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REPORT BY MR. BERT KELLY

- NUFFIELD "FARMER" in 1951 -

I arrived in Britain on January 23rd, 1951, and left on August 18th of that year. During that time I was driven many miles in other people's cars, did 10,000 miles in my own car, visited over 80 farms, 17 experimental farms, Institutes and Universities and attended 12 meetings. I fully realise that by doing these things I do not qualify as an authority on British Agriculture, and that no one should write his impressions of a country unless he stays there for years. However, it is a duty of Nuffield Scholars to present a report, so I must write of what I saw even if I was not in Britain long enough to get a true picture of their agriculture. And because I saw things through an Australian's eyes, I will be stressing things which are common knowledge to the British farmer but which are uncommon to us.

The most important impression certainly was that British Agriculture is a thriving, virile industry; that the British farmer is right on top of his job, he has the tools, and the men to do it well, and more important still, has the ability to use these tools and men really well; he has a tradition of careful land and animal husbandry which he has followed, and at the same time has increased production to an extent that is a definite challenge to farmers in Australia.

The following two tables will illustrate two facts, how Britain has increased her production and also how much they produce on so small an area.

Percentage Increase in principal crops -
United Kingdom - between 1936/7 and 1949
in volume of production (not value)

Wheat	..	33%
Barley	..	178
Oats	..	54
Potatoes	..	85
Sugar Beet	..	45
Vegetables	..	5
Fruit	..	117

Total Production in thousand tons in 1949:

	<u>United</u> <u>Kingdom</u>	<u>Australia</u>
Wheat	.. 2,204	6,050
Barley	.. 2,129	408
Oats	.. 2,995	482
Potatoes	.. 9,035	410
Meat	.. 1,204	1,050
Milk and Milk products in terms of liquid milk	.. 9,260	5,500

You will notice that, except in wheat, British production is well above ours. Even in meat.

When I first went to Britain I always hoped that farmers would ask me how many acres I farmed. After I had been there a month I used to dread the question especially if they wanted to know how much I produced per acre. I am well aware that there are many good reasons why we have not been able to greatly increase production in Australia, but the fact remains that they have done so in Britain, as well as carrying out a tremendous rearmament and housing programme, and this fact alone should make us interested in their methods. I admit that I came away disappointed in that there was not one thing that I could seize on and say "This we should copy and we would do better"; the differences in climate are too great. But I came away with the feeling that in these times of shortages, when we in Australia are being urged to produce more from our farms, we can very well learn that it is possible to produce a lot from a little land if you work it intensively, and that we Australian farmers have not got a monopoly on all the good qualities in the agricultural world. I found just as much initiative, inventiveness, willingness to take risks, willingness to work long hours, good sound horse sense, advanced technical knowledge, and so on, just as much of these qualities that go to make good farmers did I find in Britain as anywhere in Australia. I must admit that this was a surprise to me. I had expected the British farmer to be much slower to adopt new methods, much less advanced in technical knowledge and much less mechanically minded than he is.

There are two ways I could go into detail. I could treat each aspect of farming separately, say cereal farming in Britain, sheep farming in Britain, potatoes, dairying and so on. Or I could take a particular farm in a particular district and deal with it in detail. This will be "generalizing from the particular" and is dangerous, but I am a farmer and not an economist and I can see things clearer in farm units, so I will try to do it the second way, farm by farm.

A Hampshire Farm. (John Rowsell, near Winchester).

This is the first farm I went to, in January. I stayed there for a month, returned again for a week in April and again for a week in August. It was my very good fortune that I should have had so long at this place as not only was Rowsell in the top flight as a farmer, but both he and his family were kindness itself.

I will never forget my first morning there. I had found out on the way down that he farmed about 1100 acres and that he employed over 20 men. I thought to myself that I ought to be able to show these chaps a thing or two, because we work a farm of 2200 acres with 3 men. I couldn't help thinking that they must be living in the past to need all that labour just to work 1100 acres, probably still ploughing with two horses and so on. So I thought I would just stroll round the buildings before breakfast and give the place the once over. The first place I visited was the office and there Rowsell was talking away to an infernal machine which I later found was a dictaphone. And a Secretary was working away at a switchboard. They both seemed rather busy so I wandered off to look at the buildings. I really wanted to see the plough horses. It was only half light and it was only by keeping a sharp look out that I escaped being run over by tractors, jeeps, trucks and cars. I found one horse pulling a poultry cart, and patted it for a long while, and tried to get my bearings. I couldn't help wondering if that aeroplane chappie hadn't put me down in America by mistake, but he couldn't have. The accent wasn't right. "But this couldn't be an English farm", I thought. The horse was hurriedly driven away so I wandered back to breakfast feeling rather self-conscious about my new leggings.

During breakfast Rowsell answered the telephone between mouthfuls and I sorrowfully realized I wouldn't be able to be patronising at all.

It really was a remarkable place. £20 an acre invested in machinery, 10 tractors, 2 land rovers, 2 four wheel drive trucks, one ordinary truck, 3 combine reaping machines, a pick-up baler, even an Australian drill, engines and infinitum, a £5,000 grain drying plant and over 20 men permanently employed, including a permanent and very busy Secretary. To an Australian it seemed that it could not possibly be economic; that they could not possibly produce enough off 1100 acres to justify this expenditure in labour and plant - but they do. It is an arable farm, rather a thin chalk (we would say limestone) soil; certainly not naturally fertile. They specialize on cereals and grass seeds, with an average wheat yield of about 56 bushels and barley rather more, and oats a lot more. Nearly all the grain is of seed quality and therefore carries a premium for quality, and their grain prices are higher than at home but not so very much. It is their yields which partly throw the picture out of focus to an Australian's eye but more still the fact that most of the farm is cropped with some kind of crop every year. On a 1000 acre farm in Australia we would regard it as very bad farming to have more than 300 acres of wheat and 300 acres of secondary cereal. In Britain, on really arable areas, they would expect to have at least 900 acres of their 1000 acres in crop every year - often the 1000 acres.

The grass seed acreage was extensive. He grows cocksfoot, perennial rye grass, timothy and meadow fescue for seed and white clover; also linseed and mustard. Besides which he has a great many fowls and pigs and about 400 sheep. He also grows sugar beet and some potatoes (though not many of the latter this year).

He gave me all the figures for his farming over many years. His costs are heavy indeed. Besides the £2,000 capital cost in machinery, fertilizer costs him well over £3,000 a year, feed for pigs and poultry £7,000 and a wage bill of about £8,000, maybe more. He was paying around about £1 an acre rent. It looked to an Australian an impossible job to make it pay, yet pay it did and here are some of the income figures for one year.

260 acres	barley - averaged 56 bushels and returned	£9,000
128 "	wheat - 57	3,000
63 "	oats	1,400
20 "	sugar beet	900
70 "	linseed	1,400
76 "	rye grass	2,000
70 "	cocksfoot	2,400
	threshed grass seed/hay	1,000
	straw (baled)	500

687 acres

There are other crops such as timothy, meadow fescue and mustard for which I have not got the returns. He would have about 100 acres out in unreact legumes. Besides this he sold -

35,000 dozen eggs	..	7,500
pigs	..	7,000
		<u>£36,100</u>

You can well imagine that, to an Australian, these figures took some getting used to. I would not have them taken as typical as this chap was a really top farmer (though he would deny this and there are certainly many others almost as good on the chalk) but it shows that 1,000 acres of intensively worked poor chalk soil can give very big returns if it is worked with efficiency, enthusiasm and brains; also a number of good men.

CEREAL GROWING:

This year because of the wet autumn and winter, most of the corn was sown in the spring. Generally over half the wheat would be winter sown, but this year there was none, only winter oats. They were ploughing in February, sowed this year in April and would be reaping in late August. This year was later than usual because of the weather.

They plough differently to us. They plough in lands, up and down their fields and not round and round as we do. Their ploughs, whether direct coupled or trailed, are lifted mechanically out of the soil at the headland which makes turning easier. And they plough deeper and they turn their rubbish right under, not leaving the soil as we do, on edge, to absorb moisture. This chap was ploughing with 4 furrow set ploughs pulled by caterpillar D2 tractors. They take great care with their ploughing, going to great pains to drive quite straight and to turn the soil quite evenly. But it is this question of a complete turn under of surface trash and green stuff that interested me. At home we plough to leave the sod on edge which allows rain to penetrate. Then we work it up again to kill weeds. If we were to plough as they do, we would get a surface seal on our soil which would tend to run water off. And because usually with us ploughing means a period of fallow we would, to kill weeds, have to drag up to the surface the organic matter we had ploughed under. And the whole tradition of our farming is to feed the growing grass to the sheep and not to plough much under. But in Britain, they plough a great deal of green stuff under and leave it there, do their subsequent cultivation immediately with disc implements, and sow sometimes the next day, and certainly before they have a weed problem. In short they plough to kill weeds, and their subsequent cultivations are aimed at consolidation, not weed control. Consequently they do not drag the stuff they have ploughed in to the surface but leave it underneath where it rots down to humus. I think this point of ploughing under a mass of material and leaving it to rot is more important than we realize. Certainly, with our old tradition of fallowing to grow wheat we might be right, but I think we would improve our soil texture a lot if we were to adopt this technique of ploughing under, working over and then sowing. Anyway, I think it is something we should watch carefully, and I think it is something that our research stations could help us with. Perhaps we have not enough moisture to rot down the stuff ploughed under.

Enough about ploughing. This year because of the very wet winter and early spring they could not get on the land until the middle of April to do their sowing. When at last the land did dry up the British farmer and his men put up a wonderful performance and Rowsell more than most. In spite of the fear that it might rain again, he refused to leave a field till it was worked down thoroughly. Most of the working down was done with disc harrows, followed by spike tooth harrows. He insisted on a very thorough job being made of consolidation. Then it would be sown with a disc drill. He was using a McKay 20 run machine, and sowed about 3 bushels of seed and 3 cwt. of mixed fertiliser. The field was then harrowed and rolled.

In spite of the high rainfall (35") there does not seem to be a water erosion hazard which we would face at home if we worked the soil down as fine as they do. The rain comes often but in small doses and I saw very little erosion in all of Britain.

They use what we Australians call a combine for sowing to some extent but they are not popular because they bring up the sod that has been ploughed under, and because they take too much tractor power to pull.

One of the things which interested me very much was to see how they established their legumes with their cereal crop. If a field is to be left out it would be unthinkable to leave it to volunteer growth to make the pasture. Instead the last cereal crop would be undersown with a pasture. If the under-sowing was to be done in winter wheat, the crop would be harrowed in the spring when the corn was a few inches high and the small seeds sown with either a hand pushed seed barrow, or a seed box attached to a roller or by going over it again with the disc drill. If the seeds were to be sown in spring sown corn, it would be sown with the same implements on the rolled land after the corn sowing was finished. In all cases, great care is taken not to bury the seed at all deeply and to roll after sowing. Consolidation is their watchword, and a good deal of care is taken to try to see the small seeds are not sown in the same row as the corn. That is one reason why they do not mix the seed with the fertilizer. They carry this a step further by drilling half the seed one way and half the other, so as to get a more even spread. Rowsell also uses a small seed drill with $3\frac{1}{2}$ " spacings instead of the 7". It is interesting to follow these undersown pastures through the growing period. They are almost invisible till a little before harvest time, but on the warmest part of the summer they make very rapid growth and if harvest is delayed by bad weather they grow up through the corn and make reaping very difficult. After the crop is reaped they continue to grow, which is so different from our own undersown pastures, which are mostly annuals and which stop growing when the crop is ripe. In Britain an undersown pasture will look insignificant in June but the following June will be magnificent, particularly if it is red clover.

All Rowsell's grass seed crops are undersown with the cereals except cocksfoot which is sown direct, without a cover crop, and it is sown in wide drills to allow for inter-row cultivation.

Before leaving this question of cultivation there are two matters which call for comment. The first is that the British farmer looks on the cultivator as a means of drying out the soil and the roller as a means of conserving moisture. If a field is reckoned to be too wet to sow it will be stirred up to let it dry out. If it is getting too dry it will be rolled to conserve moisture. Secondly, they say it is better to plough up a legume while it is really good and get the maximum amount of organic matter into the soil, rather than to wait another year when it may have gone back. Interesting.

In 1951, because of the late start, the pressure was really on. All tractors were kept going as long as there was light, and Sundays passed by unnoticed, except by the Secretary who worked out the overtime schedule. In with all the bustle, nothing was skimped, the drill would be still backed into the corners, and everything done exactly right. I do hope this experience is going to do me some good.

The next step on the cereal programme would be spraying for weed control. I did not see this done at Rowsell's and will deal with it later. But it is a routine practice.

And now comes the surprising part. In spite of the spring sown corn receiving about 3 cwts. of mixed fertilizer, (phosphate, potash and nitrogen) at sowing time, Rowsell would watch his crops most carefully and if any showed any signs of needing it, they would get another cwt. or so of nitrogen in some form or another. He reckons to get his crops rank enough on that poor chalk soil so that they will go down if they get heavy rain. He does not like our spinners because they are not exact enough in their distribution. This business of adding nitrogen to the growing crop is of tremendous importance in getting their high yields. It is perhaps the quickest short cut we could take in our higher rainfall country to increase our cereal yields provided (a) we paid due regard to organic matter and (b) that we could get it. We cannot, so it is no good fussing.

Following the cereals through. The crops are usually ready to harvest late in July. This year they were later and I saw very little reaping. All Rowsell's crops are reaped by harvesting machines, called "combines" over there. These are all American type machines, almost all Massey Harris, built in Britain. They are all self propelled, with a low front, with conveyor canvasses, with electric lifts on the combs. They have a great range of speeds, 17 I think it is. They are very easy to handle and are capable of handling a tremendous bulk of stuff, as they need to be with the crops so often flat on the ground and full of green stuff.

I was rather critical of their having self propelled machines instead of power take off machines when they have so many tractors. But they have two answers (a) Because they have no fire risk they do not have to cut around their crops with a binder to make a fire break as we do, so they can just pull into their fields with a self propelled machine and not have to worry about opening up (b) - and this one takes answering - Their roads are so narrow that it would be impossible to shift along the roads with a power-take-off machine, without removing the front, which would be intolerable.

Rowsell uses tanker machines, i.e. instead of a grain box as we know it; he has 60 bushel bins, for bulk handling. A lorry draws alongside the combine, an auger is set going and this shifts the grain from the bin to the lorry while the combine is reaping. When the lorry is full, the auger is stopped, and the lorry tootles off to the grain drying plant, empties through a sliding door, over a grating over a pit, and then hares off back to the combine which has gone on filling its 60 bushel bin.

This question of grain drying is one worry we haven't got in Australia. Rowsell's plant cost him over £5,000 and is a tremendous affair. I was never certain what was going on. I am sure it was pre-cleaned in a glorified winnower and then went through the oil heated drier and eventually it ended up with one of the big concrete bins when it awaited sale. If it started to heat it would be shifted into another bin. But how it gets there I don't know.

Most places with combines have a drying plant of some kind or another. Some years they do not need them at all, but more often they need them a great deal. There are a great many methods of drying grain but I didn't worry to follow it up. In past years, when they used the binder and threshing machine, the grain would dry out in the rick. There is one other method of drying grain which is quite common.

The corn is cut with a swather which is really a glorified mower which delivers the cut material to one side, where it lies on the stubble and dries out (if it doesn't rain). A combine with a pick-up-front then comes along and picks it up and threshes it.

Some farmers with combines do not have driers but they have extra combines, and so can afford to wait till later in the day before starting to reap. Thus they get a drier sample. But Rowsell would say it was fit to reap when the bitumen roads were dry. They don't wait till it is hot and only seem to stop when it is wringing wet.

Rowsell sells most of his corn as seed, but the average farmer sells to a merchant who pays according to sample. The Ministry fixes a floor price which varies from month to month; the longer the grower holds the grain the more he gets per bushel. Generally, their cereal prices are higher than in Australia but not very much. About 14/- a bushel for wheat, 11/- bushel feed barley, 11/- feed oats. Many farmers obtain quite a big premium over these prices, both for seed and also for quality.

A plaintive note. They give their prices in cwts. or quarters or sacks. It seems to vary according to whereabouts in the Island you are. To one whose mental arithmetic is as bad as mine, this continual mental gymnastics of trying to translate these figures to bushels is very wearing. They use 4 bushel sacks. These are tied at the top but even so hold 4 bushels and are proper man killers to handle.

Because the crops are reaped so low there is not much stubble left. In some cases Rowsell puts a spinner behind combine and scatters the straw as it comes out. But usually a pick-up baler comes along after the combine and bales the straw that has passed through. This is sold or used for bedding.

Rowsell fertilizers his grass seed crops very heavily indeed, often using several cwt. of fertilizer even after poultry have been folded across the fields. This year he cut his cocksfoot with a binder and threshed it in the field, sold the threshed straw as hay. Most of his other crops are mowed, side delivery raked and picked up and reaped with a pick-up on a combine. The straw is baled by a pick-up baler and sold or used as fodder. Yields are heavy as you would expect with the fertilizer treatment given, rye grass this year going 4 cwt. acre.

While the mown crop is lying in windrows it is very liable to damage by rain. If it does get wet before it can be reaped it is "aerated" by a machine which just lifts (not turns) the stuff. Turning would knock out too much seed.

Some seed crops are reaped direct with an ordinary front machine. But the difficulty is to wait till the crop is all ripe. White and red clover is reaped by mowing and picking up, white clover is often sown with rye grass to simplify reaping. The prices that they get for their grass seeds are high.

There are many organisations of seed growers who give a great deal of technical advice to their members, and who do their own certifying and help to control prices and acreages. They are very live bodies indeed.

Another plaintive note. There are a great many pedigree strains of grasses, clovers and cereals, and they all have the prefix S. There are S strains of rye grass, white clover, cocksfoot, oats etc. S100, S123, S23 and so on.

It is very hard for the uninitiated to know what they are talking about when they natter away about \$100, when you don't know whether they are talking about oats, clover or rye grass. You don't like to ask. It is all very difficult. If they adopted the prefix O for oats, C for clover and so on, it would help not only the overseas visitor but also, I suspect, themselves, because I have an idea that many of them get confused in their own S numbers.

We grew mustard at home during the war and it was interesting to compare Rowsell's crop with our own. They did not seem so much bulkier than ours but his yields were much higher -- for two reasons, I think. The cool summer allows slow ripening and thus time to mature a big seed. But more important I think is that he gets all the seed because of cool reaping conditions. We used to waste a lot of ours, especially in hot days.

Rowsell's grain drying plant is not suitable for drying his small seeds, so if it is too damp it is passed through a grass drier. I don't think this machine is used much for drying grass, only grass seed.

Rowsell is a grain and grass-seed grower "par excellence", as good as you would find anywhere, particularly when you remember he is farming a poor chalk soil. But his high grain yields are not just the result of heavy fertilizing and good cultivation. Just as important is the organic matter in the soil. I will deal with the different methods used by farmers in Britain to maintain the soil structure in other places in the report, and will only deal with Rowsell's methods now. He attacks the problem from two angles, firstly he grows grass seeds and secondly he keeps animals. Dealing firstly with grass for fertility. Professor Sir George Stapleton, who is a close friend of Rowsell's, is quite sure that by growing a vigorous stand of grass, and only removing a few cwt. of seed as you do in a grass seed crop as distinct from a cereal crop, you get a great build up of humus. He says that it is not only the bulk above ground, but there is always as much growth below ground as above, and as these roots decay you get your humus. I must admit it was a new line of approach to a problem which is (or should be) worrying farmers in Australia. And I could not help thinking that those variegated thistles I have been worrying about might be doing good after all.

Leaving the theory out of the discussions, there is no doubt that the British results in general, and Rowsell's in particular, do bear out the argument. I suppose many people in Australia have been thinking along these lines but it was a new slant on the question to me, and one that I shall follow up. The grass seed market would be a comparatively easy one to flood, but it is worth remembering that there is this build up of organic matter by growing seed crops. It gives business a kind of hidden credit which it should get. Of course we would expect to get a build up of nitrogen following the clovers. We all know that, but the build up of humus following seed crops of cocksfoot, rye-grass, timothy etc., is more important to Rowsell than the nitrogen that comes from the legumes. He says he can easily get nitrogen from a bag but humus is not so easily obtained.

Rowsell keeps sheep, pigs and fowls. I think he keeps them, not because of the monetary return but because of the humus return.

SHEEP.

He keeps several hundred (about 400) Clun ewes. The Clun is a breed which has become very popular in Britain lately, because it eats grass.

The Englishman (not the Scotsman) divides sheep into two classes, arable sheep which are supposed to eat turnips and swedes, and grass sheep which actually eat grass. It all seems queer to us and I will have a crack at the subject later. For the present, Cluns are grass sheep. They look like a cross between a Shropshire and a Hampshire or Suffolk, though no doubt the Breed Society will disprove this. They are wonderful mothers, having very high lambing percentages and are great milkers. That completely exhausts their virtues. Rowsell keeps his sheep to eat his leys and to find work for his shepherd. I am not sure which reason should come first. There are no useful comments I can make except to mention the subject of fences. Rowsell's was the best fenced farm I saw in Britain. Generally their permanent fencing is poor, but they make great use of temporary fencing, almost all wire netting. But even Rowsell, whose fences were really excellent, used temporary fencing much more than we do. The old shepherd would think nothing of erecting a quarter of a mile of temporary netting in a day. I think it is something we could copy.

Rowsell has just given birth to a lovely set of sheep yards, with drafting race the right length, and tapered, and everything just right. They are the best I saw in England. Bennett-Evans has a good set in Wales and the Scotsmen have plenty. They call them "shedders".

PIGS.

Rowsell keeps a pedigree herd of Wessex Saddlebacks. This breed is very popular in Britain, where it is claimed they are an excellent grazing pig, and are used as sows to be mated to a Large White boar. They are almost indistinguishable from the "Essex". One breed, the Essex or the Wessex (I forget which) has white on its hind feet. The two breeds are kept separate to confuse people.

But it was not Rowsell's pigs, but his method of running them that was so interesting. The sows were brought into movable houses (called folds) before they farrowed and stayed there till the piglets were weaned at eight to ten weeks. The sows then went back to their paddock but the young pigs stayed in the folds till they were ready for topping up for sale either as baconers or as breeding gilts. Rowsell still uses the sty for topping up but till then his pigs are run on these folds. Each fold is shifted by a tractor each day, and so the manure falls straight on to the field. And the pigs keep healthier, as they are on fresh pasture daily. It was a most interesting set up. I would not say we could copy it in Australia. Our hot summer temperature would mean we would have to cart a lot of water in the summer and the capital costs of the folds would be high even if we could get the material. And our labour is more expensive. But nevertheless Rowsell had to overcome similar difficulties when he started. We have all given lip service to this question of returning organic matter to the soil but here was a man who had gone to a lot of trouble to evolve a system to do it. It works with him and works well. Here was an example of an excellent arable farmer who found it profitable to evolve a method of keeping pigs, not for the money they made, but for the dung, so he could grow better crops.

POULTRY.

There are a lot of things of which I know little, but about hens I know almost nothing at all. So when Rowsell took me round to see his hens I kept very quiet indeed. First, he showed me his laying battery, with hens in cages three tiers high, fed and watered with a slowly moving hopper on an endless chain. Lights were kept going during the winter evenings, and the hens just sat there laying an egg a day or else ---. Not a rooster in sight. I suppose it is all right but I wouldn't be a hen in Britain, with meat so scarce.

Then there were the deep litter houses which were not quite so blatantly ruthless. Hens kept under this system are supposed to be healthier than battery birds because they get some vitamins from scratching around in their manure.

But the part which interested me more was the field units. There were two of these, a rearing unit for rearing birds to put in the houses, and a laying unit; several thousand birds in all. In the laying unit, 20 birds were kept per coop, and they are shifted daily. So again you see this manuring side of the story coming out again! I am sure that, from an egg production point of view, this field unit was not as efficient as the battery or deep litter system but it is obviously very good for the succeeding crops.

Rowsell says it costs him 17/- to buy a day old chick and rear it to laying. Last year he sold 35,000 dozen eggs.

That is all the facts I can give about the hens, and whether they compare well with Australian standards I haven't the faintest idea.

LABOUR.

The standard wage for agricultural workers was £5 for a 47 hour week with one week's holiday with pay. Ordinary week day overtime at 2/8d. an hour with weekend and Sunday work extra. It has since risen but not very much. One must admit at once that much of the excellence of British farming is due in no small measure to the cheapness, availability and general excellence of British Agricultural labour. With that £5 a week the labourer had to find everything, though if he lived in a "tied" cottage he would not have to pay more than 6/- a week rent. He would get almost no cheap meat and very few "perks". Granted the living costs are cheaper in Britain, the fact remains that the standard of living of the British farm worker is much lower than in Australia. And I was surprised to find the standard of workmanship so high. The average farm worker expects to be told what to do and he does it, and does it very well indeed. They handle their machinery splendidly, and take a greater pride in "workmanship" than do their Australian counterparts.

Overtime is worked as a matter of course, often till 9.30 at night in the summer and all Saturday and Sunday at times. In almost all cases the men are only too glad to earn the extra money, and, in any case, they are expected to work overtime if it is necessary.

There is a good deal of agitation going on about the "tied" cottage which is really a cottage in the village which the farmer rents with the farm, and can only be occupied by a man working for the farmer if he wants him. In many cases these "tied" cottages are of a low standard but the farmers say they cannot do them up for the maximum rent of 6/- a week. Most farm labourers live in a village and not on the farm. I should say only about 20% own their own cars, though in a country so closely settled, a car is not so necessary as it is here. There is no difficulty in obtaining permanent labour, and, if you are close to a town of any size, casual labour too is easy to get.

Rowsell's staff would be made up somewhat as follows:-

- | | |
|---|---|
| 1 Assistant (we would call him an Overseer) | |
| 10 Tractor Drivers (one man, one tractor) | |
| 1 Lorry Driver | |
| 1 Mechanic (a key man) | |
| 1 Shepherd | |
| 1 Pig Man | 1 Secretary |
| 1 Head Poultry man | 4 Oddjobbers, three of which were women |
| 3 Lads on the poultry | 1 Storeman. |

I thought they were a really excellent staff, keen on their jobs and capable. I wish we had more like them in Australia.

PLANT:

I am not going to itemise the plant; it would take far too long and I cannot remember it all. But it may be of interest to go into detail on the tractors. These were all in pairs -

2 D2 Caterpillars
2 Massey Diesels
2 Massey kerosene
2 Fordson Majors
2 Fergusons.

Each man kept to his own tractor and was expected to keep a logg. book of tractor hours and work done.

THE BOSS:

The average British farmer is very keen on his job, and very interested in the farming matters of his own district. But they are often surprisingly ignorant of what is going on in the next county, and completely incurious about farming in another country. Rowsell was a brilliant exception to this. He was one of the first Nuffield farming scholars to go from Britain. It may be that that had broadened his outlook, but it would be more likely his natural tendency. He welded the farm, its plant and its men, into a unit which for efficiency, drive and happiness I have not seen equalled anywhere. And I consider myself very fortunate to have seen the unit at work from inside.

FEN FARMING.

I was not on a single fen farm long enough to get anything like so complete a picture of their farming as I did in Hampshire. I think it would be better in this case if I took a hypothetical fen farm, and just given as complete a picture as I can on an imaginary farm, say near Bourne, in Lincolnshire.

The rainfall would be about 23 inches, the country quite flat, the soil a deep rich loam. All the fen country is drained by tile or mole drains, leading into bigger drains and the water is often eventually pumped into rivers.

The rotation on my typical fen farm would be -

potatoes
wheat
barley
peas or red clover.

The potato land is heavily manured with farm yard manure. Average yield of about 12 ton per acre of main crop potatoes. Up to 12 cwt. of complete artificial would be added when sowing the potatoes. The following wheat crop would not be fertilized but would yield about 60 bushels. The good farmers expect to be able to throw their hat on these crops when they are in ear and the hat should stay on top of the crop. Really wonderful the wheat crops were. The wheat would be cut with a binder and threshed or reaped with a combine. The stubble would be ploughed and sown in the spring with barley, perhaps undersown with red clover for the following year's crop.

If the next year was red clover, it would be cut for hay, or perhaps for silage, and the regrowth ploughed under ready for potatoes again. Or if it was peas instead of red clover, these would be packaging peas (blue boilers). These would be reaped by mowing and picking up with a Combine "pick-up" or reaped by a machine which cuts the vine at ground level.

The land is so fertile and the farming so good that there is almost nothing they do not grow, and the rotation quoted is varied endlessly. Sugar beet may replace potatoes and very often does. Both in potatoes and sugar beet great efforts are being made to mechanise where possible but not very successfully. Taking sugar beet first, one of the big difficulties is that sugar beet seed often clings together which means that two seeds are sown very close together. This means that two young plants come up too close so the crop has to be thinned, and this has to be done by hand. All kinds of elaborate attempts are being made to eliminate this and I will not deal with these at all. The fact remains that, up till now, at least, growing sugar beet means a big cost in labour for thinning (about £6 per acre) and a great number of men and women willing to work long hours at contract hoeing.

I did not see any sugar beet being harvested as I left Britain too early in the year. The difficulty as far as mechanization goes is to cut the tops off the roots cleanly. The tops are a very valuable fodder for stock and in any case the beet has to be topped at just the right place and this presents a great problem to the machinery maker. Besides which the beet has to be reasonably free from dirt and this too is difficult by machine. So at present growing sugar beet means a heavy labour bill.

There is a great shortage of cheap concentrates in Britain today, and all concentrates are carefully rationed. A great inducement to farmers to grow sugar beet is the fact that the beet grower is able to buy back from the factory an amount of sugar beet pulp in proportion to the amount of sugar beet sold. So you have the picture of a farmer growing beet to get the pulp to feed the cattle to make the manure to put on the beet.

To give you an idea of the complexity of the fen farming programme, here is one farmer's harvest programme. He starts cutting red clover for silage early in June, and red clover hay late in June. Starts digging early potatoes in early July and will continue digging spuds (main crop following earlies) right through to November. Reaping barley and wheat starts in August, with odd spurts for reaping linseed, turnips for seed, mustard. And then sugar beet lifting and he hopes to be finished the beet by Christmas Day. Six months of harvest! I thought things could be complicated on an Australian farm.

You have to take your hat off to these fen farmers. They crop a flat and fertile soil in a really excellent manner. I must admit that the district gave me the horrors during the wet winter but that wasn't the fault of the farmers.

I have not mentioned anything about stock, yet I said earlier that about a quarter of their land was heavily dressed with farmyard manure every year. And you see very few animals on the fields. Almost all the manure comes from cattle kept in yards during winter. The fen farmer buys 3 year old steers in November, puts them in yards, gives them a lot of straw to walk around on and eat, feeds them concentrates in varying amounts, sells them at a loss (so he says) in the spring, but he had a whole yard full of farm manure to cart out on the fields to plough under before planting his spuds. He buys back the pulp from the factory, and the manure from the cattle.

He buys Lincoln Red Shorthorn steers, bred on the Lincolnshire Wolds (or chalk) district, or Hereford bred on the higher rainfall western side of England, or Irish bred steers. But in all cases he buys (if he can) 3 year old steers, not because there is more money in them, but because they are heavier and so get on top of more straw and so make more manure. They are usually sold as fats for about £90 after the winter, or are topped up on grass by the Leicestershire graziers.

The Lincoln Red Shorthorns interested me. There are two types, the dairy and the beef. The dairy type does not seem to have much to commend it, but the beef type does. Until the last year or two, Lincoln Reds have been in the same herd book at the Scottish Shorthorns. They have now separated, because though their breeding is the same, the Scottish people have bred for a low set, early maturing animal, mainly for the export trade. The Lincoln Red men, on the other hand, have stuck to their original aim, to breed heavy $3\frac{1}{2}$ year old steers. No one could say that they make pretty beef but there is an awful lot of it. The South Devon steers may be heavier but no others. They are rather light behind but the weight is there and weight is what is wanted in the world today. And they have another advantage in that the cows have more milk and so foster mothering of show cattle is not necessary. I would like to see someone try to raise beef type Lincoln Reds in Australia.

To go back to the farm yard manure left in the yards by the bullocks (whichever the breed). Sometimes it is forked into carts, more often is loaded into mechanical dung spreaders by front end loaders on tractors, and sometimes is loaded by drag line excavators.

There are very few fences on the fens, ditches mark field boundaries instead of fences. You see the strange sight of gates without fences; the gates are across the ditch culverts, not to keep stock in but to keep strangers (in lorries) out. It is a remarkable district, full of fertility and good farmers but not a place to go for a holiday in the winter.

POTATO GROWING IN HEREFORD.

Hereford is on the high rainfall western side of England, where the production of stock and milk is more important than crops. It is very beautiful undulating country with a deep rich red soil. I hate to say this, but the farmers of Hereford have the reputation of getting their money the easy way so that the standard of arable farming is not as high as in other places in Britain. But I had the good fortune to stay with Mr. George Twentyman who farms 300 acres on the outskirts of the City of Hereford. He is the hardest-working farmer I struck in Britain and the returns that he gets from his 300 acres are amazing, and are very close to that of the fen farms of Eastern England. His general rotation, which he varies a good deal, is potatoes, wheat, red clover. I must admit that I know almost nothing about growing potatoes in Australia, so will not open my mouth too wide. George Twentyman dungs his red clover land with manure produced from pigs (which eat the waste 'taters) and bullocks kept in yards. He then ploughs and works the land down thoroughly and sets his early potatoe seed by hand with a heavy dressing of mixed fertilizer late in April. He uses mostly Scotch seed because it is more free of virus. The land is then ridged and left alone. The earliest are ready for lifting in about 12 weeks. They are spun out with a spinner behind a tractor, picked up by hand and sold and eaten almost immediately. The land is then platted to rape on which store lambs are run and fattened. The land is then ploughed again and sown to wheat (undersown with red clover). The wheat yields were very high; I saw some 80 bushel crops. The wheat is reaped with a "Combine" the straw picked up and baled and the red clover is there for next year's crop.

The next year the red clover will be cut for silage and the second crop reaped for seed. It is a simple system which works very well indeed. But everything on Twentyman's farm works, including myself when I was there.

Twentyman does not use mechanical potato planters. There is a lot of argument about these planters in Britain, some people swearing by them and some at them. I don't know enough about it to express an opinion. But Twentyman lives so close to the City of Hereford, that he can get any number of casual labourers, women at 1/9d. an hour and men at 2/3d. And as he picks by hand, he says a planter is a potential lifter, so he has not mechanized the planting.

The Fertilizer is dropped from a fertilizer dropper, not in the rows of planted 'taters but on the surface. There is a great deal of argument in Britain about the question of fertilizer placement, some people preferring to place it in the row with the seed and others on the surface. But when you are using very heavy dressings (up to 8 cwt.) you cannot place this amount too close to the seed.

At lifting time the potato haulm is shifted to one side by hand to allow the spinner to work properly. But in main crop potatoes the haulm is sprayed with sulphuric acid. This gets rid of the haulm and also prevents the spread of potato blights and other diseases.

I would be much better equipped to discuss British potato growing if I knew the Australian end of it, which I don't. The general figure is that it costs about £65 to grow an acre of spuds. The Ministry of Food has a floor price for spuds which operates only on main crop but which keeps prices steady all the way through. A lot of main crop potatoes are put into "graves" and are left there till the Ministry wants them, when they are "riddled" with a kind of winnowing machine and bagged and sold. Twentyman was grossing about £100 per acre (up to £120) but his figures are much better than the average not only because he is an extra good farmer but also because he is close to a ready market, the Welsh coal mines. The average price for main crop potatoes is £11 a ton for Britain.

Mechanical potato lifters have not been successful except on land free from stones. They pick the potatoes all right but also a lot of cuds and stones.

If the Ministry of Food have more potatoes than they want for human consumption, they are sprayed with a purple dye and sold back to the farmers as stock feed potatoes for a low price, round about £5 to £6 a ton. This is the kind of silly thing that has to be done when the Government feels it necessary to regulate supply. But the supply of potatoes is vital to Britain, and I must admit that generally the governmental policy to ensure a plentiful supply has been successful.

The stock feed potatoes and the waste potatoes from the farmer are almost all fed to pigs cooked (usually steamed).

SCOTTISH LOWLAND FARMING:

The two main differences between English and Scottish soil are that, on the average, the Scottish soil is "thinner" (i.e. not so deep) as in many parts of England. And the climate during the summer is not suited to the ripening of wheat crops, and because of this there is a greater emphasis on livestock than in England. The Scots would probably say that there was a third difference, that the standard of farming was better in the north - I will not comment.

Because of the cooler wetter summer, "combines" are not as common as in the South, which means that the corn is cut by a binder, ricked and threshed, the straw being used in the cattle "courts" in the winter. And because of the thinner soil, the rotation is wider, leys being left down longer and grazed with both sheep and cattle. Turnips are used more than in England for cattle feed. Roots are sown on "hills" both in Scotland and in Northern England, while in the South they are sown on the flat - no one seems to know why. Oats is the main cereal in Scotland, in fact in some districts on the West Coast, "corn" and "oats" mean the same thing, and no other cereals are grown.

But it was their livestock husbandry that interested me more than their arable farming. Almost all cattle are kept in "courts" all the winter. These are very well built stone and slate buildings. In a great many cases the threshing machines are built into these "courts" and built-in elevators carry the straw directly to the cattle, which saves a handling. This also allows threshing to be done under cover in the winter. Turnips are fed out up with a root cutter.

Sheep are much more important to the Scottish arable farmer than to the Englishman, and because of this, the Scotsman knows his sheep husbandry far better than in the South. For instance enterotoxaemia is called by name and not protein poisoning, and not looked upon as a visitation of the Almighty as in England. There the sheep are usually left to the shepherd who will be excellent at the more primitive ailments and remedies but generally would know very little about what science has taught us in the last twenty years, but in Scotland the farmers would be right up to date with this information.

I must admit I did not learn very much about looking after sheep from the Scots. The main difference between them and myself was that we both knew what to do, but they had the men to do it. Their lambing percentages are very high indeed, due to unremitting care at mating and lambing time, and not to any secret formula. It was very disappointing. The only wrinkle I picked up was to keep a goat in the lambing pen for giving weak lambs a drink. And I learned this in Yorkshire! There I saw a ewe bearing a kid and a goat rearing a lamb!

The mating and lambing techniques are as follows. The ewes are kept in store condition till mating time and then "flushed" on good feed about two weeks before mating. We have been taught this for years but few of us have gone to much trouble to do anything about it. But in all of Britain it is a routine practice. At mating time 2% of rams are used and the rams are raddled and fed each day. The raddling mixture is often red ochre and tallow, or some other colour and tallow. The served ewes are marked very plainly, so plainly that they can be separated by these marks on their rumps at lambing time. The ewes lamb about March when it is often very cold, so they are brought into lambing yards in "smotes", that is, the ewes that were served in the first week form the first "smote" and those that were served in the second week form the second "smote" and so on. The lambing pens are not elaborate, just a small paddock of a few acres with some rough kinds of shelter in it. It is often right up against the house, and a portable shepherd's hut is always handy. The ewes are seen every few hours during the night. Perhaps because of their flushing technique, they get a very concentrated lambing and reckon to get it over and done within a month. The shepherds almost always get a bonus of so much per lamb reared and this makes them very keen.

The lambs are marked in a variety of ways, almost all known methods except the teeth being used.

The lambs from a lowland Scots farm are kept till they are about 10 months old and then they would dress about 60-70 pounds. And these are the people who are supposed to want our light weight lambs! They think it is very funny over there.

HILL FARMING IN SCOTLAND & WALES.

I could have said "England" also, because there are plenty of places in England where conditions are almost as hard as in Scotland and Wales. I was fortunate enough to visit the property of Captain Bennett-Evans of Llangurig in Wales, and also the hill farm of Mr. Duncan Stewart, Millhills, Scotland. There were several factors in common to both places. They are both controlled by men of exceptional enthusiasm. They both have around 100 inches of annual rainfall and they both suffer a very severe winter. And they are both very hilly and steep. On both, sheep and cattle are run and almost no arable farming is done.

An Australian finds it difficult to realize that a place can have too much rain. We assume that if the land is not carrying too much scrub and can be top dressed with phosphate and has enough rain then it can be made into good pasture. But in Britain, you are up against the question of the high rainfall causing a leaching of lime from the soil, and so the soil needs tons of lime per acre besides phosphates, and also potash. And the very severe winter brings problems such as we cannot imagine. I have a great admiration for the pioneers in my own country, but in little Britain there are pioneers doing as tough a job as I have seen anywhere, not against dust and drought, but against snow and too much rain. For instance, Captain Bennett-Evans lost 3,000 of his 5,000 sheep in the bitter winter of 1947. And at Stewart's place snow was still on the hills in the middle of their summer. It must be a real man's job in the winter.

If I were an author I could write a book about Bennett-Evans. A short thick dark, tough looking Welshman, living in a converted railway carriage, battling against the rain and the winter and the steep hills with a serene kind of confidence. He has been trying topdressing by aeroplane with variable results. And he is trying in every possible way to tame the country. He is opening up drains to allow the water to get away through the peat. He has planted plantations of trees for shelter (there are no natural trees); he has built fences in places where a mountaineer would feel giddy. He has a very fine set of sheep yards and is building a modern wool shed. He runs Welsh Black cattle which have to live out during the winter. They are nothing much to look at, but they live. The same could be said of the sheep, tiny little beggars cutting 2-3 lbs. of washed wool. But they live (mostly). Lambing percentages are not high, round about sixty per cent.

Millhills is a household word in the Shorthorn world. It is owned by Duncan Stewart, known locally as "the Laird". Millhills is a beautiful farm near Crieff, in Perthshire, and you would think that "the Laird" would put in all his time sipping whisky and cashing cheques. But when I was there he was camping in a caravan on this hill farm near Killin, clearing land so rough and tough that it would make most Australians sit down and cry. There were several thousand sheep on the place, all Scottish Black faces. They were divided into flocks of about 600, known locally as a "hertzel". One shepherd to each "hertzel", each hertzel lived by instinct on its own hill. The cattle were Highland Shorthorn cross and we spent a hectic day dehorning the calves. The Highland is a shaggy, long horned, slow maturing animal but really quiet and very hardy.

I was very impressed by the shepherds on both places. It would be as hard a job as you would find anywhere in the world, looking after sheep in these hills in those winters. But these hill shepherds have a kind of quiet self confidence that I did not find in the low-lands. And they have really excellent sheep dogs. One of the pleasantest memories of the whole trip was watching a Welshman on a little nuggety pony working a pair of dogs, speaking to one in English and the other in a beautiful lilting sing-song Welsh. But he was becoming concerned because he thought the Welsh speaking dog (as he called it) was learning to "speak" English.

Whenever I hear it said (as I do sometimes) that the Britisher is becoming decadent and soft, I think of the job that is being done on these two places by these two men, and on a great many other similar places. Then I realize that all the pioneers aren't in the dominions, not by a long chalk.

STUD BREEDING IN BRITAIN:

Stud breeding in Britain usually means race horse breeding, but in Australia it usually means the breeding of pedigree animals. I will use the term in the Australian sense. Before dealing with the breeds of sheep in detail, there are some observations I want to make that are common to all breeds.

Firstly I must admit that I was disappointed in the standard of pedigree breeding generally. This is an awful thing to say about a country that really prides itself on the standard of its stud stock. But that is how it struck me. For instance, "inbreeding" is still looked upon as almost immoral which is strange in a country which reared Bates and Bakewell. Breeders buy rams and bulls from each other quite light-heartedly, and when I told them that many of our merino studs did not use outside rams they could not understand how it could be done without lowering standards.

Secondly, many ram breeders made little effort to keep extended pedigrees. The Suffolk and the Border Leicesters did in the main but most of their breeds just seemed to drift along.

Thirdly, show fads and fancy points seem to play too great a part in fixing the standard. We are bad enough in Australia in that regard, but they are far worse.

When discussing the various breeds I will try to point out where they fit into the British picture and also how they fit into ours.

SHEEP BREEDS.

I think there were 27 breeds of sheep at the Royal Show at Cambridge this year and even then there were some which were not shown. Everyone agrees that they have far too many breeds but what they cannot agree on is which breeds to retain. Each breed society is entrenched behind a bulwark of pride and prejudice and the breeders are firmly convinced of the peculiar virtues of their own sheep for their own environment. And they are also firmly convinced that if I were to take some back to Australia, and shift them over 12,000 miles from their environment, they would do equally splendidly - though they wouldn't be expected to do really well 30 miles away in the next county where the country is a bit flatter, or more hilly, or the soil is a different colour or something. The plain fact is that they clutter up their sheep breeding with this multiplicity of breeds, and they spend more time than they should in breeding for show points for their particular breeds and certainly not enough time in breeding for qualities that really matter, such as wool weight etc.

If I were a distator responsible for British Agriculture I would concentrate on ten breeds, sell the rest as fats, and spend the rest of my life in an armed fortress.

I will not deal with each breed, that would take too long, but I will take the breeds that are of particular importance to Britain, and divide them into groups.

GROUP 1. The Northern hardy breeds.

Under this group would come the North and South Cheviots, the Blackfaces and the breeds similar to a Blackface, Swaledales, Dale-breeds, Rough-fells, Herdwicks and so on.

Really the only virtue these sheep can claim is their hardiness - and it is most important. It is better to have a rough, tough sheep than no sheep at all, and if you try to improve their wool, for instance, by breeding the kemp out, you will probably find that many of the improved lambs may die at birth because their birth coat may not be nearly so resistant to cold as it is now. Consequently it is no good looking at them with too jaundiced an eye. They may not be much to look at to an Australia, but they live under very hard conditions, and because of this have to be tough and not refined.

There have been some Cheviots come to Australia. The breed has now split into two flock books. The North County Cheviot is bigger and not as pretty in the wool as the South County Cheviot. They both have a tendency to be high in the wither but from a carcass point of view they are low set and thick. They carry a nice fleece of wool, particularly the South's, but it is not the class of wool that would blend well with a merino if they are to be kept as half-bred ewes, as is the Border Leicester or Romney. If they are used as fat lamb sires, I do not think they will grow quickly enough to compete with the established down breeds. And if they are used as half-bred merino ewes to produce fat lambs, I am frightened not of the wool quality but of the wool weight. We have very little country in Australia hard enough to justify keeping them as a pure bred, just for their hardiness.

There is one thing in common to all these hardy northern breeds and also the Welsh breeds and that is their habit of "hefting" to their own hill. Each flock "hefts" or stays on its own pasture by a natural instinct, and so the hills are not fenced. This is all very well in its way as it cuts fencing costs, but it also leads to a certain amount of common grazing, as the sheep wander from their allotted pasture but return to it immediately they are disturbed. And it also makes it difficult to improve the breed of sheep for two reasons, one, that if they are changed much they may lose their "hefting" instinct. Secondly, it is obviously impossible to have different breeds on the same hill.

The next step in the breeding ladder is the production of half bred ewes, particularly in the North of Britain. The Blackface is mated to Border Leicesters to produce the "greyface" ewe. The Cheviot is mated to a Border to produce the "half-bred". The Swale-dale is mated to a Teeswater or Wensleydale to produce the Massham ewes. These half-bred ewes are in turn mated to "down" rams to produce high quality fat lambs. The thing for an Australian to remember is that these crosses have names and particularly that the Cheviot-Border cross is called the "half-bred."

The Welsh Mountain sheep again have nothing to commend them but hardiness.. They are tiny little kempy creatures but they live in a 90 inch rainfall with a bitter winter.

They are again crossed with the Kerry to give a better fat lamb mother, but not as good as the northern half-breds. There are also black welsh mountain sheep which are even smaller.

The Leicester and the Lincoln are run as pure breeds in Lincolnshire, and are also mated to down rams to produce fat lambs. They are becoming less important now that folding on turnips is becoming less common. I mentioned earlier that the Englishman (not the Scotsman) divides sheep into two classes, arable sheep and grass sheep. The arable breeds are supposed to be particularly suitable to eating turnips. Before the first war the fertility of much of the chalk lands in England was maintained by this practise of grazing sheep on turnips and using the sheep manure as crop fertilizer. The Leicester and the Lincoln were two breeds which were used for this purpose in the North as the Dorset Horn and Dorset Down and Southdown were used in the South. The Kent or Romney Marsh you only find in Kent and Sussex. They are used on the Kent marches but do not seem to find favour elsewhere. Really, it is a queer business to find how certain breeds seem to stop dead at county boundaries.

There is a pocket of hard country down in the South-West, near Exmoor, and here again they have a batch of breeds, each one of which is supposed to be ideally suited to its particular locality - Devon Longwool, Dartmoor, Exmoor Horn, Devon Closewool, South Devon and so on. They are of no interest outside their own particular locality.

THE CLUN. There is a great deal of interest being taken now in the Clun. This is because it eats grass, and so is different from other sheep very much like it, such as the Suffolk, Shropshire etc., which are not supposed to like grass. They are rather longer in the leg and certainly not as shapely as the Suffolk and their tails are cut a different length which is most important, but they are very good mothers with bad wool.

The Down Breeds. These are two important ones, the Suffolk and the Oxford, and the Suffolk takes pride of place. Very low set, and thick and quick growing. Good sheep, and carefully bred by keen and efficient stud masters. The only other breed which would compare with them in the least respect is the Border Leicester. The Oxford is a tremendous sheep, better suited to producing lambs that mature at ten months, but with the swing to weight as against quality, they have increased a lot in Britain. The Shropshire is a fat lamb sire, but it is not very popular.

The Hampshire and Dorset Downs also have a large following.

This is a brief summary of the sheep breeds as they fit the British scene. How do they suit Australia? As it see it, in Australia we only want British breeds for two things (a) as a fat lamb sire (b) to mate to merino ewes to produce half-bred fat lamb mothers. We do not want their specialized hardy breeds because we have no country hard enough to justify them. Now let us deal with the production of the half-bred mothers first. Because these breeds must be mated to merino ewes and the half-bred ewe is expected to cut a payable fleece of wool, then the breed used must be a long wool breed. We use at present the Border and English Leicester, the Romney and the Lincoln. There were no others that I thought were worth introducing; but I must admit that I was far from happy about these breeds, and for one main reason, that is that their wool seemed to lack substance, and getting too fine and too fluffy. They are producing their sheep for a different purpose than we are; they are not wool minded.

I saw a tremendous class of Borders judged at the Highland show and did not see the judge open the wool once. We will have to be on our guard in Australia about this matter. Their sheep have a style and size about them which is most attractive but the plain fact is that they have not got the class of wool we want. That is my opinion.

The Border Leicester is a tremendous sheep in Scotland and, as I mentioned before, is bred with care and enthusiasm. There has been a tremendous emphasis placed on style and the sheep look at you with an air of splendid disdain. They have had a lot of jaw trouble but they say they are getting away from it now. They also have had a lot of "slobber" in the breed, spilling of the cud, but they have culled for it very heavily and you see it very little now. The breed is only kept to produce rams and no one keeps them as commercial sheep as they do the English Leicester. They say they are too delicate - they certainly do not look delicate. They are coloured a brilliant orange for showing and then they look like a night-mare. There is a tremendous demand for them and no one was in the least interested in supplying the kind of sheep we want in Australia because they are doing much better at supplying the kind of sheep they want in Scotland. They get over 1,000 guineas for their top rams most years, and round about 50 guineas for flock rams, so you cannot blame them. But in my opinion, our Border Leicester breeders in Australia have a problem on their hands, where to go for replacements.

The English Leicesters are not numerous but there is a group of keen efficient stud-breeders on the job. Very big sheep, with some jaw trouble and a fleece of wool too small in the lock. Not enough wool weight when crossed to a Merino ewe. Lincolns were again big and the wool had not lost its substance as in the other breeds; bit too much wool around the eyes.

The Romneys were again very big but here the wool on the few I saw at the Royal Show seemed to have lost all its character, and to be fine fluffy stuff.

These criticisms of the wool on these long wool breeds are not meant for the British flock master. He is quite justified in breeding the class of sheep suited to his environment. The point I want to make is that we have a different environment in Australia and just cannot always expect to get the type to suit that environment from a country so very different. The British stud master must just realize that that is so and not rely too much on the plea that "Britain can breed it". An animal is not necessarily better for being bred in Britain, particularly if it is bred to suit British conditions, not ours.

Turning to the short wool breeds that we use in Australia. The main one in Australia is the Dorset Horn and this breed is unimportant in Britain, and they do not regard it as a "down" breed, and you very seldom hear of it being used as a sire of fat lambs on ewes of another breed as it is out here. Why, I don't know. Their Dorset Horns are not as short in the leg as ours and have been bred with an eye to the milking quality of the ewe, and also more attention is paid to wool quality and density than here. In England as soon as I mentioned that I had a Dorset stud, they would ask me if I lambed the ewes twice a year and this seemed to be the most important thing for which the Dorset was known. The number of studs has declined since folding on turnips became uneconomic and now the breed plays a very minor part in the industry.

The two main down breeds as before mentioned are the Suffolks and Oxfords. The Suffolks I thought were a good deal better than in Australia, but here again this craze for fancy breed points is a danger.

In order to get the jet black points which show standards demand, there is too much black fibre in the wool. The Britisher is not wool minded and cannot understand how important this question of black fibre is to us, where it depreciates our lamb skin values so markedly. But I found the Suffolks excellent, generally speaking.

The Oxfords are interested from an Australian point of view. They are a little too woolly around the head, and have, of course, black points. When we come to realize that we cannot afford the luxury any longer of producing 36 pound lambs, and the same price per pound is paid for a 60 pound lamb as is paid for a 36 pound lamb (as has been the case in Britain) then we may well look to the Oxford for the heavy weights. The lambs do not mature early (they grow fast but are not mature till late) but they often dress out at 65-70 lbs. at 10 months.

The Hampshire has a small following in Australia. I thought the Hampshires in England were very good but they were rather too woolly around the head, and we would run into the same grass seed problem with them as we did with the Shropshire in the past.

The Dorset Down looks very good indeed. They do not seem quite set as a breed but the good ones are very good.

The Shropshire is not popular in Australia nowadays, mainly because of the show fad of growing wool around the eyes. The Shrops, that I saw at the Royal were much better than I expected and if they were typical of the few Shropshires in England, they might well make a come-back.

It was strange to find the Southdown so neglected in Britain. There are very few studs left and they exist almost solely to supply the export demand. The British farmer has a quiet laugh at this insistence by Australia and New Zealand in concentrating on light weight lamb. They give the ideal their blessing, breed small shapely sheep for us to buy and get busy themselves producing heavy weight lamb which may not be pretty but for which they get a lot of money. The best Southdown flock owner I saw ^{was} using Southdowns on his commercial sheep. But the Southdowns that I saw were beautiful sheep, thick, good bone and lovely heads. Much too woolly around the eyes, I thought, and rather too short in the body.

I am not sure how the Ryeland fits into the British scene. In any case, he doesn't bulk very large. The ones I saw at the Royal were very pretty and very small.

There are many breeds which I have not mentioned, but they are not important in Britain or here. I would like to make one more point. There is a temptation for an Australian going to Britain with a lot of wool money jingling in his pocket, to start a new breed in Australia by importing some of the lesser known breeds. They see them at the Royal all dolled up like lollies and surrounded by fanatical breed secretaries and devotees. I hope they will pause and ask themselves whether there is a real economic place in our Australian sheep set up for more breeds. Personally, I think future improvement in our mutton breeds will lie more in improving what we have than in importing new breeds.

GENERAL SHEEP NOTES:

About the only thing an Australian can find about which to be really patrenising in Britain is wool. Generally wool is thought of as the stuff which grows on the skin of the sheep and which has to be clipped off, or it falls off, once a year.

It is then bundled up in a bag and sold at a very low figure, far lower than obtained by the Australian millionaires. Actually, I thought they got very well paid for their wool, considering its quality and the way they prepared it (or didn't prepare it) for sale. They have a Wool Board which fixes prices for different grades and also which has a stabilization scheme to cushion price movements. Everyone was grizzling about it when I was in Britain but everyone grizzles at Boards anyhow, anywhere.

SHEARING.

Generally speaking, they use machines in the South and blades in the north. The standard of workmanship is not high. It surprised me to find in Scotland particularly, that they did not start to shear until the "rise" appeared in the wool. This "rise" is regarded as a natural phenomenon that appears in the spring yearly. It is really a break in the wool which is caused by a hard winter and a good spring. In 1951, because of the very hard winter, the "rise" was very pronounced. When I heard that they were waiting for the "rise" in wool before starting shearing I thought they were waiting for it to get dearer, and sympathized. But when I found they were only waiting for the break in the wool to grow out, so as to make shearing easier and in the meantime the wool on many of the sheep was dropping off (having risen too well) I began to wonder if the Scots were really as thrifty as I had heard. Wool was lying thickly in the gateways and thinly on the pastures. I thought of getting myself a bran bag and rehabilitating my finances but it didn't get dark till about 11 p.m. I remember walking over a sheep pasture with Lord Lovatt and as he walked he picked up bits of wool and explained that it was for his betting money on the week-end!

Some men use wooden stools or benches for shearing. They sit on one end in comfort and the sheep lies in comfort on the rest of the bench. They both need to be comfortable because they are there for a long while. Others shear on the ground and everyone does it the way they think best. And they never do up their shears properly and there are no grindstones. They certainly do it the hard way. But it gets done and they have a lot of fun and no labour troubles.

It surprised me to find so much fly strike in the South. The climate in the summer is quite humid and they get a lot of body strike. They are beginning to use spray dips to combat this pest, using D.D.T. dips. They do not crutch their sheep during the year and I am sure this practice would get them out of a lot of their trouble.

SHEEP DISEASES:

They seem to suffer from many of the same diseases as we do in Australia. Enterotoxaemia, foot rot, scabby mouth, arthritis, toxæmia of pregnancy, all show up and all are treated, as in Australia, with greatly varying degrees of knowledge and efficiency. Foot rot seems to be little understood. One method of preventing it is to run a goat with the flock. Enterotoxaemia inoculation seems very much more expensive than in Australia. Great reliance is placed in various black and smelly medicines of great antiquity. Many shepherds think that these potions are effective for almost everything. But, as mentioned before, there are many men (particularly in Scotland) who know and treat their sheep diseases in a thorough manner, but all the same there was little of any value which I picked up.

One final word of warning to fellow Australians visiting Britain to look at sheep. It is the custom of the country, particularly in the South, for the visitor to give the shepherd the price of a drink before you leave. You slip it to him in an off-hand kind of way and he tries to look as if it comes as a great surprise. But it is expected, right enough. I suppose many of my countrymen have damned themselves in the eyes of plenty of shepherds because of not knowing about this. And I met one old breeder of sheep who still remembers with scorn the visit twenty years ago of an Australia (for whom I have a very high regard) because he did not tip the shepherd.

PIGS.

I haven't much of interest to say about pigs. Here again there are numerous breeds, but the Large White is dominant as the sire of baconers, mated to either the Essex or Wesscx, or to Large White sows. Supplies of feeding stuffs are effectively rationed, which keeps the industry fairly stable. Strangely enough, there is not the acute shortage of animal proteins that there is in Australia; a lot of the animal protein comes from fish meal. There is one very interesting development into which I wish I had looked more carefully, and that is the ability of fish oil solubles to make up for the deficiencies of vegetable protein when compared with animal protein. Research has not gone very far in this regard in Britain, but it is something we should be following very carefully in Australia, with our great shortage of animal protein.

Otherwise I have nothing much to tell of pigs. I saw some pigs being kept tethered, allowing the sows access to fresh ground and fresh pasture daily. And, of course, the pig folds on Rowsell's place. The Large White breed is really excellent and is led by really excellent, keen, capable breeders. Cooked potatoes make up a very large part of the pig ration. A lot of good work is being done to demonstrate how profitable it is to do the young pigs well, before they are wanted, by way of creep feeding. Skim milk is not used for feeding young pigs because there isn't any available.

DAIRYING.

This is one of the major industries in the country and it is one that has made steady progress almost since the first war and spectacular progress during and since the last war. The whole emphasis is on the whole milk production, and very little is used for butter or cheese. Prices are staggered to encourage winter production.

In a report such as this, which is already far too long and discursive, it is not the place to try to cover the whole industry particularly as I am no dairyman. There are, however, some points which call for special mention. Firstly, breeds. The Dairy Shorthorn has for many years been the most popular breed in Britain, mainly because of its excellent dual purpose characteristics. Of later years the Friesians have made a spectacular increase, so much so that now I think they outnumber the dairy Shorthorn. They produce slow maturing but eventually heavy weight steers and a great deal of milk. But recently there has been a good deal of uneasiness in official quarters because of the lowered solids (not fat) content of the milk, and this is laid largely at the door of the Friesian. It is not the fat content of the milk of the Friesian which is causing concern, though this is not high, but the solids-not-fat.

This is the breed position as I saw it.

Dairy Shorthorns are almost everywhere. Friesians for excellent pasture. Ayrshires for colder conditions and poorer pasture. The two Channel Island breeds, particularly the Jersey, used to be looked on as the rich man's cow. A premium is paid for milk from the Channel Island breeds, irrespective of its fat content. There is some criticism of this.

There has been a rapid increase in the number of cows that get in calf by artificial insemination - till now about one cow in twelve is got in calf by this method. The average cost is 25/- to 35/- per service with two free returns. Most of the insemination centres are run by the Milk Marketing Board but some are run by farmers themselves.

A bonus system encourages the production of milk from T.B. free herds and also the production of clean milk. An extra 1½d. a gallon is paid to milk produced in buildings of a certain set standard and which passes a methylene blue test, and a total of 4d. a gallon if they are T.B. free as well. The incentive payments are having the desired results.

The supply of concentrate food has been difficult since 1939 and this has led to a more intelligent use of pasture, both growing and conserved. I should think that Mr. Rex Paterson, of Basingstoke, one of the biggest dairy farmers in the country could be taken as an example as to how a dairy farmer can continue to produce milk without depending solely on concentrates. In fact, a dairy farmer would get the same kind of intense interest from a visit to one of his places as I got from John Rowsell's. Exact and comprehensive records are kept for everything that goes on on his properties. His observations on the falling off in the milk yield on May 1st almost every year were most interesting, also the effect on milk yields of stopping concentrates and feeding only good quality silage. This latter work has not gone far enough to draw conclusions, but it has an interesting trend, i.e. that the milk yield did not fall for some months and then certainly not enough to pay for the concentrates which would have been normally used.

The only general criticism I would offer about their dairying is this, that generally speaking they do not do their calves as well as you would expect. They often look as if they could do with a good feed.

It might be of interest to say that the average price per gallon for milk in Britain was 1950-51, 2/9½d.

FODDER CROPS.

The traditional fodder crops, turnips, swedes and mangolds are still used but are losing favour to fodder beet (a new introduction) and marrow stemmed Kale or Chou Mollier. The fodder beet is interesting. It seems to come somewhere between sugar beet and mangolds, and thus has a much higher carbohydrate content than mangolds. The Ministry is leading a drive to get it to replace mangolds to a large extent. Kale is used as a winter feed, mainly for cattle. Sometimes it is cut and carted to the cattle and sometimes the cattle graze it in the fields where the soil texture is light and the treading in wet weather (poaching it is called) will not harm the soil. I saw it very successfully grazed in this way using electric fencing, shifting it daily.

"Hungry gap" Kale is another crop which is grown mainly for animals but in a bad horticultural year the tops are sold as "greens" for human consumption. In Suffolk and Essex in particular cabbages are treated in the same way, eaten by humans if there is a demand, by stock if there is not.

Sainfoin is a legume very much like Lucerne which I would like to try at home.

FODDER CONSERVATION:

The traditional method of fodder conservation in Britain is of course cutting meadow hay. There are a lot of farmers using pick-up balers and there was one method of loading the bales which interested me. When baling, a man stood on a small sledge towed behind the baler and tipped the bales off on small stacks of five. When loading, a Ferguson tractor with a front end manure loader picked up the head of five by simply pushing the prongs of the loader under the heap, lifted it and then ran to the lorry, and handed it to the man stacking. Another development was to use a large sledge made of pipes which would carry a load of up to 80 bales, though the average load was nearer 50. In this way the bales could be slid off in small stacks once a round, by driving a crowbar into the ground just ahead of the stack on the sledge and then driving slowly on. This method meant that the unloaded bales were all in line which meant easy loading by elevator.

Dried grass is used a good deal and is an interesting process in itself though I can never see it becoming popular in Australia, where our natural drying conditions are usually so good.

Silage is the method of fodder conservation which has made big strides in the last few years. This is due to the very uncertain hay curing weather in Britain, and even more to the development of a simple machine called the Paterson buck-rake. This is an invention of Mr. Rex Paterson, whom I have mentioned before, and in essence, is a small strong steel hay sweep fitted on the back of a tractor which must have a hydraulic lift. The crop is mown, the tractor backs along the mown crop till it picks up a load, the load is then lifted by the power lift and is taken to the pit, when it is dumped exactly where required.

But a still simpler method is to use the buck-rake not to fill a pit, but to make a wedge. This saves sinking pits. A wedge is really a stack and a ramp combined, or, to put it another way, the tractor climbs up the inclined face of the stack and dumps its load where required. We have since used this method at home with complete success.

I have seen the buck-rake used to make simple heaps of silage, running over the heap from any direction. The secret is consolidation, by having the tractor with a loaded rake pressing the silage down all the time, and having a load on the back allows the tractor wheels to grip when climbing the stacks.

This technique of making silage quickly and cheaply is the most significant thing I learned in Britain, and I feel sure the practice will spread rapidly in Australia in the dairying districts and later into the sheep country also.

WEED SPRAYING:

The control of weeds has taken a big step forward in the last five years, and now spraying of cereal crops is almost a routine practice. Many farmers own their own small plants and besides this there are several big firms which make their own weedicides and also spray by contract.

The most significant points to me were as follows:-

When the farmer did his own spraying he usually used the low volume hormone method with fairly good results but when a big contract firm was doing the work, in order to guarantee results, they were using high volume hormone application and often high volume non-hormone selective weedicides by which method they could get more exact results.

One of the big firms, at least, is using helicopters on crops which are knocked around by wheeled vehicles.

By using careful methods it is possible to spray many of the broad leaved weeds out of white clover pastures.

Weeds in pea crops can now be controlled with selective weedicides and care, and also the pea moth.

TURKEYS:

I have always had a feeling that we ought, in our warm South Australian climate, to be able to rear turkeys well. Particularly as there always seems to be some saffron thistle seed about on which turkeys are said to flourish. So I took care to have a careful look at several turkey rearing places.

There are two main ways of rearing turkeys in Britain, open range and intensive. A typical open range place would hatch in incubators, rear in houses till the young turkeys were 7 to 8 weeks of age, and then gradually accustom them to ranging in the open. And then probably bring them inside again to fatten.

An intensive farm would keep the turkeys in houses till they were killed, not allowing them to touch the ground at all but keeping them on slats or wire netting. The reason for this is to prevent disease. I feel sure that the intensive system would not be necessary in our warm dry climate.

Several points of interest emerged. One was that most people thought it was better to use the small old fashioned kerosene incubators, but at least one man was successfully using an adapted electric machine. A 65% hatch was considered to be good. Secondly, and most important, everyone, without exception, was positive that it was essential to have about 12% of animal protein in the ration. This was fed even if the birds were kept on open range. I would have thought that they would have picked up enough insects to get their animal protein but this was not their experience. They all said that if I could not be certain of getting animal protein to make up 12% of the ration, then it wasn't worth starting.

There seems little doubt that we could make a success of the rearing end of the job. But there is little sense in doing this if ourselves or others cannot manage the fattening. An animal protein seems the key to this.

Hatching eggs cost about 3/- each, and day old chicks up to 10/-d. each. They expect to get about 4/- a pound for turkeys at Christmas, though they have been getting up to 6/- a pound. I think the market would be very hard to fill but prices must be reasonable and the turkeys not too big.

LAND CLEARING.

There is still land being cleared in Britain, but because of the stage of development of the country, not very much.

I got the impression that their clearing costs were too high, mainly because they felt they had to prepare their land for permanent cultivation, not for permanent pasture, which meant that all stumps and stones had to come out. They do not use stump jump ploughs for the job, as I am sure they should.

There were two interesting implements which I think may have some interest to Australians. One is the big root rake, a tremendous machine for windrowing stumps and sticks. It is pulled by a large crawler tractor. I heard of (but did not see in operation) the ubiquitous Ferguson being used for the same job, using a "tiller" with all the spring tynes on the backbar. This acted as a rake and the machine could be lifted when the windrow was reached by the hydraulic lift.

PERMANENT GRASSLAND:

The emblem of the British farmer is rightly the plough. I was not very impressed by much of their permanent grass. Some is good, of course, and the cattle fatteners around Leicester are sure of this. But generally speaking, I thought that more phosphate would do good and that, although there has been in recent years a wonderfully large selection of improved pasture varieties established, yet they are not greatly used. Around Market Harborough in Leicestershire there is a patch of country which has the reputation of being ideal fattening country. The Britisher is of the opinion that it is not so much the quality of the grass that determines beef fattening ability but the soil underneath. And around Market Harborough they have evidently just the right soil to put beef on bullocks. They do, too. Under controlled experiments the best pasture has put on over 4 cwt. per acre per year (live weight).

But it didn't look such wonderful grass to me, and really some of it looked if it could do with ploughing up and sowing down with improved varieties, and more fertilizer. But I would have been shot if I had said so.

Many farmers use a mower a lot to top their pastures. This does some good and at least makes them look good for a while. In many districts it is a common practice, especially just before a "farm walk" or "field day" as we would say.

One very sound chap said to me that the shortage of feeding stuffs in Britain was a blessing in disguise because it would teach them to use their grass properly. When New Zealanders to Britain they are very critical of their pastures; when Britishers go to New Zealand they are very critical of the arable farming. I really must find out what they think when they come here.

STOCK MARKETING.

All fat stock is sold in Britain to the Ministry of Food at a pre-arranged price per pound. The cattle are individually weighed over a weigh-bridge and graded by three experts on the estimated percentage of dressed weight. Sheep are often weighed in lots of 20 or less or sometimes only estimated. But always the man who rears and the man who fattens knows how much money he is going to get per pound at any time throughout the year. This gives a real stability to the business. You hear criticisms of almost all aspects of Government control except this. Store stock are sold by auction in the same way as at home except everyone is much more mournful.

FARMERS' ORGANISATION.

This means the National Farmers' Union, or the N.F.U. as it is known all over the country.

Scotland has its Farmers' Union and England and Wales have a separate organisation. They co-operate well together and are certainly a tremendous force in the land. They have about a 90% membership of the farmers in the country. The N.F.U. exists to look after the interests of the farmers in all ways possible but their main work has been done in the political field. Because of the large amount of Governmental control of the industry, it is quite vital that the industry should have its proper say - and it certainly does. It has a very capable leader in Sir James Turner and it is also helped by a great number of very keen, capable men. Because of the fact that the British farmer does not have to work as hard with his hands as we do in Australia, he is able to spend more time in organizing and doing work, such as this N.F.U. work. And one cannot help but be impressed with the quality of the work done. The set up is briefly Head Office, County Office and District Branch. The Secretaries are well paid, and the whole show goes with a swing, efficiency and enthusiasm which I have not seen equalled in any farmers' organisation anywhere. In Head Office they have committees for almost everything, and these go into their subjects with real thoroughness, and are able to give a really authoritative answer if one is asked for (and it usually is) and if it isn't asked for, it is still given without fear or favour. One can easily raise an argument as to whether the artificial control of the industry is really sound but if you accept that it is necessary it is quite vital that the industry has some such body as the N.F.U. to guard its interests. And I could imagine no more capable body to do just that. The only fear I have in this regard is that it is so efficient at this part of its work that it may shield the inefficient farmer from the results of his inefficiency which would be a bad thing for everyone.

The N.F.U. has other functions besides taking an active part in fixing of prices, and looking after the farmers immediate economic interests. For instance, it helps overseas visitors get in touch with farmers in Britain, and also helps to shepherd Nuffield Scholars. It conducts a provident fund. Its members can get cheap insurance from an associated company. It also does some extension work in spreading farming knowledge, but, because of its political activities, is not very efficient in this regard. It cannot be. But for its main job as a farmers' organization to safeguard farmers' interests, it is really excellent.

THE GOVERNMENT AND THE FARMER.

Governmental control affects the farmer much more than in Australia. This is not the place to argue about the merits of free enterprise and free competition. It is the accepted policy of the country that agriculture should be controlled in almost all branches. People seem to have got used to it now and though a certain opening in the conversation with any farmer is to abuse the Government and all controls, nevertheless I think many of them are there to stay. And whatever one's private opinions may be in the matter, one must admit that the controls have been efficient and, broadly speaking, wise.

Let us leave the matter then and have a look at the advisory services of the Ministry of Agriculture. This is known as the N.A.A.S. (National Agricultural Advisory Service). This is a new organisation which operates in England and Wales and which took over in 1946 from the various bodies trying to do similar work. It is well staffed with about 1,550 officers, including office staff. As there are estimated to be about 255,000 farmers in England and Wales, this works out at about one officer to each 170 farmers. And this would exclude research officers attached to the Universities and other N.A.A.S. research centres.

And it would also exclude many officials employed in agriculture in other branches besides the N.A.A.S. In South Australia we have one officer (other than clerical staff) for every 200 farmers. So you can see that the N.A.A.S. does not suffer from shortage of manpower. It is full of enthusiasm and means well, but farmers all over the world are difficult people to advise and I should think the British farmers are harder than most. They have more traditions to be overcome if ways must be changed. Be that as it may, the N.A.A.S. did not seem to me to be the vital force in the industry that it should be. It may be that the regulating and policing work which many of the N.A.A.S. officers have to do, does not help them to get the farmers' confidence. Many individual officers have not that ability to contact farmers which is so difficult to gain yet which is so important to work of this kind. It may be too that some of the officers are not yet experienced enough and also there may be too much emphasis placed on the officer's academic qualifications at the expense of practical experience.

In South Australia we have a very efficient organization in the Agricultural Bureau which acts as an extension medium between the Department of Agriculture and the farmers. Britain appears to me to badly need some such organisation to help the N.A.A.S. function more efficiently.

The County War Agricultural Committees did very important and efficient work during the war. They are still functioning but are known as County Agricultural Executive Committees. The Executive Officer is always an officer of N.A.A.S. and the District Committees always have also an N.A.A.S. officer on the staff. Because of the compulsory powers of both the District and County Committees, the N.A.A.S. officers naturally are suspect by some farmers.

The County and District Committees do much good work. We hear more about the comparatively few times when they take drastic enforcing action. But their really valuable work is to advise and help, much more than enforcing. But they still have power to evict bad farmers, as a last resort. This they rarely do. I have often heard the Committees given much of the credit for the British farmers' wonderful performance during and since the war. I do not think this is right. They have done their part but I do not think it was a major part. I think the chief credit should go to the farmers' ability and desire to do the job.

The Government helps the industry in many other ways. For instance they finance the National Institute of Agricultural Engineering which is centred at Silsoe, in Bedfordshire. This is a mighty attempt to meet the problems associated with the big expansion in mechanisation. It should work really better than it does as it has an excellent set up; on paper it looks as if it would be hard to improve it. It exists to test new developments and also to initiate new developments on its own account and some good work has been done. I formed the impression that it was rather too theoretical. But it is hard to form a sound judgment in so short a time.

The Ministry comes into the picture again by licensing and assisting to purchase, approved bulls, boars and stallions. No boar or stallion can be used for service that is not licensed. I am not sure if the same stipulation applies to bulls. I do not think the scheme is of much value because it places a great responsibility on the Ministry's inspection, and in any case, it should be the kind of thing of which a farmer is the best judge.

This tendency (unfortunate in my opinion) to shelter the farmer from making wrong decisions, and to shield him from the results of his own inefficiencies has taken from the farmers some of the initiative for which they are noted. This has not gone very far but I noticed it in rather too many directions, in expecting Government subsidies for land clearance, for instance, or this Livestock Improvement Scheme, or Hill Farming Scheme. We farmers in Australia also are learning to lean on the Government too, when we should stand on our own flat feet.

The Young Farmer Club movement is doing a good job. It is helped by Ministry grants, but it also supplies much of its own finance. Fortunately, it has not become commercialised, I mean firms are not allowed to make publicity out of giving prizes and so on. In fact, I should say the organization is on about as sound a footing as can be imagined and is doing an excellent job in making the youth of the country interested in, and efficient at, country life. The judging and craft competition arranged at the shows are a feature of the work.

Agricultural Shows are always supposed to be of great educational interest. Personally, I am afraid I have exhibited in too many shows to be really convinced of this. The British showing set up is different from ours in a great many ways. In many ways ours is as good or better, but there are three ways in particular where I wish we could copy them. Firstly, they judge their sheep in the open so that the public can follow it. Secondly, at the English Royal they had a parade of prizewinners of each of the 27 breeds of sheep and a very interesting and well prepared commentary on the functions and attributes of each breed. It was very well done. But chiefly I would like to see our Departments of Agriculture put on the same kind of intensely interesting and informative exhibit as does the Ministry in Britain. To me it was the high-light of all the shows; there were growing crops indicating different fertilizer treatments, live animals fed in different ways and so on. For instance, at the English Royal at Cambridge, there were two rabbit fenced plots of wheat, both sown at the same time and treated exactly the same, but in one plot in the winter, two rabbits had been placed for 25 hours, and the effect of what these rabbits had eaten then were there four months later for all to see. With our permanent show grounds it should be comparatively easy for our departments to put on an equally instructive display, if only our Show societies could resist the blandishments of side show owners and other non-agricultural interests in the demand for space.

I will not say anything about research into agricultural problems except to say it is very extensive indeed and well directed. But there is one very interesting aspect that should be mentioned. Many of the firms such as fertilizer manufacturers and veterinary medicine manufacturers, play a very practical and vital part in both research and extension. They are interested in the research side to find out what goods to make and in the extension side to sell them. That is only natural, but the fact remains both research and extension are fairly done and well done. I wish our bigger firms would follow their lead.

I would like to see a better link between the Australian and British farmer. Britain has in Australia an Agricultural adviser to Her High Commissioner. I wish there was a similar officer in London advising us farmers in Australia through our High Commissioner, of the many changes and advances that are taking place in British Agriculture. I was horrified to find how much I had to learn about the farming of a country of which I should have known a great deal. For instance, I should have known years ago about the buck-rake. There is no doubt that they have a great deal to teach us but there is no one to do the teaching.

There is one comment which I want to make on British farmers and the community and country generally. It looks so jolly pretty and well cared for, even in the winter. People generally take a pride in the appearance of their farms and of their villages. It was rather a shock to come home to see the tired looking fences, the bad roads, the thistles by the roadside (and not only by the roadside). There are a lot of good excuses, I know. I have been busy ever since I came back thinking of them in case some of my British friends should drop in. We have a reputation for being able to repair anything with a bit of wire. And we prop up a falling fence in a most ingenious manner. And we have the damn thing propped up for the next ten years. It isn't good enough. As I said before, there are a lot of very good reasons for this tendency on our part, shortage of labour and materials and so on. But I have a shrewd suspicion that in my case, at least, one of the reasons is laziness.

I feel that the trip was a great value to me personally. If it wasn't, it was my own fault. How much of what I learned I can apply on our own property is doubtful, because conditions are so different. But at least I have a reasonably clear picture of their agricultural set up, how they do things their way, and that their way is often careful, thorough and VERY MODERN INDEED.

APPRECIATION:

It would be impossible for me to thank all those people in Britain who helped to make my visit so very pleasant. The officials of the Nuffield Foundation, particularly General Bullen-Smith, did all they could, and it was a lot. And I will never be able to repay my debt to John Rowsell of Hampshire. Others who were particularly helpful were Mr. Garry Webster of Ripon, Yorkshire, Mr. Jack Tupper of Sussex, Mr. George Twentymann of Hereford, Mr. Ronald Farquharson of Dorset, Captain Bennett-Evans of Wales, Mr. Will Hogg of Berwickshire, Mr. Andrew Hutcheson of Kelse, Mr. Stanley Chivers of Histon and many, many more, too many to mention here but whom I will never forget for all their help and kindness.