ROTHAMSTED RESEARCH

# The Place and Management of Sheep in Modern Farming

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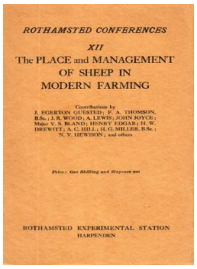


## The Place of Sheep in Modern Farming

### H. G. Miller

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carcases, commonly called Canterbury Lamb, as seen in our butcher's shops to-day.

The financial aspect of the position, however, is all in favour of the Half-bred, and if abbatoirs or cold storage is introduced into this country, I do not think it will be necessary to sacrifice the greater advantages of the Half-bred ewe.

# THE PLACE OF SHEEP IN MODERN FARMING

By H. G. MILLER

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One of the most urgent problems in *English* agriculture to-day specially from the Midlands south, is that of how best to utilize our grassland. The area of permanent grass, in England and Wales, has increased by over 1,000,000 acres since 1921, and by nearly 300,000 acres since 1927. There has also been a large increase in the area of "rough grazing." Yet since 1921, the increase in cattle (all ages) has been only 330,000 and in sheep 2,500,000; that is rather less than five sheep or their equivalent for each additional acre of permanent grass if we assume that the additional acres of rough grazing have carried no stock. More noteworthy, however, is the fact that, while we now have 300,000 acres more permanent grass than in 1927, we have 400,000 fewer cattle and about 750,000 fewer sheep. This is a sure sign of shortage of capital amongst farmers. It is an equally good indication of the problem facing farmers who have followed a "back to grass" policy.

There is no point in carrying on any department of the farm at a loss for an indefinite period of years. If an agricultural revolution is now in progress which will render certain crops and farming systems unprofitable, the situation must be met by drastic changes. At present the most favoured division of the land on a farm is for one-third to be arable and two-thirds grass, the arable being used largely to produce winter fodder for sheep and cattle, and straw for litter, except where profitable cash crops can be grown. If present tendencies continue, it will be necessary to change these proportions of arable and grass and to discover means for making our sheep and cattle less dependent on, or even independent of, arable land.

The uses of grassland are strictly limited and its growth highly irregular. Apart from a few acres for poultry, pigs and horses, we must use our grassland for grazing milking cows, cattle or sheep, or

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for cutting for hay. We want to make grass a more general purpose crop, as it is, naturally, in New Zealand. Attempts to do this are at present being made, for instance, the production of "grass-cake," but present prices for feeding stuffs do not encourage work along this particular line. The development of grass silage is probably of much more practical importance under existing circumstances, eliminating, or, at least greatly reducing, the need for growing roots and winter green food for sheep and other stock on arable land. Then again: why not grow, to coin a phrase, "grass-straw"? Hay to-day provides considerably cheaper bedding than cereal straw, and it should not be beyond that power of the plant-breeder to introduce a perennial straw-producer. If we could produce our litter and

CHANGES IN SHEEP POPULATION BETWEEN 1907-08 and 1927-28

| | *Mean 1907-08 Thousands* | *Mean 1927-28 Thousands* | *Loss (−) or Gain (+) Thousands* | *Loss (−) or Gain (+) Per Cent.* |
|---|---|---|---|---|
| Cambridge, Norfolk, Suffolk | 1022 | 573 | −449 | −44 |
| Wilts, Hants, Berks, Dorset, Sussex, Oxford | 1923 | 1128 | −795 | −41 |
| Lincoln | 1025 | 676 | −349 | −34 |
| Essex, Herts | 336 | 221 | −115 | −34 |
| Cornwall | 402 | 284 | −118 | −29 |
| Gloucester, Somerset | 844 | 625 | −219 | −26 |
| Kent | 930 | 773 | −157 | −17 |
| Staffs, Leics, Notts, Northants, Worcs, Bucks, Derby, Cheshire | 1740 | 1454 | −286 | −16 |
| Yorks, East Riding | 464 | 411 | −53 | −11 |
| Devon | 864 | 784 | −80 | −9 |
| Warwick, Salop | 779 | 723 | −56 | −7 |
| Yorks, West Riding | 718 | 685 | −33 | −5 |
| N. Riding, Durham | 992 | 993 | +1 | — |
| Northumberland | 1125 | 1167 | +42 | +4 |
| Lancs, Cumberland | 1006 | 1077 | +71 | +7 |
| Westmorland | 415 | 467 | +52 | +13 |
| Scotland | 7376 | 7557 | +181 | +2 |
| Wales, including Monmouth | 3958 | 4116 | +158 | +4 |
| Ireland | 3973 | 3853 | −120 | −3 |

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succulent winter food from non-arable land, the way would be open to big changes in the agriculture of many districts in this country.

The use of grassland which we are considering to-day is in connection with sheep. Arable land and sheep are, of course, also intimately linked together, but sheep are of much less importance on this land than they were twenty years ago, as Professor White showed with very striking figures at the Farmers' Club in December, 1929, given in the accompanying table. The tendencies which he then pointed out are still in the same direction, but one must exclude the case of arable land used for temporary leys. Some farmers who still maintain arable sheep flocks, admit it is more for the good of the land than the actual profitableness of the sheep. It should not be impossible for the scientist to devise means of doing to the land artificially what sheep now do naturally.

This conference meets at a time when few sheep-feeders feel particularly happy. Encouraged by the abundance of keep in the autumn and the marked fall in the price of feeding stuffs, they were prepared to pay high prices for store lambs. When fat, they are sold at anything up to 3s. a stone less than the buying-in price. It is important in considering the place of sheep on the farm to-day to examine the present situation, which we can do briefly by noting certain facts :—

(1) There has been a sharp fall in the price of sheep, both store and fat since the autumn. The sharpness makes one feel that it is due to several factors all working simultaneously. If one of these factors has insufficient foundation in fact, *i.e.* if general pessimism is at present excessive, one would expect the fall to have been unreasonably sharp and to show signs of some recovery.

(2) There has been a marked fall in the price of wool and offal. The index of wool prices in February was 75 compared with 118 in 1930. This is undoubtedly an important factor in the price drop of sheep, because mutton has not shown so pronounced a fall in price as have sheep. To take one example, at Leeds Wholesale Meat Market, comparing the price obtained on two corresponding weeks in March this year and last there has been a fall of only 1d. per lb. for heavy weight hoggs, wethers and ewes, and only ½d. per lb. for best quality sheep. In London, however, the fall has been somewhat heavier, ranging from 1½d. to 2d. per lb.

(3) There is heavy industrial depression and much unemployment throughout the country at present.

(4) There has been an appreciable drop in the sheep population during the last three years. This reduces the possibility that there might be overproduction of sheep at home; but there is evidence

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that sheep have been marketed recently in increased numbers, as is seen from the following table which also shows the distribution throughout the year of the numbers of store and fat sheep sold in about forty markets in England and Wales. Most of the store sheep are bought in during August, September and October, but fat sheep are sold more steadily, although in smaller numbers during the winter.

INDEX OF SHEEP SOLD ON CERTAIN REPRESENTATIVE MARKETS IN ENGLAND AND WALES.

FROM "FACTORS AFFECTING THE PRICES OF LIVESTOCK IN GREAT BRITAIN" (p. 108).

*Compared with figures for* 1930 *and* 1931, *supplied by the Ministry of Agriculture.*

| | *Fat* | | | *Store (including Lambs)* | | |
|---|---|---|---|---|---|---|
| | 1924–28 | 1930 | 1931 | 1924–28 | 1930 | 1931 |
| January . . | 64 | — | 85 | 20 | — | 27 |
| February . . | 70 | — | 78 | 27 | — | 24 |
| March . . | 82 | — | 78 | 39 | — | 21 |
| April . . | 89 | 119 | — | 64 | 77 | — |
| May . . | 107 | 107 | — | 87 | 69 | — |
| June . . | 128 | 107 | — | 43 | 29 | — |
| July . . | 120 | 135 | — | 46 | 39 | — |
| August . . | 137 | 109 | — | 154 | 179 | — |
| September . . | 126 | 104 | — | 354 | 318 | — |
| October . . | 115 | 119 | — | 289 | 337 | — |
| November . . | 90 | 81 | — | 70 | 68 | — |
| December . . | 71 | 80 | — | 24 | 21 | — |

The monthly average is in each case taken as 100, and is actually as under :—

| | | |
|---|---|---|
| 1924-28 | Fat | 146,629 |
| | Store | 58,942 |
| 1930-31 | Fat | 170,051 |
| (April 1930-March 1931) | Store | 62,957 |

(5) Imports of frozen mutton have increased to a remarkable extent, as the following tables show :—

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IMPORTS OF CHILLED AND FROZEN MUTTON AND LAMB
(*in cwts.*)

| | *January* | | | *February* | | |
|---|---|---|---|---|---|---|
| | *1929* | *1930* | *1931* | *1929* | *1930* | *1931* |
| Uruguay . | | 52,138 | 48,716 | | 31,465 | 23,190 |
| Argentine | | 78,802 | 220,441 | | 125,796 | 136,371 |
| Australia . | | 97,688 | 171,229 | | 92,706 | 105,310 |
| N. Zealand | | 78,226 | 143,971 | | 162,028 | 241,071 |
| Others . | | 4,504 | — | | 5,024 | 211 |
| Total . | 358,704 | 311,358 | 584,357 | 420,387 | 417,019 | 506,153 |

IMPORTS OF CHILLED AND FROZEN MUTTON AND LAMB (*in* [redacted] *tons*)

| | *1913* | *1929* | *1930* |
|---|---|---|---|
| Argentine . | 50,600 | 77,300 | 73,600 |
| Australia . | 83,300 | 29,700 | 40,600 |
| New Zealand | 110,000 | 137,300 | 164,700 |
| Others . | 16,300 | 38,400 | 42,400 |
| Total . | 260,200 | 282,700 | 320,300 |

(6) Professor White examined the situation carefully in 1929, and came to the conclusion that prospects for sheep farming (and more especially hill sheep) were reasonably good, in view of the decline in the sheep population of these islands, particularly if we modified our practices in some ways and paid more attention to fat lamb.

(7) Sir. William Haldane on the other hand is pessimistic about sheep prospects. Amongst the occasions in which he wrote and spoke on Cattle Supplies and Prices in 1929, he made several references to sheep. He pointed out that the sheep population in the United States was increasing rapidly, 11,000,000 since 1922, 7½ of these (a 19 per cent. increase) being in the last three years; so that their imports would fall. The sheep population in Australia and New Zealand had increased by 7,000,000 during the last year (1928), and in Canada, by 1,000,000 since 1925. Irish sheep had increased by over 700,000

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since 1925. He concluded that "it would seem likely therefore that markets will be very fully supplied with mutton and lamb in the near future" and pointed out that the prices of our imported lamb had been falling for some time.

(8) Feedings stuffs are cheap, but this is of rather secondary importance with grass sheep. The profits of grass farming depend far more on the price of fat stock than on that of feeding stuffs.

GENERAL INDEX NUMBERS

| | *Feeding Stuffs* | *Manures* | *British Wheat* | *Fat Sheep* | *Fat Cattle* | *General Index* | |
|---|---|---|---|---|---|---|---|
| 1921–22 | 152 | 160 | 155 | 190 | 174 | 182 | |
| 1922–23 | 138 | 130 | 132 | 193 | 153 | 159 | |
| 1923–24 | 145 | 118 | 138 | 183 | 152 | 160 | Average prices during 1911–13 taken as 100. |
| 1924–25 | 160 | 115 | 165 | 197 | 151 | 162 | |
| 1925–26 | 128 | 113 | 162 | 160 | 146 | 153 | |
| 1926–27 | 133 | 113 | 157 | 150 | 131 | 147 | |
| 1927–28 | 154 | 110 | 135 | 163 | 135 | 147 | |
| 1928–29 | 147 | 97 | 129 | 155 | 132 | 142 | |
| Jan. 1930 | 96 | 101 | 130 | 167 | 138 | 148 | Average price for each corresponding month 1911-13 taken as 100. |
| Oct. ,, | | | 93 | 162 | 131 | 129 | |
| Nov. ,, | | | 89 | 153 | 128 | 129 | |
| Dec. ,, | | | 83 | 144 | 120 | 126 | |
| Jan. 1931 | 78 | 102 | 76 | 150 | 127 | 130 | |
| Feb. ,, | 77 | 100 | 69 | 137 | 125 | 126 | |

The above table shows the relative prices for sheep and other commodities, taking the 1911-13 prices as 100. Fat sheep are still relatively dearer than fat cattle, and have maintained their price during the last year far better than have feeding stuffs, and even more so than wheat. There was a fall of about ¼d. a lb. between December and January in fat sheep, but this reduction was proportionately smaller than that which occurred in the corresponding period of the base years, with the result that the index number has actually risen.

It is worth studying the present situation in the light of what happened during the depression of the 90's. The cry against imports was equally loud. By 1905 the sheep population reached its lowest level since 1888, while in 1882 it was nearly 5,000,000 less than in 1876. Matthews then wrote that "the cutting down of the breeding flock below the maximum number a farm is fairly able to carry is almost always a sign of financial distress." One cannot help feeling

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that there are considerable chances that history may repeat itself. At very least one does not need to be much of a prophet to forecast heavy falls at next autumn's store lamb sales.

Assuming as we must, that sheep will continue to play an important part in the agriculture of the islands, in fact, a dominant part in many districts, it is of prime importance to consider the requirements of the mutton market. In 1908 Matthews wrote "The other day the writer was discussing with a London salesman, who does a good business in Scotch mutton, the probable effect of the new process of preserving foreign meat on the position of the British producer. He made the startling statement that British meat might be safely ignored because, in London markets, it was virtually a thing of the past," although this may be somewhat exaggerated, it shows that the demand for small lean joints of uniform quality did not arise yesterday. It has been of steadily increasing intensity for over twenty years, and the London demand has, during all this time, been the most extreme in the whole country. The four stone carcase, a sheep weighing less than 70 lb. alive is not too small for it. From the above quotation the position in the London market can scarcely be worse than it was twenty years ago, but it is no better, and it may well become worse there and throughout the other big markets in the country, in the future. New Zealand and other Dominions and countries may do to our sheep industry what Denmark has done to our bacon. They succeed by paying careful attention to what the consumer wants, and by skilful marketing. The organisation of our marketing has begun not a day too soon, for given a sufficient price difference between fresh and frozen mutton, those people who still insist on the fresh, might soon change their tastes.

Reports from markets throughout the country are unanimous in stating that small sheep are most in demand. Some of the big industrial centres such as Birmingham and Leeds like sheep up to 7½ to 8 stone dead, although the price is 1d. to 2d. per lb. less than for 5 to 6 stone sheep, but the demand for sheep heavier than 8½ stone is distinctly weak. The difference in price in favour of small carcases is greater than it was twenty years ago. Current prices do not vary greatly throughout the country and are round about 1s. a lb. for the best class of small mutton, something like 50 per cent. above what it was twenty years ago. Next to mountain sheep, Mashams and Mules, Suffolk crosses are most in demand, and where Oxford crosses used to be supreme Suffolks are now serious rivals. The demand for sheep of more than twelve to fifteen months of age has practically vanished.

With the market requirements steadily changing, the farmer must select his ewe flock and his rams to meet the new conditions,

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remembering that local climatic, soil and other conditions are just as important to-day as ever they were.

The most popular breeds for a ewe flock under present conditions are undoubtedly to be found, as the majority of the papers have emphasised, in the mountains and the hills. Scottish breeds are particular favourites, but this is perhaps not surprising when the number of Scotsmen farming in England is considered. Possibly if farmers from Wales and Cornwall were equally represented we would hear more of the Welsh Mountain, Kerry Hill, Exmoor and other breeds. As it is, many draft Welsh ewes find their way into Midland pastures. Most mountain breeds, however, compare unfavourably with Half-breds as regards twins. Their wool is inferior and its length is a drawback. Unless one has large fields it is almost impossible to keep them from breaking out. They might show better financial returns, however, being so much cheaper to buy in. Kerry Hills compare quite favourably with Half-breds. Recent work at Wye suggests that they are not quite so prolific and do not wear as well. It is the experience of some that they are more liable to foot rot. On the whole perhaps they are slightly smaller, which may not be a disadvantage, and rather more compact.

The Scottish Half-bred is highly popular at present. For years it has been prominent in Scottish agriculture and at the end of last century was being praised to English farmers as the best sheep for tiding them over that period of depression. Its many virtues have already been described, and of these, soundness on the hoof is not the least. It can thrive in most districts in England, apart from the mountains, and might be described as the Dairy Shorthorn of the sheep world. It is comparable, amongst female sheep, to the Large White amongst male pigs. But, having said all this, assuming its superiority in the absence of proof to the contrary, is it really our ideal sheep ? If we really want small mutton should we not have a smaller ewe ? Also this ewe keeps fairly strictly to a definite breeding season, and thirdly, although prolific, it could be more so. Breeding and management should effectively prevent the birth of any singles, as they do in some Border Leicester flocks. Lastly, its high price in the past two or three years has made many farmers doubt if it is the ideal sheep financially.

These last sentences introduce us to a number of problems :

(1) Is it wasteful to use big ewes for producing small mutton ? Science tells us that if one ewe is twice the weight of another, its food requirements, to keep itself alive only, will be not more than about 25 per cent. greater than for the smaller animal. The whole question of size demands careful study, although it may be claimed that on the Sussex Downs it has been settled. Can we produce big

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carcases more cheaply per stone dead weight than we can small ones ? On a given acreage can we produce as much mutton from small sheep as from a smaller number of bigger ones ? If so the gross receipts will be greater, but will the profits ? Some consider that five South Downs are equal in grazing requirements to three of any heavy breed, but so far, farmers with Lowland flocks have not shown much belief in the profitableness of small mutton particularly when their ewes are of fair size ; otherwise more English small mutton, apart from hill sheep would have appeared on the London market. Possibly the price difference in favour of the small carcase is not sufficient to attract farmers. Nevertheless, in their own interests, they should try to find a profitable way of catering for this market, otherwise the overseas producer will completely capture it, and so undermine the future prospects for sheep in many parts of this country.

### The Question of Breeding out of Season

(2) Farmers are recommended to produce more fat lamb, and if possible all the year round. Butchers, particularly in London, complain of the difficulty of obtaining suitable supplies of home mutton from Christmas until the end of March. Some people therefore suggest that we should breed, or select, ewes for ability to breed out of season. It would be valuable to have the observations of practical men on this suggestion. Do they want ewes that will breed all the year round ? If so the Dorset Horns have made surprisingly little progress. A big ewe might be an advantage in this case if it produced two big lambs each time. The strain of two lambings annually, or three in two years, is considerable. Possibly it would be better to have half the flock lambing early in the year and the other half six months or so later. Breeding and selection could eventually bring this about. Expenses of production would undoubtedly increase, but would the receipts justify this development ?

(3) Returning to a problem more immediately practical, in addition to breeding for twins (using twin rams for the production of breeding stock), and attention to details like tail clipping when necessary, how can our methods of management encourage their production ? This brings us to the question of flushing. Opinion is not always in favour of the practice. We are warned against hurried and temporary stimulation, and against doing it one year but not the next. The best investigation on this subject that I have come across was by Dr. Marshall of Cambridge when he was a lecturer at Edinburgh University, but there are still many points on which information is required. Little has been done to follow up his statement of

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problems. Environmental factors are important. Young ewes may respond more to flushing than older ewes which have been poorly kept for years. I have the impression that consistently well-managed flocks are more prolific than others. Why should this year be so favourable to the production of twins? On the other hand ewes may be actually too fat, or, though in good order, going back in condition, and then the number of twins falls at once. This is a subject eminently suited to investigation by some Sheep Recording or Sheep Survey scheme, which would collect the information which must exist in many farmer's heads on these points and would save years of experimental work.

(4) The fourth problem arising out of the consideration of the breeding flock is the question of the cost and method of maintaining a ewe flock. There are three methods:—

(*a*) Keep any sheep that are females—a not uncommon method with some farmers in England. The resulting assortment of breeds and crosses is amazing, but there are people who believe this is a profitable system, and others who have been persuaded to adopt it, possibly with some degree of selection, because of the high price of good breeding sheep. Often the crosses are good mothers and milkers, reasonably prolific, and they suffer little depreciation. This policy may not look well, and it does not help in putting a uniform product on the market, but there are evidently occasions when it is economically justified to the individual farmer for the time being, although it may be laying up trouble for the future. Some day we shall have to face the question of reducing the numbers of distinct breeds, and crosses, in this country.

(*b*) Keep the local breed of sheep.

(*c*) Buy in the breeding flock from a distance. Whether it be from some district in England or Wales or Scotland, a similar set of questions present themselves. At what age should we get our sheep down, to what district should we go, what type and what quality of sheep should we favour? We wonder, too, if we could not breed our own particular fancy at home and save the railway carriage and the breeder's profit.

Considering these questions in the case of the Scottish Half-bred, I doubt if there is really definite information recorded on any of these points at the present time. We find farmers getting their sheep down at all ages from ewe lambs to young ewes,—or draft ewes for a flying flock. Those who purchase young ewes believe they save more by avoiding lambing troubles and losses and a lower percentage of lambs, than is sufficient to pay for the extra cost of young ewes. But it is difficult to pick up this class of sheep in the market and one must have a private source of supply. Then some farmers

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believe that the further north they go for their sheep the better, and that it is well worth the extra carriage. Others are content to stop as soon as they cross the Border, provided they know they are safe from scrapie. Some farmers again believe that the best can never be too good and that the dearest sheep will prove the cheapest in the long run. Results at Wye last year confirmed this view. There seems to be a distinct preference for that type of Half-bred which resembles the Border Leicester rather than the Cheviot.

If we are to try to maintain our own Half-bred flocks without purchasing from Scotland, we must be sure that we can produce sheep equal in every way—for breeding, milking, hardiness and health —to those produced in their native country. Some believe it is as necessary to go North for sheep as it is for seed potatoes. If we can buy in Scotland at a reasonable rate it may well be best; because, to produce our own ewe lambs we must have two ewe flocks, one of these being Cheviots (bought in from Scotland every four or five years), and we must produce twice as many Half-bred lambs as we want, and find a market for the unwanted wethers from amongst them,—unless we use a Half-bred ram and go in for "pure" Half-breds. Of course, if we want to modify the breed in any way to make it more suitable for modern requirements then we must do this on our own farms.

Having established a flock of ewes, one wonders how to get the most out of it. It is a practice in some cases to put the ram out with ewe lambs, so as to get a crop of lambs from some of them when they are little more than a year old. Good strong ewe lambs combined with skilled management and late lambing are essential for the success of this practice, and success is more likely with early Down ewe lambs than with later Half-bred and hill ewe lambs. If, on the other hand, we try to prolong the breeding life of a ewe, we are up against the fact that, as some one put it in the discussion following Professor White's paper, we have as yet no sheep dentists to provide false teeth for old ewes.

This brings us to the problem of the disposal of old ewes. There are three possibilities (*a*) to sell them as draft ewes, (*b*) to keep them as long as possible and then sell them as they stand for what they will fetch, and (*c*) to fatten them and then sell them. It is difficult to say which is best.

An important point in sheep husbandry, on which it is also difficult to form a decided opinion is the question whether it is better to go in for intensive fat lamb production or for the slower production of fat tegs, or yet again, for store lambs. Apart from other considerations the former is more costly and the risk of losses by death greater. Certain breeds are more suitable for the one than the other,

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and much depends on the state of the markets. A combination of the two systems is a general practice, pushing on the biggest and best lambs as quickly as possible.

If we are going in for the winter fattening of sheep (a recent Wye bulletin deals instructively with the cost accounts of this practice), we must grow a supply of winter food for them. On this subject we still have some doubts as to the relative merits of different crops. Is any particular sequence of roots and winter green crops better than another? How is the sheep's progress affected by changing from a crop like kale to swedes or mangels? It is sometimes believed to be unwise to change fattening sheep off rape onto something else. There is little doubt as to the value of kale up to Christmas, but more doubt as to its value thereafter. Thousand headed kale, or rape kale, specially if sown in the late summer is preferable, but can we beat mangels? An acre of a 30-ton crop will keep 140 sheep for a month or more, and it is generally possible to squeeze a few acres of mangels into the cropping programme. They are not really a dear crop if they can be dealt with by one's existing staff. Then there are sugar beet tops, and silage of various sorts and beet pulp. How do sheep fare if green food and roots becomes exhausted and they have to be finished off on pulp? Swedes would appear to be favoured by sheep-feeders since although the yield is generally miserable in this part of the country, they persist in growing them. Rye is particularly useful for ewes and lambs during March and April, but what is its value to fattening sheep, and how inferior in feeding value is the second grazing of the rye to the first?

If we are satisfied with the policy of fattening sheep during the winter it may be of some importance to keep them on the arable land, either on temporary grass or the root break, so as to avoid "oversheeping" the grassland. This amount of arable sheep farming fits in well with grass sheep. The labour cost of folding a winter-green crop, specially if nets are used, is insignificant compared with the cost of carting the crop off and bringing back dung, and the practice is surely justified if followed by a valuable cash crop like potatoes. If there is a tendency for the sheep to jump, 3½ feet netting will generally check it, and folding with a big run back saves considerable labour. Some believe that sheep fatten more readily on a small area of ground as they have less liberty of movement.

This question of the "oversheeping" of grassland has been frequently mentioned to-day. It is a trouble the sheep farmer is always scheming to avoid, and several methods of doing this have been described by previous speakers. Some of us must have been surprised at the ease with which Mr. Hill can avoid this danger, and it is obvious to anyone who knows how his sheep thrive, that he does

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avoid it. I doubt whether all the causes of "sheep-sick" pastures are understood. Undoubtedly heavy infestation with sheep parasites is an important factor. It is said to be less prevalent on "strong" than on "weak" land. It is up to science to cure this trouble and enable farmers to run sheep on their grassland as thickly and frequently as ever they wish to. It is noteworthy that the condition is seldom heard of in Scotland, possibly another advantage of alternate husbandry, though no doubt partly due to the sale of the lambs as stores or to their transference to the root break for fattening, while the permanent sheep grazings are on the poorer classes of land and are therefore only lightly stocked.

If one wishes to fatten sheep during the winter and keep them off both arable and grassland, it may just be worth mentioning the old practice of indoor feeding which we never hear of nowadays. Those who tried it, and erected sheds for the purpose, invariably wrote highly in praise of it. To-day, in many cases, it would prove a cheaper method of making dung than cattle-feeding, but that is not saying much, and possibly the Adco process is still cheaper.

Akin to the problem of sheep sick pastures, but distinct from it, is that of "stale keep." It is well known how sheep thrive on the aftermath of a hay crop, or on a fresh clean pasture, compared with on land which they have recently grazed; how, too, they prefer young newly established grassland and temporary pastures to older grass however well it has been managed. What are the reasons for these facts, and can we discover means of making old grassland as attractive and valuable as any of the other classes? Possibly the species of grass present have something to do with this, *e.g.* the presence of palatable Italian Rye-grass in new pastures, but then many of the grasses of old pastures are very palatable to sheep, *e.g.* young cocksfoot shoots. A light dressing of lime or potash or phosphate might bring the palatability of the second grazing up to that of the first, as well as being essential for the mineral needs of breeding and growing stock.

Mixing the grazing stock introduces other problems. When should cattle and sheep graze together and when should one of them follow the other? Practical men are not unanimous in their answers to these questions.

I have said nothing about actual rations for sheep. More research work has been done on this subject than on any other sheep problem, with the possible exception of research into sheep diseases which has been of great value to the farmer. There are still questions to answer, however. Why, for instance, are some farmers so fond of dried grains while others condemn them as useless dust? Are lambs best fed separately in creeps, or can they be equally well fed through

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the ewe ? What is the minimum quantity of roots upon which we can successfully fatten sheep ? Cattle have received all the attention on this point, although much useful information is to be found in a summary of a large number of sheep-feeding experiments, which appeared in the Highland and Agricultural Society's Transactions in 1910. Where practical men disagree it is frequently because of differences in management, which may obscure the effect of bad rations or reduce the effect of good ones.

# HOW I MANAGE MY FLOCK

By Major V. S. BLAND

*Marlborough, Wiltshire*

First of all I should like to thank Sir John Russell for the honour he has conferred on me by asking me to read a Paper here to-day. I feel I am quite unworthy of the task which has been given me. I will, however, do my best and if I manage to make one or two observations in the course of this paper which will be of assistance to those engaged in the sheep industry I shall be very satisfied and feel that I have not wasted your time.

The subject which has been allotted to me is " How I manage my Flock." At first sight this sounds a simple straightforward subject, but my difficulty arises in that I feel I shall be unable to tell you anything you do not already know. However, scarcely any two holdings are alike and what we do in one county of this small but varied island might be quite against the ideas of flockmasters of other counties to mine, namely Wiltshire, but I trust there may be useful points which might be well adapted to other counties.

I farm on the Wiltshire Downs 600 feet above sea-level and in a very exposed and rather late district of North Wilts. Some of the land is very hilly and the soil consists of strong to light land close to the chalk. The various farms which all join consist of about 2200 acres divided roughly at the present time as follows. One-third arable land 700 acres, not quite one-third Downs 640 acres and rather more than one-third grassland 870 acres, of which 370 acres are permanent grass and 500 acres is temporary pasture, *i.e.* arable land laid down to grass these last few years owing to the depression in cereal prices. A great deal of it on the hills, about 330 acres will probably never come back to the plough if my system can prevent it from becoming sheep-sick.

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