broken to service by the grower of wool and the raiser of beef. More, Australia's individualism comes chiefly from the wide inland held by the pastoralist. Few of our poets have sought inspiration near the coast; it has been the atmosphere of the sheep and cattle stations which has given them their theme. Their song is sweetest to Australian ears when it tells of the free lives of the men who for a hundred years have grazed their sheep and cattle out where the homesteads are few and the fences wide apart.

Knock about pastoral Australia, and you are impressed by the seeming lighthearted carelessness of those who have built up the industry. You travel along and think them a happy-go-lucky breed, laughing their way through life, taking the good with the evil with a great indifference. But you are wrong. This seeming carelessness is the mask of the Australian inlander. No class in the Commonwealth is more engrossed in its work, nor has any an equal record for the successful use of brains and industry. Had he been the laziest and least progressive of beings, the Australian pastoralist could not have failed to win great returns. For his endowment of territory was unique. But to his credit it can be said that he has made good use of his grand opportunities.

Australia carries more than ninety million sheep, twelve million cattle, and over two million horses. She exports wool annually to the value of almost £30,000,000; the value of all her pastoral production is about £50,000,000. Australia's wool has no rival for quality in the world,

and the flocks of the Commonwealth outnumber those of any other country. All wool-growing countries now bid for Australian sheep in their desire to raise their standard, and the keenness of the competition is shown when bids for single rams frequently rise as high as a thousand and even fifteen hundred guineas.

This great industry is little more than a century old. It was in 1788 that Governor Phillip and his company landed on the spot where Sydney now stands, and began Australia's "farm" on what has not inappropriately become the beautiful botanical gardens of Sydney. His farm animals were few and inferior, and as he and his fellow-officers liberated twenty-nine indifferent ewes and rams, they had no dreams of establishing the greatest and richest flock any country has ever known.

Round about Sydney the country is little adapted for agriculture or grazing. Nature intended this rugged sandstone country, with its devious waterway and its growth of bush and flower, for a city and a port. And so for a while slow progress was made. The reports sent to England were discouraging. The soil was poor and difficult to work, the grasses were hard and scanty. But that was only the beginning. Soon men were pushing out beyond the wilderness of wildflowers which delighted the early naturalists. Up and down and out and out until the imagination of the explorer was fired. Expeditions were equipped; in a few years the work was done, and Australia rolled endlessly as a pastoral land inviting the pioneer to come with his flocks and take of its riches. Meanwhile, a couple of officers had introduced a few wool sheep from South Africa and supplemented the scanty flock at Port Jackson. At the end of the eighteenth century the settlement had a flock of a thousand head, which are described as having been light of body, long of leg, and covered with fleeces more like hair than the merino wool of to-day.

But the genius the Britisher has for the improvement of livestock was now brought to bear. The real father of

MERINO RAMS.—"WRINKLIES."

THE SHEARERS.

Australia's wool industry took the field in the person of Captain Macarthur, an officer attached to the Botany Bay station. This Macarthur was a remarkable man, and was famous for his quarrels with some of the early vice-regal authorities. But that was incidental to the great work he did for the young settlement when he came to England early in the last century, and purchased a few pure merino sheep from a stud built on Spanish blood by King George III. at Kew, and dispersed because unsuitable to England's moist pastures. Macarthur went back with his wool-growers, put them on to his estate at Camden, some forty miles from Sydney, and made a special study of his hobby. From that day to this the industry has flourished exceedingly. It has multiplied and improved its sheep and their fleeces, and extended and improved the country over which they grazed. By 1850, the sheep of Australia numbered 15,993,954; by 1870, 41,593,612; by 1900, 70,603,000; and in 1913 the total is about 93,000,000.

It has, however, been no mere multiplication of animals and conquest of country. The Australian merino breeder is a scientist of a high order, whose achievement has no rival as an example on a great scale of what changes can be wrought in livestock by selection and cross-breeding. Space, will permit of only brief reference to this work, but its significance will easily be grasped. Long after Macarthur began his breeding, the average weight of the fleece of Australian sheep was 4lb.; to-day, it is above 8lb. That gives a gain of 4lb. a sheep on a flock of 93,000,000, or a total annual gain of 372,000,000lb. of wool worth from 8*d.* to 1*s.* per lb. But that is only a beginning of the triumph of these Australian Britishers who went into the fascinating study of the merino. For not only has the weight of the fleece been increased; the quality of the wool has been improved out of sight in the same period. And then take the sheep themselves. The Australian merino is now probably half as heavy again as it was less than a century ago, and consequently worth half as much again to the butcher.

There is no more absorbing subject than this juggling with the shape and weight and covering of the sheep. There are hundreds of experts in Australia who give their whole lives to it. They start as boys and learn wool classing, and pass on to a study of the principles of breeding. There is something in the work which makes a man its own, and excludes all else from his mind. He talks merino, eats merino, dreams merino. The wondering, placid expression of the sheep seems to grow into his eyes. The pastoralist imported from the flocks of all the world. He enlarged his sheep and improved the quality of its wool. Then he set out to increase the area of its skin, in the knowledge that the larger the skin, the heavier the fleece. He pursued this course until there are millions of sheep in Australia whose strangely folded covering has earned them the name of "wrinklies" and "concertinas." He bred coarse wools and fine wools, just as he bred "wrinklies" and "plain-bodied." In short he mixed his sheep as a chemist mixes his materials, and with the same easy certainty of result.

So much for the sheep. But that was only one side of the pastoralist's industry and triumph. His handling of his country was no less successful. Just as he has made two silken strands of wool grow where before there grew but one hairy strand, so he has increased and improved his grasses. By ring-barking and stocking, he has steadily improved the pastures. Each decade has found the grasses thicker and more nutritious, and the profits of the soil consequently higher; and so the pastoralist to-day knows that not only are the returns of wool and mutton from each sheep very much higher than they were half a century ago, but that each hundred sheep occupy only a small portion of the land then necessary for their support. The sheep have become larger and more numerous, the fleeces double in weight and infinitely better in quality.

The pastoral industry has its perils. It knows bad years. Once in a way drought hits it hard. On the whole, however, it is an industry of splendid prosperity. If you

take it year by year you will find an occasional season of standstill, or even loss. But if you take it in decades it leaves you in no doubt as to its lucrativeness. This table tells eloquently of its advance:—

Period.	Horses.	Cattle.	Sheep.
1800	203	1,044	6,124
1850	159,951	1,894,834	15,993 954
1880	1,068,402	7,527,142	62,186,702
1900	1,609,654	8.640,225	70,602,995
1911	2,280,000	12,000,000	93,000,000

And each decade the industry becomes better insured. As the holdings become smaller men give more and more attention to water and fodder conservation, and are beginning to carry over from the general years of surplus to the exceptional years of scarcity. The State is building additional railways and embarking upon great national irrigation schemes. Wool advances in price; Europe opens its markets to Australian beef and mutton and lamb. The pastoral industry must inevitably give larger and more regular returns.

Penniless immigrants still dream of becoming squatters just as they do of finding gold mines. The chances are about equal in either direction. It is true that some of our squatters began as wage earners. There died in New South Wales a few months ago a squatter whose will was proved at £250,000, and who began life as a coach driver. James Kidman, the "Cattle King," who owns more cattle than any other man in the world, also drove coaches before he became a pastoralist. But these are rare exceptions. The majority of the pastoralists are descended from men who took some capital to Australia in the early days. Fifty years ago a few thousand pounds would enable a man to take up many square miles of good country, and to purchase stock enough to lay the foundations of big flocks and herds. But those days are past.

Considerable fortune is now required to establish a pastoral station, and a man with sufficient means for the purpose is probably as well off in England as in the Commonwealth. I do not mean that the pastoral industry would not give a handsome return on a large outlay of money. Squatters' profits are, on the average, very high, and the life is pleasant. But a young man with, say, £50,000 or £100,000 generally looks for a good deal of recreation, sport, and social life, and for this he will probably decide that London is a better base than an Australian squattage.

It is not easy at the present time to write definitely about the pastoral industry. For nearly a century the squatters produced the bulk of Australia's wealth; but the second century is to belong not to the squatter but to the farmer and the industrialist. Already the returns from all branches of agriculture exceed the returns from wool and meat. Everywhere the tendency is to drive the squatter off all land which is suitable for closer settlement, in other words, which has a rainfall above, say, sixteen or eighteen inches. At the outset, as we have already seen, when there was a very small market for farmers' produce, and few cultivators to work the soil, the squatters were granted enormous areas of the best rainfall country at nominal prices. As the population increased, and the export market became assured, the aim of every State Government was to win back these lands for subdivision into small holdings. We now see the big holders everywhere retreating from the country within a distance of roughly up to 150 miles from the seaboard. Estate after estate which had become famous for the peerless quality of its merino wool, or its breeds of horses or beef cattle, is being cut up into little farms; and spacious and sometimes even elegant and sumptuously appointed homesteads, from which the owner presided over a domain of 50,000 to 100,000 acres, stand as white elephants upon farms of a few hundred acres. Some of the most favoured of the big stations still remain, but all of them are inevitably doomed. In 1913 the wheat sown

in New South Wales covered 3,700,000 acres; in 1912, which was a record wheat year in the State, the area was 2,900,000. Those 800,000 acres, now sown for the first time in wheat, hitherto carried sheep and cattle.

To discover the squatter who can be considered at all permanent you have to travel out on to the broad, lightly-timbered inland plains, where the rainfall is too low to give returns to the industry of the farmer. Happily, there is a great wealth of this class of country. Pastures are not so regular as they are nearer the coast, but with the increasing attention which is being given to the conservation of water and feed supplies, and with the building of many additional light lines of railway, the industry is well assured of big profits.

THE PASTORALIST.—II.

In a year of good rainfall, the visitor to a large sheep-station will find an interminable, lightly timbered plain waving high with a great diversity of grasses and herbage. The feed will sometimes completely cover the sheep, and as the flock will only average one to every 3 or 5 acres, the stranger will exclaim at the apparent waste of pastures. But his host, the squatter, will smile at his enthusiasm. "It is not always like this," he will say. "If you come back in a couple of years you might find the place a dust-storm." Here you have the justification for describing pastoral Australia as fickle. The squatter who attempts to carry enough stock to eat all the grasses which grow in the fat seasons will invariably find himself in a mess in the lean years which experience has taught us will follow. Probably, too, if the great crop of grasses were consistently eaten bare, instead of the bulk of them being allowed to return to the soil, the country might soon show signs of exhaustion. Under proper management, this inland region gives high average yields over both the good and the bad seasons.

In the pastoral country towards the south of Australia, the best rains usually fall between April and October, but

as you travel north you come more and more within the influence of the monsoonal downpours which come earlier in the year. Taking a typical station in New South Wales, and assuming that good rains have fallen in March or April, we should find the lambs being born about May. It is uncommon for the merino ewe to have more than one lamb, and 80 or 90 per cent. of lambs is counted high for the station flock. The sheep, which on a property of, say, 100,000 to 200,000 acres, will be found in paddocks of from 4000 to 8000 acres in expanse, are, as compared with the sheep in England, extremely shy and nervous. Except in very dry seasons they are seldom disturbed more than four or five times in a year. The boundary rider, who with his wife and family has his little home in one of the out-paddocks some miles from the homestead, keeps an eye upon them, but except in the lambing season and at times when the tanks are low and there is danger of some of them getting stuck in the mud, it is not necessary for him to inspect them in any detail. During the winter the flock will be mustered for the marking of the lambs, and again in the spring for the weaning and shearing. All this work, even on a big station, is carried out by a handful of employees. The country being nearly always level or only slightly undulating and but lightly timbered, presents no trouble to the yarding and handling of the sheep. If the timber has ever been heavy, it will have been ringbarked many years before, the only exception in the general destruction having been in favour of the various edible bushes and small trees which are invaluable for the stock in time of drought, and here and there a clump or belt of larger trees preserved as shelter for the flocks during the hottest summer months.

Great labour-savers on the sheep-station are the little barb and kelpie dogs. These wonderful animals, which have been specially evolved to stand the hot climate, have almost completely taken the place of the heavier collie and other British breeds with which the squatters started. The latter were excellent in the cool winter months, but they

knocked up too quickly to be of full service in the summer-time. The little kelpie, which is not much heavier than a large fox terrier, and is one of the most symmetrical and intelligent of all canine breeds, is a marvel of endurance. There is no prettier sight than to see these little dogs in charge of a flock of wild, speedy merino wethers. They are quite silent, and work very wide so as not to crowd and break the shy bush sheep. At fancy work, such as putting a group of three or four wethers through hurdles, or taking a half-grown chicken from a clutch and, without touching it, "yarding" it into a jam tin or a hat, they are incomparable. They will work all day through the blazing heat and suffocating dust, never barking, and taking their orders from morning to night from the hand signals of their master. In the pastoral country they save the employment of thousands of horsemen and men on foot.

The shearing season, of course, provides the great work of the year, but operations in the shed have been so often described to English readers that I do not propose to give much space to the subject. Sufficient to say that the sheep are now nearly all shorn by machines similar in principle to barbers', or horse clippers, except that they are driven by steam, oil, or electricity. The shearers are a highly skilled, strongly organised class, who, by working down from Queensland to Victoria and South Australia as the season advances, contrive to keep in remunerative employment for several months in the year. They are invariably paid by contract, the present rate for ordinary flock sheep being 24*s.* a hundred, with special prices for rams and other difficult classes. A good team of shearers on a large flock will comfortably average a hundred sheep per man per day, so that good wages are earned. Indeed, the pastoral industry, just as it has pioneered millions of acres of good rainfall country for the farmers, has also given thousands of our settlers the opportunity of earning, during a few shearing seasons, the money necessary for a start on small holdings. Extraordinary records are put up by the fastest shearers. The boss-man in the shed is

known as the "ringer," and there is the keenest competition for the supremacy first of individual sheds, then for one State, and finally for the whole of the Commonwealth. Mr. Edward Sorensen, in his excellent book "Life in the Australian Backblocks," gives the following particulars of shearing feats:—

"The record for hand-shearing is held by Jack Howe, who shore 327 ewes in 7 hours 20 minutes at Alice Downs (Queensland) in October, 1892. His tallies for the last eleven days at the shed were 149, 246, 131, 249, 257, 258, 262, 267, 321, and 190 lambs and 30 wethers. On July 16, 1904, he shore 337 sheep in 8 hours with the machine.

"The following unique records belong to an earlier date: At Belalie, on the Warrego, in 1884, Sid Ross shore 9 lambs in 9 minutes, and at Evesham, in 1886, Jimmy Fisher shore 50 lambs in one run before breakfast (about 75 minutes). At Charlotte Plains, Warrego River, in 1885, Alex. Miller shore 4362 sheep in three weeks and three days, an average of 203 per day throughout the shed. 'Long' Maloney shore 22,000 in one season in South Australia, Victoria, and New South Wales.

"In 1876 Angus M'Innes shore against Jack Gunn, a Parratoo, South Australia, for £50, when the former shore 180 sandback wethers in one day, and, but for a timely interference, would have exterminated two boundary riders because they had no more sheep in.

"At Fowler's Bay, in 1874, the lengthy Maloney shore 11 big wethers in 11 minutes, using a pair of Ward and Payne's 38's. At a shed on the Paroo, in 1884, seven—namely, Allan M'Callam, Bamphil (the 'Warbler'), Jack Lynch, Jimmy Donaldson ('Maorilander'), 'Warrigal Jack,' M'Donald (the 'Barrier Ringer'), 'Long Bob,' Hobbs, and Jack Reid (the 'Victorian')—shore 1540 sheep in one day, an average of 220 per man. At Parelli, in 1885, another Jack M'Donald, who weighed only 6st. 9lb., shore 187 full-fleeced wethers in 7½ hours.

"A shearer who used the tongs all over the Commonwealth during the squabble between pastoralists and

shearers in 1902, gave the following particulars of his earnings: In 1899 he shore 23,538 sheep, receiving £235 7*s.* 6*d.*; in 1900, 22,976 for £229 15*s.* 2½*d.*; in 1901, 23,142 for £231 9*s.* 5*d.*; and during the first half of 1902 he shore 10,379, his cheque being £103 15*s.* 10*d.*

In addition to the shearers there is a team of rouseabouts who are paid by the week, and who take up the fleeces and carry them to the expert classers. After sorting, the fleeces are pressed into bales and started on the road journey to the railway station. Until a few years ago the bulk of the wool was sold in London, but now most of it is disposed of by auction in the various State capitals. Buyers go to Australia each spring from all of the manufacturing countries of the world. It is interesting to notice that within the past ten or fifteen years, foreign countries have taken relatively much more of Australia's wool than previously. There has been no falling off in the quantity purchased by Great Britain, but she has not continued as she used to do to absorb the increased output. It is pleasing to be able to record that a healthy beginning in woollen manufacturing is now being made in the Commonwealth. A number of factories have been established, and although so far only about two per cent. of the fleeces are locally treated, there is every promise of increased activity at the local mills. The Government encourages home manufacture by the imposition of a heavy duty upon manufactured woollen goods, and by bounties.

The aim of the squatter is to complete his shearing before the great annual crop of grass seeds ripen and fall, otherwise they get into the fleeces, do much damage to the quality of the wool, and are often very troublesome to the sheep. Immediately after the shearing there is usually a fairly heavy sale of sheep "off shears." Part of the natural increase are sold as lambs, but the pastoralist holds a sufficient number of the young ewes to keep his breeding flock up to the average carrying capacity of his run, and sells off his aged breeders from time to time.

There is little or no waste by death. On the price of wool over recent years, a flock of 50,000 sheep will roughly give a wool return of 5*s*. 6*d*. a head. Add to this sales of fat and store stock, and the yield per head in fair seasons reaches from 8*s*. to 10*s*.

In the normal season the summer passes pleasantly and easily. The pastures dry off and the grass seeds fall and provide for several months what is really a corn diet. Very little feed is to be seen, but provided the water supply is good, animals improve their condition right through the dry weather. There is, however, quite a different story to tell if there is a failure in the rainfall, and no rural situation can awaken more anxiety than that of the large sheep station which is affected with a serious drought. Certainly much is being done in the way of insurance by improved water supplies, and here and there by the cutting and conservation of the grasses when they are high and green, and in the building of pastoral railways so as to make the shifting of starving sheep an easier task than by road droving. But all of these measures are unsufficient to cope against the really long dry spell. When the drought comes in earnest, feed supplies are preyed upon by the rabbit pest, which on many stations is more or less prevalent. Wire netting and a constant campaign of destruction keep the rabbits under some sort of control. But in a succession of years of plentiful rains and an overgrowth of grasses, the pest rapidly increases and its maintenance is not felt, and, indeed, the long grasses conceal its multiplying numbers. Not until the drought has arrived is the squatter fully conscious that the rabbits upon his land are probably eating more than his flocks. When the shortage of rain is widespread every squatter is a seller of sheep, and it becomes almost impossible to dispose of them. Nor is it an easy matter to remove them to zones where the season is more favourable. The rush for this country is general, and very often the stock routes leading to it are so short of grasses that they will not feed the sheep during the journey. To transport fifty thousand

sheep by rail under the most favourable circumstances is next to impossible. Then there is the chance every day that rain will come, and the squatter is tempted to go on hoping and praying for the moisture until his animals are too weak for droving over the eaten out routes.

This is the black side to the life of the pastoralist. But as the drought is a constant factor in the industry it must not be glossed over. Heavy losses are sometimes made, as, for instance, in the terrible drought which culminated in 1902, when the sheep of the Commonwealth were reduced in a few years by more than one half. That, however, was an altogether exceptional drought. There had been nothing like it in the previous fifty years. It was unique in that it settled down over the great bulk of the continent, and so made it next to impossible to obtain relief even at the expense of shifting the flocks. The average drought lasts only a few months, and although it causes landowners the deepest anxiety, it seldom leads to heavy losses. A lambing may be spoilt and a year's increase forfeited. It must be borne in mind, however, that without these droughts the Australian pastoral industry would probably be the most remunerative in the world, while even with the droughts it has few superiors at money spinning. Contrast, for instance, our great pastoral inland with North-West Canada. Our country feeds tens of millions of sheep and millions of large stock, while North-West Canada is practically impossible for the grazier. When half as much attention is given to provide against the occasional drought in Australia as is given to provide against every winter's excessive cold in such countries as Canada, very little indeed will be heard about the losses of livestock in the Commonwealth.

I have said that the large pastoralist is probably permanent on all our interior lands which have a rainfall below fifteen or sixteen inches. But that is scarcely correct. When the smallholder has occupied all the country above the sixteen inch rainfall, he will inevitably trespass in larger and larger numbers upon the drier region further inland. He may not take with him the

plough and the cream separator, but he will go further and still further afield as a grazing farmer, and make a handsome living on a holding of a few thousand acres of light rainfall soils. And as the small pastoral holder increases and the great squatting princes diminish, the security against drought will become more pronounced. A station of half a million acres held by one man might lose the whole of its livestock in a severe drought, whereas if the same area were in the possession of a hundred small graziers, they would probably pull through successfully. Smaller holdings on the pastoral country mean better water provision, and make it a far easier matter to cut and store pastures for use in the seasons of shortage.

It is an interesting fact that, given either feed or water, sheep will survive in the most puzzling manner. I have known a flock of merinos on good dry grasses to keep in condition for some months at the height of summer without a drop of water. The only explanation could be that they got sufficient moisture from the summer dews to satisfy their wants. On the other hand, sheep which have a good supply of fresh water will live for weeks after all the grasses and grass seeds, so far as one can see, have entirely disappeared. Happily Providence has placed enormous artesian supplies under great areas of the Australian surface on which the rainfall is most precarious. The artesian area is estimated at nearly 900,000 square miles. There are now 1650 bores flowing, and each year the number is being increased. They range in depth to upwards of 5000 feet, and the flow from a single bore ranges as high as 4,500,000 gallons per day. The water is not uniform in quality; many of the bores are highly charged with salts; but nearly all of them furnish excellent drinking water for livestock. The water, which frequently has sufficient pressure to rise to a height of several feet above the level of the ground, is carried in drains for very long distances. There is no more refreshing sight than to come across one of these clear-running little drains in the height of summer

perhaps twenty miles from a bore. The cost of sinking an artesian well averages about 20*s.* per lineal foot. So far, the use of this water for irrigation practices is scarcely out of its experimental stage. It has been clearly shown, however, on some of the New South Wales Government farms, and on a number of the inland stations, that there are big possibilities in this direction. Some of the bore water will perhaps prove too highly charged with salts to permit of its successful application to the soil. As a rule the squatters declare irrigation an impossibility. I remember driving over a little canal carrying bore water, both sides of which were lined to a width of a couple of feet with thickly growing couch and other grasses. The surrounding country was hot and dry. The squatter agreed that the grasses flourished because of the water, but when I suggested irrigation, he angrily denounced the idea as impracticable. The truth is that the great bulk of the country under which artesian water has been located is held by the pastoralists on very easy terms of leasehold, or else has been purchased outright at nominal figures. If it is ever established that bores can be used for irrigation, the value of the leasehold land will at once be re-assessed, while there would certainly be a clamour from small holding interests for the resumption of the large freehold properties, which by the adoption of irrigation would become suitable for closer settlement. It has always been the policy of the squatter resolutely to deny the suitability of the vast areas of country which he holds for use by the small farmer. Small holdings mean sooner or later the displacement of the squatting monopolist. Nevertheless, many years must elapse before there will be any wholesale subdivision of the large pastoral holdings on the light rainfall country into grazing farm areas. The aim of the Governments of all the States is to settle the area of good rainfall country before extending further inland.

Many pastoralists combine horse and cattle raising with the merino sheep industry. Australia contains about twelve million cattle and about two-and-a-quarter million horses.

The bulk of the horses are now, perhaps, owned by the small farming holders, and an increasing number of the cattle are made up of dairy herds. Nearly all our farmers do some horse breeding, and large numbers of the famous army walers are bred upon small holdings. The high prices ruling for horses in recent years has made the industry very profitable. The South African and Russo-Japanese wars took many thousands of army types from Australia, and greatly improved the markets for all light breeds. At about the same time the rapid advance of the farming movement created a large and increasing demand for the heavy farm breeds. Horses of a good type were probably quite twice as dear in Australia at the end of 1912 as they were twenty years before, and, with settlement advancing so quickly, there is no likelihood that the prices will ease. This position, while it increases the expenses of the man who is commencing on the land, adds considerably to his income when he is established.

The large pastoral properties which are devoted almost solely to cattle and horse breeding are located chiefly in the tropical and sub-tropical north, where the regular monsoonal rains and the great annual crop of grasses make the conditions very favourable for large stock. The beef cattle most favoured are the Shorthorns, although Herefords are freely distributed in all of the States. The Angus breeds, also, have many friends, while herds of Red Devon are not uncommon. A general practice is to breed cattle upon the wide, well-grassed area in North Queensland, the Northern Territory, and the North-West, and to drove them by long road journeys to the south. Naturally, they lose condition on the trip, which frequently covers from one thousand to two thousand miles, and occupies from six months to two years. They are, therefore, sold as stores and re-fattened by southern graziers before going to market. There are, however, a few slaughtering establishments and freezing works on the North Queensland coast, and it appears certain that these will be multiplied in the near future, not only there, but also in the Northern Territory and on the

BY A BILLABONG.

NEAR THE HOMESTEAD.

north-west seaboard of Western Australia. These freezing works would remove the necessity of the long and sometimes hazardous journey overland, and greatly add to the profits of northern graziers.

So far, practically all livestock raising and fattening in Australia is done on the native pastures. There is no hand-feeding except in the case of stud and working animals. As the holdings become smaller and rural practices advance, this complete dependence upon Providence will, no doubt, be succeeded by a more advanced system. Contrary to the belief of the great pastoralists, as the big runs are cut up into small farms we shall have a great increase in the numbers of our livestock. The few herds and flocks of the squatter will be displaced by the many little herds and flocks of the farmers, and the aggregate number of hooves will be indefinitely multiplied. To appreciate the safety of this prophecy, one has but to remember that there are as many cattle in the United Kingdom as there are in the whole of Australia.

The work on an Australain cattle-station is very light indeed. Runs, amounting to millions of acres, and each carrying many thousand head of beef animals, are worked by a manager and half-a-dozen white stockmen, assisted by a small team of black boys. The natives are excellent rough-riders and capable of much useful work under the supervision of white men. Given fair seasons, which are pretty general in the cattle country, station hands are only partially engaged, except for brief periods in each year. If there is any fencing at all, the paddocks are extremely large, and the cattle are never disturbed except for branding, and for mustering prior to droving or sale. Where horses are bred in large numbers, the working conditions are very similar, and as a result of this you get the extremely shy horses, which sometimes develop into the famous Australian buck jumpers. Naturally a well-bred colt which has only been handled, and that very roughly for a few minutes, on the day that he was branded, is very wild and sensitive to touch when he is yarded as

a three-year-old to be "broken in." He presents quite a different problem to a similarly bred colt which has been hand-fed from his birth in England. But outlaws as many of these young bush horses are, they are in 999 cases out of 1000 easily over-mastered by the expert rough-riding horseman who takes them in hand. There are hundreds of our rough-riders who have never been thrown except by a horse falling with them. Occasionally, however, the back country produces an animal which cannot be ridden by the expert horseman.

Buck-jump riding in Australia is conducted on terms far fairer to the horse than it is in Western America. The cowboy is much more brutal in his methods and depends far more upon the construction of his saddle than the Australian. There are hundreds of Australian horsemen who can, with the rare exceptions I have mentioned, ride any outlaw brought before them in a plain English hunting saddle. Our horses are mastered with kindness and skill. There is no brute force applied. The man who builds himself into his saddle is laughed at as a duffer and a coward. It is bush etiquette to give your horse a chance. When the unrideable buck-jumper is produced he is a gold mine to his owner, who travels him about the country districts as a show. As a rule a number of less notorious buck-jumpers are added, so as to provide a couple of hours' entertainment. Rough canvas enclosures are erected; charge is made for admission; and if the star performer is a famous horse, there is always a bumper house. The event of the night is a wager of £50 to nothing that no-one in the audience can ride the crack horse in a plain English hunting saddle for three minutes. Every district boasts its horsemen who have never been thrown, and there is no lack of volunteers. Fifty pounds for three minutes appears good money, but nowhere in the world does time pass so slowly as on the back of a really talented buck-jumper. It is extremely rare for a man to stay up for more than a few seconds. A good horse will buck two or three times in a second, and it is unusual for him

to continue for more than twenty seconds. There is real genius in the great buck-jumper.

It is remarkable that these horses never become tame. They will go on bucking from the time they are broken in until they are white at the muzzle. Even if they surrender to one man they are ready to break out and buck violently on being mounted by a stranger. I knew a little black thoroughbred horse which was practically unrideable by anybody until he was aged. Various attempts were made to conquer him on the selection, and he was given in turn to all the professional horse-breakers within fifty miles around. Each one returned him a skeleton, and while he remained weak he could be ridden, but immediately he put on a little condition, and his spirits revived, he was as dangerous as ever. Finally his owner, a clever horseman, overcame him, and he was one of the most perfect of hacks. But even when he was an old horse he was unsafe with any stranger.

CHAPTER XII.

The Northern Territory.

The great region known as the Northern Territory demands far more attention than is possible in a limited section of this little book. The possibilities for the coloniser in this tropical and sub-tropical domain can only be indicated here. The Territory has an area of about half a million square miles. It faces full tropical seas in the north, and extends southwards to the heart of the continent. As its location will show, it embraces a marked diversity of soil and climatic qualities.

Along the northern seaboard, which is well indented with good natural harbours, the land is low lying, and presents all the characteristics of other countries situated in similar latitude and lacking substantial elevation above sea level. So far, this fringe is practically the only area of which the world possesses any knowledge. The great majority of the thousand people who make up the white population dwell either at the township of Port Darwin, or work on the mining areas within a short distance of the coast. Although pregnant with great productive capacity, this area, from the white settler's point of view, is the least attractive of all the Northern Territory. Much of it is swampy and malarial, and what we know of the lives of its people does not lead us to think that there will be any eagerness on the part of home seekers in the United Kingdom or southern parts of Australia to share their lot. Happily for the future of the country, it has its most indifferent goods in its shop window. As you travel south from the coast the conditions rapidly improve; the country

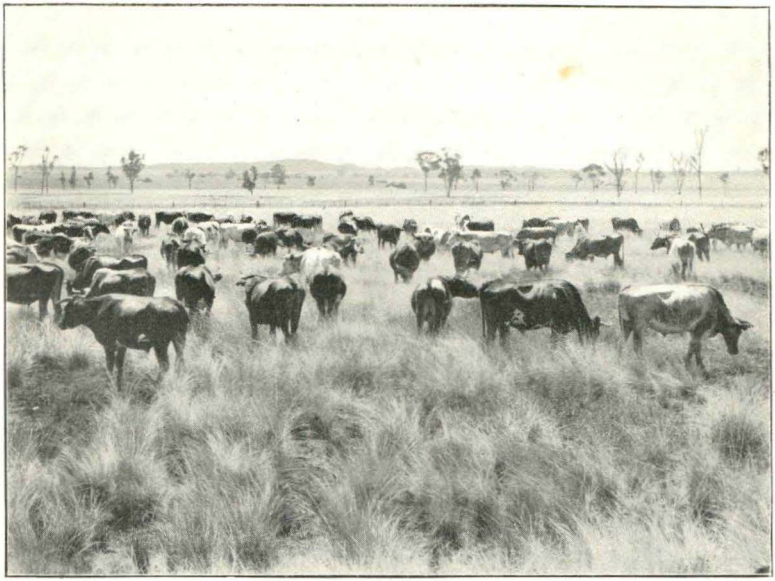
rises, the atmosphere contains less moisture and becomes more life-giving. The malaria strip is left behind, and there is discovered a magnificent tableland, rich in soils highly favoured by rainfall, and interspersed by the best system of rivers in the whole of the Commonwealth. Excluding altogether from the Territory the oppressive areas along the seaboard and what may be described as the desert areas towards the extreme south, there remains a huge tract of country holding out the best of inducements to settlers of many classes.

It might well be asked how such a country could have been so long neglected. But the explanation is quite simple. No part of Australia is as yet fully settled, nowhere is there anything approaching to congestion or real land hunger. Until a few years ago there was practically no agriculture in either Queensland or Western Australia, two States which are now drawing settlers in very large numbers, and giving them big rewards for their labour. The Territory has remained unpioneered until the last, simply because there has been a super-abundance of more accessible soils of equal richness elsewhere. The greatest natural wealth is valueless unless it is within reach of markets. Down to the present it has been impossible to sell anything produced in the Territory except livestock and wool. The pioneering of the region demands the expenditure of large sums of money; roads and railways must be constructed, shipping facilities provided, experiment farms established, and a hundred and one other things done, first to demonstrate the producing capacity of the land, and, secondly, to ensure that what is produced can find its way to market at a reasonable cost.

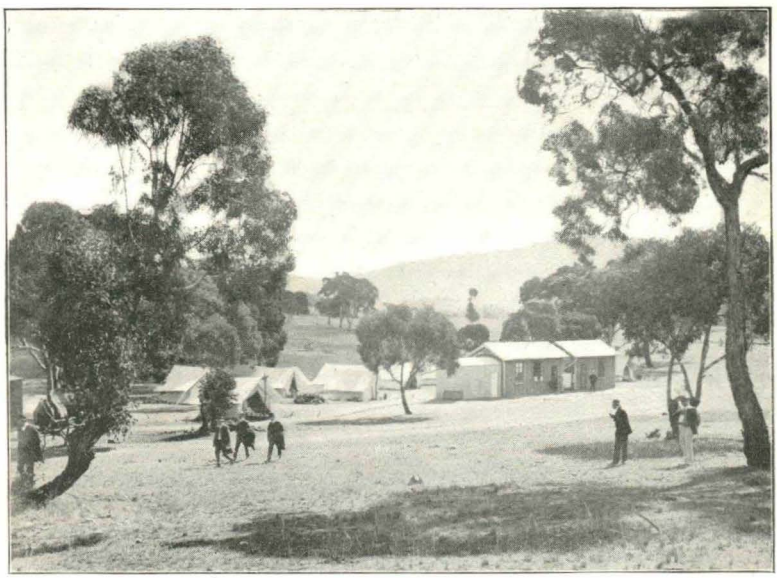
If it were not for the fact that the Northern Territory while it remains empty is a standing invitation to aggression from other nations which are overcrowded, it is doubtful whether even now a commencement would have been made with its colonisation. But Australia realises that if the North is to be held it must be peopled. For many years the territory was attached to the State of South

Australia, whose people made heroic efforts to finance and develop it up to a pitch at which it would become attractive to the small settler. South Australia, however, had its hands more than full with the development of its own resources. A few million pounds were expended before it was realised that the task was above the financial strength of the Government. Then the Commonwealth, rightly taking the view that the colonisation of the north was a national rather than a State affair, came to terms with South Australia and took the territory over. The transfer was scarcely complete before the Federal authorities were embarked upon a vigorous statesmanlike policy of development. A number of exploration parties were immediately despatched, and soon afterwards, as a result of these inquiries, experiment farms were established, an extension of the brief railway system resolved upon, and the first land made available for settlement. A large and efficient permanent staff was also appointed to carry out the administration and exploitation of the area.

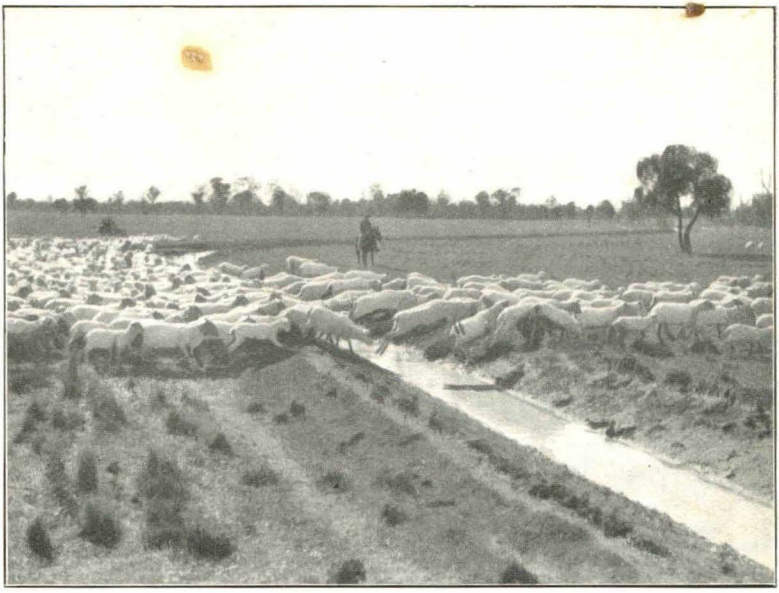
Cattle thrive in the Northern Territory as well as anywhere in the world; indeed, with the exception of a few flocks of sheep, cattle, and horse breeding has been the sole rural industry. Great principalities, containing as much as 20,000 square miles, have been held on leasehold from the Crown at nominal rates. For instance, a holding of 8000 square miles of rich good rainfall lands, well served by rivers, pays only a rental of £400; another of 5000 square miles £204; and another of 19,000 square miles £962. These individual stations carry as many as from 20,000 to 80,000 cattle, and the annual increase of calves to a single pastoralist has sometimes exceeded 20,000 in a year. The region has been used merely as a breeding ground; and owing to the lack of local freezing works and export accommodation the cattle have had to undergo a march of from 1000 to 3000 miles to southern parts of the continent. Good seasons have been chosen for this droving. Even then the mobs naturally lose their condition on the long journey, and



OVERLANDERS.



CANBERRA, THE FEDERAL CAPITAL SITE.



CROSSING WATER FLOWING FROM ARTESIAN BORE.

BEEF CATTLE ON COAST COUNTRY.

they are usually sold to southern pastoralists to be re-fattened.

Much has been written about the impossibility of tropical lands for white workers. It is true that in all, or nearly all, tropical lands the manual work is carried out by coolies. The world watches with much interest Australia's attempt to settle her tropical areas with white people, and at once it must be confessed that, if the attempt is successful, the opinion of the world will be upset. There is no precedent for tropical industries carried on by white labour. All along the tropics in America, Africa, and Asia, you find great industries which, although conducted by whites, are dependent upon the coloured man for their manual labour. This fact makes Australia's venture exceedingly difficult. It means that all tropical products are produced by cheap workers, and that the product of the expensive Australian white worker must compete against the product of the cheap alien. Possibly, by the imposition of heavy Customs duties or the payment of substantial bounties, the Commonwealth may build up white labour tropical industries for the supply of her own markets. But that she will ever be able to compete in the markets of the world with her tropical output is doubtful.

Nevertheless, the experiment is being made, and, if it is against general opinion, at least it has the sympathy of all European peoples who have had any experience of countries shared by white and coloured races. There is no need here to set out at length the reasons which make Australia so united, irrespective of party politics, upon her white Australian ideal. Those reasons are industrial, racial, and moral. The Australian people realise to the full the expense and difficulty of what they are endeavouring to achieve. But so resolute are they in their intention to keep their continent all-white and all-British that they are cheerfully paying the price and facing the obstacles. Opposed to them are the great capitalists who see the opportunity to exploit our tropical North with the cheap

coloured Asiatic. And the capitalist is insistently supported by the scientist and the historian.

Australians believe that a white Australia is practicable. Like the people of all young countries they are careless of precedent, and also they refuse to be coerced by the scientists. And there are some facts about the position of tropical Australia which justify their optimism. First, northern Australia is the only rich tropical region which is not already occupied by a big coloured population. It is the only tropical area upon which the white man has been given a fair chance to labour. In every part of the tropics where white labour has been attempted it has been immediately beaten by the competition of the cheaper coloured man. Certainly in the past there have been European colonising ventures into the tropics and these have failed. But their failure can in every case be clearly traced to causes which are either not present, or can be avoided in the northern areas of the Commonwealth.

Every traveller in Australia should visit the north and see what has already been done there by the white manual worker. He will find many thousands of men employed in the sugar plantations and at mining, and he will see these men leading decent, normal lives and raising families of healthy, promising children. Moreover, he will discover these white workers expressing the fullest confidence in their capacity to labour and thrive in the country of their adoption. The most ardent supporters of the White Australia policy were these white dwellers in the tropics. It has been clearly proved that if Australia is prepared to provide cheap passages, say at £5 or £6 each, she could obtain any number of white people, both from the United Kingdom and from the Continent of Europe, who would gladly make or attempt to make their homes in the region which lies north of the tropic of Capricorn. If we decided to develop this region with Asiatics, the full fares of the coolies would have to be paid; moreover, there would probably be a system under which it would be necessary to return them to their native country after a few years. It is beyond

dispute that it would cost as much to recruit an Asiatic as to recruit a white and even a British working man. True, the white man will demand a higher wage, but our experience shows that he will accomplish more work. Then he will bring his wife and children with him, or marry in Australia, and so provide labour for the future and permanent defence for the country which he will love as his home. The smallest consideration of the position must convince anybody that it will be time to talk about the coolie when a really vigorous white labour policy has proved a failure. It has not failed yet, nor has it had time or opportunity to succeed. The presence in the north of a horde of coolies, while it would mean wealth to a handful of employers, would not mean safety against possible aggression; indeed, these coolies would establish nothing more than colonies and outposts from the land of their origin, and in time of international trouble we should have the enemy already in force within our gates.

CHAPTER XIII.

PAPUA.

WITH characteristic British audacity the Australian people have commenced overseas colonisation at least a century before their pioneering was finished at home. The rich tropical possession of Papua was handed over to the Commonwealth Government in 1903, and a commencement was at once made with its development. Down to that time Papua, or, as it is better known, British New Guinea, had almost gone begging for ownership. There was a time when the whole of New Guinea could have been simply annexed to the British Crown. But in a moment of folly, Downing Street allowed Germany to acquire a large portion of the island, and it was only owing to a very vigorous protest on the part of the Queensland people that the whole area was not abandoned. Until the Commonwealth was entrusted with the future of the possession little or nothing had been done towards its colonisation and exploitation. And since that time, although the Federal Administration has proceeded with some vigour, the rate of progress has naturally been restricted by the simple fact that the Australian people already possess so much undeveloped territory in the six States. Enough has been done, however, to prove the great fertility and promise of Papua, and sufficient settlers, comprised both of private individuals and of powerful companies, have been attracted to demonstrate the producing capabilities of the country and to advertise its resources abroad.

It is hard to exaggerate the fecundity of this area. It embraces ninety thousand square miles of country, and is

therefore about the same size as the State of Victoria, and is probably destined to become the home of a population more dense than that which will be found in any part of the Commonwealth. It possesses magnificent expanses of lowlands and highlands covered with the richest of soils; it has a heavy and assured rainfall, and is cut up by a series of notable rivers. It has many deep forests of valuable timbers; it has been proved to be rich in minerals of various kinds, and prospecting indicates that it also contains big deposits of oil. Already 16,000 acres are under cultivation, of which 10,000 are growing coco-nuts and 3000 rubber, and each year the axe and the firestick are rapidly encroaching upon the forest. As in the Northern Territory, the Federal Government has decided against granting freehold. Very long leasehold, however, is obtainable on the easiest terms. The rent charged for land suited for tropical agriculture is nominal. For leases not exceeding thirty years the rent is five per cent. upon the unimproved value of the land for the whole term. When the lease exceeds thirty years, no rent is charged for the first ten. Moreover, the rentals are fixed so that they cannot exceed certain limits, which extend from 3*d.* to 9½*d.* an acre according to the length of the tenure. The Government is also giving much practical assistance to the settlers. State nurseries have been established for raising the young trees required by the planters, and each year the Government is increasing its activities in the direction of experiment and demonstration farms. No part of the Empire, perhaps, offers a brighter outlook to men whose inclinations lie towards rural life in the tropics.

Beyond the river flats, settlement has not yet proceeded. Exploration shows, however, that on the tablelands, which commence a little distance from the coast, there is ample scope for the cultivation of crops adapted to less tropical conditions than prevail on the lowlands. The presence of these tablelands, and of an extensive mountain system, means that the settlers on the lowlands will, as development proceeds and rail roads and other means of communication

are improved, be able to spend part of the season recuperating in a bracing atmosphere at a considerable height above sea level. Escape from the humid coast to the rarer air of the mountains will be accomplished in a few hours, just as it is already at Cairns, in Northern Queensland. At present, means of communication with the comparative civilisation of the mainland are indifferent, but each year they are being improved. As shipping increases between Australia and the East and the volume of Papuan exports grows, there will be a service of steamships running every few days between the Commonwealth and the Possession. The successful pioneer, however, is an enthusiastic worker, and his chief pleasure is in his labour. Isolation means very little to the man whose disposition leads him on to the tropical plantation.

Settlement in Papua differs from that on the mainland inasmuch as there is no prohibition against coloured labour. The island contains a large population of virile South Sea Islanders, who happily, so far at least, show no signs of degenerating and vanishing. They are distinguished for their physical strength, and although they are as yet by no means perfect as plantation workers, they give promise of improving with instruction and experience. They may be hired by the planters at rates fixed and enforced by the Government, which, it should be plainly stated, sets its face strongly against anything in the nature of actual or modified slavery. After careful consideration, the Commonwealth Government has agreed to the indentation of a number of Javanese, who will make it practicable to carry on the plantation work until the Papuans become more skilful than they are at present. Obviously, a wild race cannot be harnessed to modern industrial conditions within two or three seasons. Papuan colonisation has been favoured by very capable administration. Judge Murray, the Lieut.-Governor, who represents the Commonwealth Government, is distinguished for the manner in which he has fostered white colonisation, and at the same time held the balance fairly between the

new settlers, the natives, and the missionaries. The more active work is in the hands of Mr. Staniforth Smith, the Administrator. Mr. Smith has had an interesting career. For some time he represented Western Australia in the Federal Senate, and it was then his pleasure during the Parliamentary recesses to make cruises among the South Sea Islanders and the Malayan Peninsula, and to study the habits and industries of the people. He made special expeditions to Papua, and, resigning from Parliament, accepted his present position for the sheer love of the big work inevitable to successful colonisation. He has done invaluable service in exploration, in the establishment of experiment farms, in the encouragement of white settlers, and in the pacification of the natives, who might otherwise have permitted their natural resentment against the intruders to lead them into suicidal warfare. The man who settles in British New Guinea is assured of a sympathetic and generous deal from the Administration.

CHAPTER XIV.

LABOUR-SAVING MACHINERY.

RURAL practices in Australia are distinguished by the amount of labour-saving machinery which is employed. While the inventive genius of the British people at home has found a field in the improvement and revolution of industrial machinery, it has in Australia been turned into the betterment of rural appliances. The sheep-shearing machine, the stump-jump plough, the combined harvester, and the milking machine, all had their origin in the Commonwealth, and all were called into being by the shortage of labour.

The supply of farm hands has improved in the past twenty or thirty years. Prior to that time the farmer was always handicapped by the scarcity and high wages of his hired help. Harvest hands received from 8*s*. to 10*s*. a day, in addition to their board and lodgings, and were independent to a degree of arrogance. Add to this the fact that the export market had not been developed, and that in consequence every highly productive season was attended by low prices, and farming became by no means enticing. Then the wheat belt, although enormous in area, is not rich when compared with the wheat lands of Great Britain or the American prairie. It was necessary for the profitable expansion of our agriculture that cheap means of production should be devised. The first invention of importance was the stump-jump plough. As its name suggests, this was a contrivance which facilitated rough-and-ready methods of cultivation. The early settlers frequently possessed neither the means nor the labour to enable them to clear their timbered lands properly. It

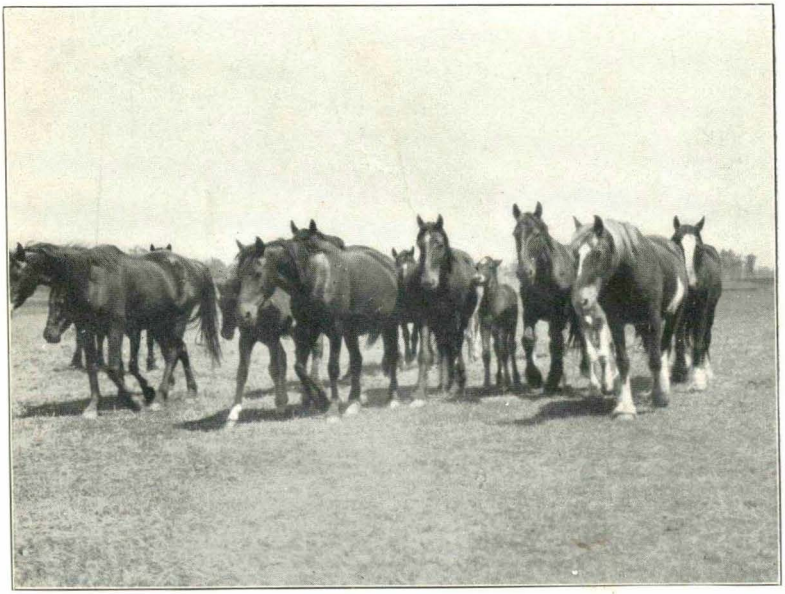
was customary to burn and grub out a quantity of the standing timber, and then to rush in a crop of wheat among the remaining dry trees, regardless of the many stumps which lurked an inch or two below the surface. When an ordinary plough strikes a stump, the share, if it be cast-iron, is generally broken, and if it be wrought-iron, with a steel tip, it becomes so firmly embedded in the timber that much time is lost before the team can be re-started. The stump-jump is so contrived that it rises automatically as a root is encountered, passes over the obstacle, and immediately dips again into the soil. Thousands of our early settlers used this implement. The careful farmers marked the stumps, and, when the cropping was over, or as soon afterwards as possible, had them cleaned out. The use of the stump-jumper is confined to the rough and early farming. Most of our cultivation is done by mouldboard and disc ploughs of from three to five furrows.

Of far more importance than the stump-jump plough was the invention of the combined harvester. The forerunners of this machine were the travelling stripper and the stationary winnower. The stripper was driven round the crop of wheat, and the heads of the corn gathered, and threshed, and carted, together with the chaff, to the winnower. One man and a team of horses worked the stripper, while two hands at least were necessary for the winnower. Neither of these machines is used to any extent in the United Kingdom or other relatively cold northern countries. Standing wheat can only be threshed in the paddock when the straw is very dry, so that the heads will easily release the grain they carry. The English standing crop of wheat is too tough for such treatment. So, too, in Canada. But in Australia the stripper proved far more speedy and economical than the use of the reaper and binder. Where the stripper is used, the straw minus the heads is allowed to stand and waste on the ground; sometimes it is rolled down and ploughed in as manure during the following season. But, as its presence in

the ground makes cultivation troublesome, it is more frequently burned. Straw, except in occasional drought seasons, is of little or no value to our settlers. Live-stock, well satisfied with the native grasses, will not deign to eat it, and as there is very little hand-feeding or stabling of animals, it is not needed for bedding. The modern harvester, as the name suggests, combines the functions of both the stripper and the winnower. The crop is gathered, threshed, winnowed, and bagged by the one machine as the team of horses travels. It is easily worked by one man, with a labourer in attendance to fetch and carry bags and oil, and to sew up the full bags as they are lowered at one of the corners of the paddock. One machine will comfortably harvest fifteen acres in a long summer's day. The sample of wheat thus produced is perfectly clean and fit at once for the operations of the miller. The harvester is still undergoing improvement, and its capacity steadily being increased. Thanks to this labour-saving contrivance and to the use of ploughs of many furrows one man is now able to do the cultivation and sowing of a crop of 250 acres in a season, and with a man and a boy to assist him has no trouble in harvesting it. This gives our cultivators an almost complete independence of the labour market. Ploughing costs one-fifth of what it did twenty years ago, and harvesting one-tenth.

Our average crop for all of the States over a number of years is only about ten and half bushels to the acre, against upwards of thirty bushels in the United Kingdom. It should be said, however, that Australian official statistics are scrupulously honest. This average is based upon the total crop sown. In one way this may seem quite fair, but the lowness of the yield is due to the fact that many of the settlers on the country of doubtful rainfall, whose chief occupation is sheep farming, throw in by careless methods a large crop of wheat on the off-chance of an exceptionally good season. If they get the rains they gamble for, the result is perhaps a sixteen or twenty bushel-crop. If the

WORKERS.



FARM MATRONS.

rains fail, the young wheat is fed off by the sheep. Again, very large numbers of our new selectors are entirely without agricultural experience. These men have an almost fatuous confidence in Providence. Their cultivation is the most slipshod, and consequently their average yield is extremely low. They can make a living along such lines only because they hold very large areas and combine sheep breeding with their cultivation. It may safely be laid down that the Australian wheat belt, when farmed on good average principles, will give a yield, year in and year out, of about fifteen bushels to the acre, while hundreds of our farmers keep their average up as high as twenty bushels. It may confidently be expected that, from this time forward, the yield for the whole Commonwealth will show a steady and sustained improvement.

Then there is the milking machine. In dairying, as in cultivation, the greatest obstacle to quicker development has been the shortage of labour. The young Australian, or indeed the recent arrival, prefers to work first for a squatter, then for a wheat-grower, and lastly for a dairy farmer. The preference is easily understood. The work for a squatter is almost entirely in connection with livestock. The station-hand spends most of his time in the saddle, and, with clever dogs to help him, passes the days very pleasantly. On the wheat farm there is also a good deal of time given to livestock, and, although the work is heavy and the hours are long during the ploughing and harvest seasons, there is a slack period in both the autumn and the spring. Men prefer work with teams to "messing about" the cow yard, where the day begins early and finishes late, and the work is unchanging the whole year through. This means that labour in a new country is always scarcest in the dairying districts. As time goes on, and the industry expands, it is found that the children of the cow-tenders naturally adopt the calling of their parents, and the labour difficulty is overcome. As we have seen, the dairy cows of Australia have increased from one to two millions

between 1902 and 1912. This gain would have been much larger had more milkers been available.

The milking machine was for many years laughed at by nearly all the dairy farmers. The first contrivances were naturally imperfect. The cows were not milked dry, and herds were liable to injury. That stage, however, is now quite past, and the Australian inventions are widely used in the Commonwealth and other parts of the world. The principle of the machine is, as might be expected, based very cleverly upon the action of the calf drawing milk from its mother. Rubber cups enclosed in metal are placed on the four teats of the cow, and they operate partly by suction and partly by pressure. The milk is drawn into a length of tubing and conveyed thence to a covered pail, which stands between two cows which are milked at the same time. One machine milks two animals, and one man can easily attend to two machines. Thus the value of the dairy-hand is increased fourfold. The cups and rubber tubing are suspended by a string from the roof of the milking shed, and so perfect has the contrivance been made that the cups are released automatically when no more milk is forthcoming. The attendant then strips the remnants from the cows, a matter which takes only a few seconds, and the operation is complete.

Possibly the best human milker may still be superior to the machine, but it can safely be said that the machine is far superior to the average human milker. Its action is so gentle that the cows stand without leg-ropes, and feed complacently while their milk is taken from them. Many owners of valuable stud herds have installed these machines in preference to trusting their animals to the old methods. The machines are easily driven by a small oil engine, which also serves on the farm for driving a circular saw, pumping water, and other purposes.

Invention has not been confined to the farm. The sheep-shearing machine has almost entirely displaced the hand shearer. Contrary to the general belief, shearing by

machinery is not necessarily quicker than shearing with the old steel clippers. The machine work, however, is more easily learned. The sheep are subjected to less cruelty by the men, who are all day dashing through their work at so much per hundred, and the animals are shorn more evenly and with less waste. The principle of the instrument is almost precisely that of the barber's clippers or horse clippers, and it is driven by steam, oil, or electricity. But even with these machines, shearing at the high rate of speed general in Australian sheds is anything but easy work; indeed, it is hard to find an occupation which so severely strains the muscles of the novice.

CHAPTER XV.

The Settler's Enemies.

The death-rate among Australia's population in recent years has been the lowest of any country in the world. In other words, you have a good chance of living a few minutes longer in the Commonwealth than in any other land. Similarly, the livestock on the farms and stations are conspicuous for their freedom from disease. The country presents a most indifferent outlook for the veterinary surgeon; indeed, except in a few of the dairying districts, and in the large centres of population, the "vet." is almost a stranger. You would not find one fully qualified animal doctor, on the average, in a hundred rural districts. It is the good fortune of nearly all our dumb animals which escape the butcher to die of natural causes in a toothless old age.

Occasionally we have local outbreaks of anthrax, and there is also a little trouble at times from foot rot, fluke, worm, "scab," and "black disease." But the mortality from all of these is very low. The country is entirely free from such deadly troubles as rinderpest, foot-and-mouth disease, and rabies. Perhaps the worst pest is the cattle tick, which has at times given trouble in northern Queensland. At present, however, it appears as though the tick has been successfully and permanently checked in the tropical north. We feared at one time that the pest would inevitably extend from the northern cattle stations into the dairy herds of the southern States. A close investigation, however, into the life and habits of this tick, both in Australia and in the United States of America, appears to have established beyond doubt

that it cannot live in cool latitudes, and that its ravages will always be confined to a zone of a given temperature and humidity. And, apparently, a proper system of innoculation and dipping can easily hold it in check, if not entirely eradicate it, upon any area.

We have a wide variety of plant-life pests. We have drawn the seed for our crops from all parts of the world, and have imported along with it such evils as the black or wild oat, Cape weed, hog weed, thistles, poppies, cockspur, prickly pear, water hyacinth, Bathurst burrs; indeed, travelling about farming districts in other lands, I have never discovered a weed with which I have not been familiar as a boy on Australian farms. When we think of the labours which the presence of these plant pests add to the farmer, we regret that in the early days of our colonisation it was not possible for our Customs authorities to refuse admission to anything but pure seed. This, of course, would have been impracticable. We have the pests, but it is good to be able to say that they cost little or no concern to the thorough-going agriculturist. In the early days of our farming, when the average settler had more land than he could handle, and the most slipshod methods were general, "dirty" crops were too frequently seen. We could be careless about the paddocks becoming "dirty" because we had plenty of "clean" land in reserve. The keeping of sheep upon all our wheat country, together with a proper system of fallow, makes it a simple matter to keep weeds of any description down to a level at which they are of little or no concern.

Our real pests in Australia are to be found in the imported rabbits, foxes, and sparrows. The rabbit, of course, is easily the greatest sinner. Foxes sometimes cost heavy losses among our lambs, and, in some districts, municipal councils and other authorities pay from 5*s.* to £1 as a bonus for their destruction. I know some squatters however, who are not at all antagonistic to foxes, arguing that the lambs they sometimes kill are amply compensated

for by the large numbers of rabbits which the foxes destroy for food supplies all the year round. Nowhere are foxes thick, and the general absence of cover on the sheep country makes it impossible for them to become a serious nuisance. Sparrows, which, like rabbits, multiply at an amazing rate in Australia, cause much damage to orchards and crops in a few of the southern and first settled districts. They are, however, easily wiped out by poisoning and trapping.

The danger to the Australian countryside from bush fires has been much exaggerated. Of course, in a country where a great growth of grass ripens like a wheat crop every summer, fires are easy to start, and, if not promptly checked, may cause enormous damage. With reasonable precautions, however, the danger is slight, and to the small settler it is infinitesimal. Just as the cutting up of the countryside into farms increases the safely of the holder against drought, so it ensures him against fire. Prevention is the golden rule. There is no estimating what will become of a fire on a day when a hot wind is blowing and the grasses are as inflammable almost as petrol. All wise settlers plough fire-breaks around and across their holdings, thus making it practically certain that a fire will be confined to a given area. Obviously this is an easier matter for the small than for the large holder. Again, in closely settled country, there are many well-worn roads, by which it is in nearly every instance an easy matter to check a fire on any day, however hot and windy.

A fire-break is made by ploughing a strip some yards in width during the winter months, and running harrows over it occasionally so as to keep it bare and dusty throughout the summer. Out on the big pastoral runs the ploughing of fire-breaks is not at all general. Owners regard the risk as small. While they cannot check a fire as easily as the small holders there is obviously less chance of an outbreak on their scantily peopled domains. A few general precautionary measures are enforced. Wax matches are prohibited by the station employees, and smoking

must be attended by the closest care. Swagmen often cause outbreaks owing to carelessness at their camp fires. But even these men, with no proprietary interest in the country, are, as a rule, very careful to guard against an outbreak. It is interesting to notice in the back country in summer time that every individual, from small children upwards, is keenly alert on the fire question.

Of course, when a fire does start, and is fanned by a strong wind, it is useless to attempt to fight it at close quarters. The general method is for the station employees to ride or drive on a considerale distance ahead of the advancing flames, and there to endeavour to make a break. Water carts built especially for speed are kept filled and ready. On some of the big runs a man is always on a specially constructed look-out, like the firemen in the towers over-watching a great city. Telephones are general on nearly all the improved stations. Immediately a fire is reported all hands are summoned, and the water carts rushed out as fast as the horses can gallop. Commencing, say, half a mile ahead of the line of advancing fire, water is sprinkled over a long line of the dry grasses, and immediately afterwards the grass is lighted to windward, or on the fire side of this water break. The result is that when the advancing flames arrive at the break it is often a few chains wide, and the "bush fire" quietly fizzles out. Great care is necessary for a few days because of sparks and lighted bark blowing to a considerable distance from the tops of dry trees which have become ignited. Fresh outbreaks occur sometimes days after the main fire has been checked. However, the danger from bush fires sounds much worse than it actually is. The average annual loss to property is very small, and, although sometimes livestock are destroyed and farmer's homes are demolished such happenings are extremely rare.

Lack of space in this little book prevents more than brief reference to the rabbit pest, or, as it is now more properly known, the rabbit industry. For many years the rabbits were a serious menace to profitable settlement over very

wide areas. They multiplied at a rate quite unknown in Great Britain, and, despite trapping for market and wholesale destruction by poisoning and various other means, they caused an inestimable loss to the pastoralists. With the general use of wire netting, however, and the incentive to destruction given by the increased price for furs and meat, the pest has been brought within something like control. It has been interesting to notice that the rabbits showed no disposition to make themselves at home on the heavily timbered, well-watered country, but chose the relatively dry and sheltered inland plains. Some idea of the rate at which they increase will be gathered from the fact that the exports alone of Australian rabbits to the United Kingdon in a single year exceed 20,000,000. This would be but a fracton of the numbers killed each season. Most of the destruction is still done by poisoning, and then there are thousands of trappers in the outlying districts who kill for the skins alone. These men are nearly all country workers who desert the farms for the more lucrative and independent life of rabbiting. The closer settlement movement, however, is the agency which is stamping out the pest. On all holdings of less than, say, 10,000 acres the rabbit is easily exterminated or held in check, and this means that it is no hindrance to the farmer.

LONDON, 1914.