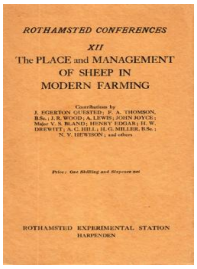
The Place and Management of Sheep in Modern Farming

Full Table of Content



Default Title

Rothamsted Research

Rothamsted Research (1932) *Default Title ;* The Place And Management Of Sheep In Modern Farming, pp 0 - 70 **- DOI: https://doi.org/10.23637/ERADOC-1-205**

ROTHAMSTED CONFERENCES

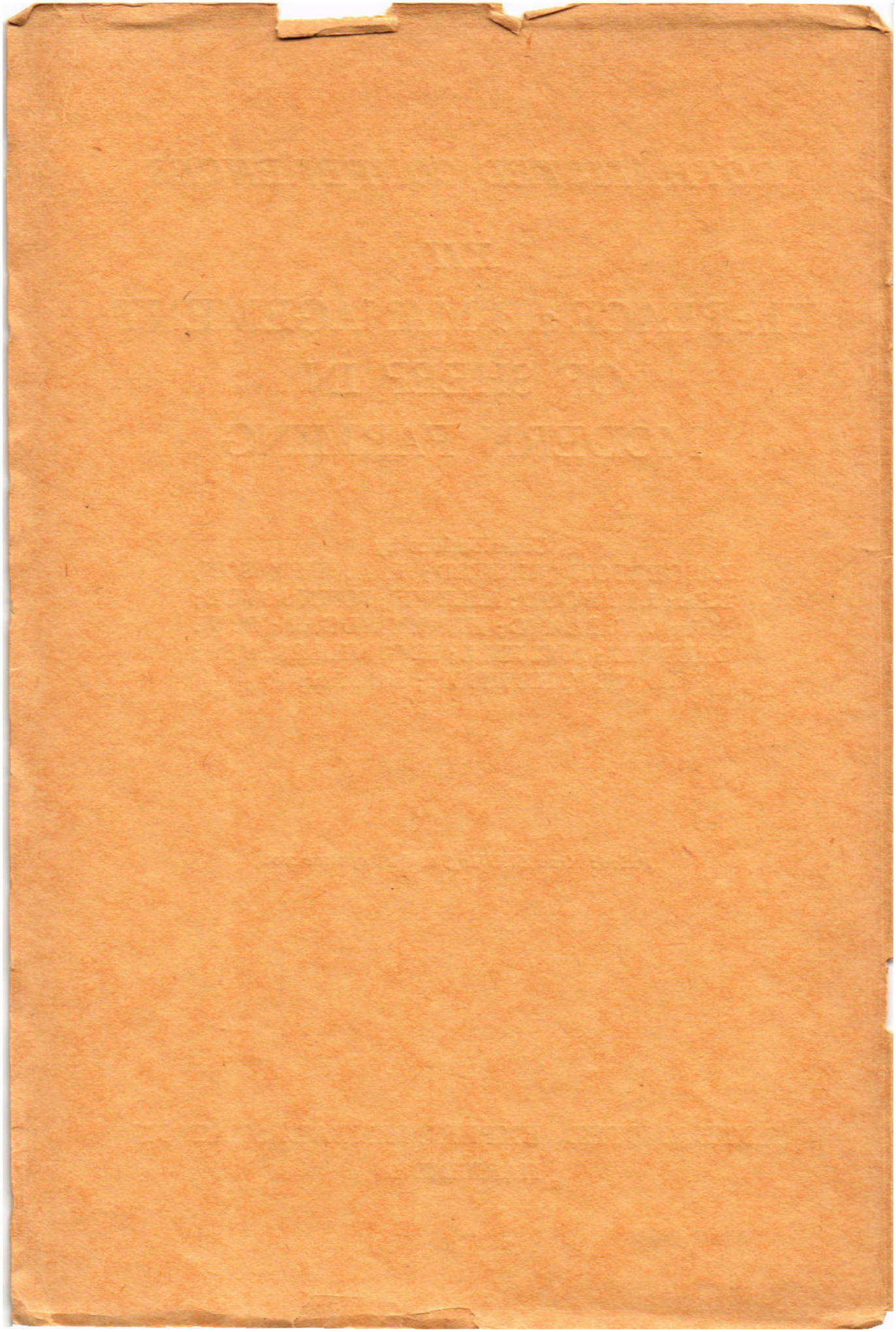
XII

The PLACE and MANAGEMENT OF SHEEP IN MODERN FARMING

Contributions by
J. EGERTON QUESTED; F. A. THOMSON, B.Sc.; J. R. WOOD; A. LEWIS; JOHN JOYCE; Major V. S. BLAND; HENRY EDGAR; H. W. DREWITT; A. C. HILL; H. G. MILLER, B.Sc.; N. V. HEWISON; and others

Price: One Shilling and Sixpence net

ROTHAMSTED EXPERIMENTAL STATION
HARPENDEN



XII.

THE PLACE AND MANAGEMENT OF SHEEP IN MODERN FARMING

https://doi.org/10.23637/ERADOC-1-205

ROTHAMSTED CONFERENCES

THE booklets in this series contain the papers and discussions at the conferences held from time to time at Rothamsted on present-day problems in crop production. The papers are written by well-known experts and discussed by some of the best practical farmers. Published by Messrs. Ernest Benn Ltd.

Obtainable from the Secretary, Rothamsted Experimental Station, Harpenden, Herts.

THE GROWING OF LUCERNE

With contributions by SIR JOHN RUSSELL, F.R.S.; H. G. THORNTON, B.A.; A. CUNNINGHAM, B.Sc.; J. MACKINTOSH, N.D.A., N.D.D.; R. D. WILLIAMS, M.Sc.

Price 1s. 6d. net

THE CULTURE AND MANURING OF FODDER CROPS

With contributions by SIR JOHN RUSSELL, F.R.S.; W. A. C. CARR, M.C.; N.D.A.; J. C. BROWN, P.A.S.I.; C. HEIGHAM, M.A.

Price 1s. 6d. net

GREEN MANURING

With contributions by H. DREWITT; H. UPCHER; H. INSKIP; H. J. PAGE, M.B.E., B.Sc., A.I.C.; J. A. VOELCKER, M.A., PH.D.; W. BRUCE, B.Sc.; H. MATTINSON, B.Sc.; A. W. OLDERSHAW, B.Sc.

Price 2s. net

THE CULTURE AND MANURING OF SUGAR-BEET

With contributions by J. M. VAN BOMMEL VAN VLOTEN; T. G. FOWLER; C. HEIGHAM, M.A.; H. J. PAGE, B.Sc., A.I.C.; I. J. SCHAPRINGER; C. J. CLARKE; R. N. DOWLING, N.D.A., P.A.S.I

Price 2s. 6d. net

THE ART AND SCIENCE OF CULTIVATION

With contributions by SIR E. J. RUSSELL, D.Sc., F.R.S.; B. A. KEEN, D.Sc., F.INST.P.; H. DREWITT; J. STEEL; J. H. SPILMAN; J. JOYCE; C. HEIGHAM, M.A.

Price 2s. net

POWER FOR CULTIVATION AND HAULAGE ON THE FARM

With contributions by B. A. KEEN, D.Sc., F.INST.P.; H. C. BURFORD, M.I.A.E., M.I.MECH.E.; G. W. WATSON, M.I.A.E., M.I.MECH.E.; E. PORTER, B.Sc. (AGRIC.); R. D. MOZER; R. BORLASE MATTHEWS, WH.EX., M.I.E.E.

Price 2s. 6d. net

MALTING BARLEY

With contributions by ROBERT V. REID; H. HUNTER, D.Sc.; JAMES STEWART; JOHN JOYCE; G. H. NEVILE; SIR JOHN RUSSELL, D.Sc., F.R.S.; B. A. KEEN, D.Sc., F.INST.P.

Price 2s. 6d. net

RECENT CHANGES IN SYSTEMS OF HUSBANDRY IN ENGLAND

With contributions by SIR JOHN RUSSELL, D.Sc., F.R.S.; C. S. ORWIN, M.A.; F. RAYNS, M.A.; COL. G. H. LONG; JOHN PORTER, B.Sc., N.D.A.; J. W. REID, N.D.A.; W. A. STEWART, M.A.; R. N. DOWLING, N.D.A.; H. DREWITT; J. C. WALLACE, M.A.; W. B. MERCER, B.Sc.; H. V. TAYLOR, O.B.E., B.Sc.

Price 2s. 6d. net

THE HERTFORDSHIRE AGRICULTURAL SITUATION

With contributions by SIR JOHN RUSSELL, D.Sc., F.R.S.; R. J. THOMPSON, C.B., O.B.E.; J. HUNTER-SMITH, B.Sc.; G. DALLAS; A. W. STREET, C.I.E., M.C.; R. R. ENFIELD; F. J. PREWETT, M.A.; D. CRAWFORD

Price 2s. net

THE GROWTH OF CHEAPER WINTER FOOD FOR LIVE STOCK

With contributions by SIR JOHN RUSSELL, D.Sc., F.R.S.; J. G. STEWART; DR. H. E. ANNETT; W. BRUNTON; CAPTAIN R. STALLARD; HARALD FABER; W. O. WATT; J. R. KEEBLE; T. C. WARD; W. A. C. CARR, M.C., N.D.A.

Price 2s. 6d. net

THE MAKING OF NEW GRASSLAND: EXPERIENCES OF PRACTICAL FARMERS

With contributions by the EARL DE LA WARR; SIR JOHN RUSSELL, D.Sc., F.R.S.; SIR DANIEL HALL, F.R.S.; J. CRUICKSHANK; W. M. FINDLAY, N.D.A.; A. McARTHUR; MAJOR J. KEITH; J. ALSTON; W. S. MANSFIELD, M.A.; C. H. GARDNER; CAPTAIN A. R. McDOUGAL; M. JONES.

Price 2s. 6d. net

https://doi.org/10.23637/ERADOC-1-205

THE PLACE AND MANAGEMENT OF SHEEP IN MODERN FARMING

BEING THE REPORT OF A CONFERENCE HELD AT ROTHAMSTED ON MARCH 24TH 1931 UNDER THE CHAIRMANSHIP OF

J. EGERTON QUESTED, ESQ.

(Chairman of the Farmers' Club)

With Contributions by

J. EGERTON QUESTED; F. A. THOMSON, B.Sc.; J. R. WOOD; A. LEWIS; JOHN JOYCE; MAJOR V. S. BLAND; HENRY EDGAR; H. W. DREWITT; A. C. HILL; H. G. MILLER, B.Sc.; N. V. HEWISON; AND OTHERS

ROTHAMSTED EXPERIMENTAL STATION
HARPENDEN

PRINTED IN GREAT BRITAIN BY THE ABERDEEN UNIVERSITY PRESS, ABERDEEN

https://doi.org/10.23637/ERADOC-1-205

CONTENTS

https://doi.org/10.23637/ERADOC-1-205

NAMES OF SHEEP

	Male not Castrated.	*Male Castrated.*	*Female.*
Before weaning lamb	Tup or ram-lamb	Wether-lamb Hogg-lamb	Ewe-lamb
After weaning but before shearing	Tup-hogg Hogg-ram	Wether-hogg Teg Hoggett	Ewe-hogg Ewe-teg
After first shearing	Young sheep tup	Dinmont [3]	Gimmer [1] Theave [2]
After second shearing	Ram		
Bearing lamb			Ewe
Not bearing lamb :			
(*a*) Sterile			Yeld ewe Barren gimmer
(*b*) Not put to ram			Yeld gimmer [4]

[1] Also written " gimber " in Lincoln, North Lincoln and South-West Lincoln. Chiefly a Midland and North-Country term, but also used in Norfolk.

[2] Also spelt " thaive," " thave " ; in general use in Midlands and Southern England.

[3] Chiefly North Country—also spelt " dimment," " dimmond," " dinman."

[4] Very scattered in its use.

https://doi.org/10.23637/ERADOC-1-205

CHAIRMAN'S OPENING REMARKS

J. EGERTON QUESTED
Chairman

I HAVE been farming and grazing in the south-east corner of the County of Kent for forty years, and my flock consists of about 2500 pedigree Romney Marsh ewes. These ewes are all individually numbered and pedigrees have been kept since 1895 so that I can carry the pedigree of any sheep that I have bred since that date through thirty-six years.

The system that I adopt is that when the lamb is born the mother's number is put on one side in paint figures and the sire's number on the other side. These lambs are all tattooed in the ear with a number within about three to four weeks from birth. The sires, dams, and lambs numbers are all put into a small book which is copied afterwards into the large pedigree flock book.

I have exported specimens of my sheep to practically all countries in the world, but the majority have been taken by South America which is our best market. In South America the Romney has gone ahead by leaps and bounds and I think I might say has become more popular than any other breed of sheep in the world through its natural characteristics of foraging and grazing. For instance, if a flock of 100 Romney sheep are turned into a 20-acre field within a few minutes you will see them dotted all over the field. On the other hand, if a flock of 100 Down sheep are turned out into the same field, you will see them moving in a mob and hardly separating at all. This of course makes a material difference to a grazing sheep, if they are distributed evenly they do not soil the pasture so quickly.

The home of the Romney sheep is of course in Romney Marsh, a big flat stretch of land which has been reclaimed from the sea. In Hasted's " History of Kent " it is stated that it was a grant of King Offa to Archbishop Janibert about the year A.D. 795. It was then known as Rommonne. It is said that the breed of Romney Marsh sheep has probably the longest traceable history of any in the country. Under hard conditions of flood and storm, fighting for existence against the forces of nature, the Romney has found its own salvation,

https://doi.org/10.23637/ERADOC-1-205 *pp 10*

and by the survival of the fittest has gained that strong constitution which is one of its principal characteristics to-day. Hence its popularity in the big continent of South America.

There are a good many thousands of Romney ewes used for crossing purposes, principally with the Southdown; but also a good many with Hampshires and Suffolk, and it is claimed that the cross of Romney Southdown produces a lamb which thrives and fattens more quickly on grass than any other cross. I myself have had lambs killed in the month of August that were born in March-April and fed on nothing else but grass, weighing up to 56 lb. per carcase and the quality of the flesh has no superior.

In the autumn there are thousands of these lambs bought for exportation to other counties, in the Midlands, to be fatted off. This has become quite an event during the month of August, sheep have very big sales up to 15,000 to 20,000, and buyers come from about twenty outside counties to purchase them.

So far as the grazing of the Romney Marsh is concerned, a great many lambs are put out to keep there, but many go to Surrey, Sussex Buckinghamshire, etc. about the beginning of August; and are brought back in the following April for grazing purposes and then finished off on the rich grazing lands without ever seeing an ounce of artificial food.

The Romney Marsh is unlike most districts in England, for its pastures are never free from sheep and probably have not been for centuries. My own land carries, in the winter, two to two and a half per acre and that is gradually increased as the grass grows in the spring up to eight, nine, or even ten sheep to the acre. In a grassy summer probably I should want half a bullock to the acre to eat off the surplus grass. This will give one a little idea as to the richness of the soil whose equal I claim never to have seen in any part of the world.

The one drawback to the Romney sheep to-day is that its joints are rather big, and it is well known that the public have been educated to small mutton. This of course has militated very much against the Romney sheep, and we find that our principal trade for large wethers, which weigh from 90 to 120 lb. per carcase, is in Yorkshire where they appear to appreciate the quality of mutton and do not mind the size of the joints.

I think I have said enough to make my listeners interested in the Romney Marsh land and the Romney breed of sheep. The latter I claim to be the kindliest, hardiest and best stock master's friend in the world.

https://doi.org/10.23637/ERADOC-1-205

THE PLACE OF SHEEP IN MODERN FARMING

By F. A. THOMSON

Live Stock Inspector, Department of Agriculture for Scotland

The extraordinary number of acres formerly under cultivation in both England and Scotland which have ceased to be ploughed and which have been laid down to pasture, will entirely change the conditions of modern farming and in these changing conditions sheep, of necessity, must play an important part. It may be of interest to note that in Scotland alone the decrease in arable land, although only 1·1 per cent. of the total acreage, amounts to over 33,000 acres, and the increase in the sheep population in the corresponding period shows an increase of over 94,000. Of this increase 93 per cent. of the total represents the increase in ewe stock and in sheep under one year old. The poor return from cereals, the cost of producing the said cereals, the cost of growing roots, has resulted in many acres of the poorer land being left in grass for which stock has to be provided. In every county one finds that the plough has ceased to be used and to meet these changing conditions, one has to look for the most profitable animal to compensate for the loss in arable farming. We naturally must consider whether we can look to better returns from cattle or from sheep, and in the minds of most we find, we must consider the question of breeding and feeding sheep rather than in the possible profit from cattle grazing. Unless we live in an area in which cattle can be out wintered without extra or additional feeding we will have no option but to graze our winter pasture with sheep. We may have to summer graze these same pastures with cattle, but to me there will be little profit in this as we will have too many buyers all desiring cattle in the first of the year and all coming back into the market at the same time. An artificial demand is being created at one time and an over-supply at another.

The question then before us is: "what class of sheep stock is most suited to our individual requirements and from what source ought we to purchase." Great care has to be exercised in the selection of sheep stocks, far more so than in the selection of other farm stock, care that the animals are taken from poorer soils to better soils, care that the land from which the animals come is healthy and not subject to disease peculiar to sheep, and that the change in conditions will result in monetary advantage to the purchaser. One

https://doi.org/10.23637/ERADOC-1-205 *pp 12*

must also bear in mind that certain land may not be good feeding land although good breeding land and *vice versa*. We must keep in view that our main object is that the ultimate test of our selection must be the usefulness of the carcase to the butcher and through him to the public. The days of the heavy weight bullock has gone and so have the days of the greasy or fatty carcase of sheep. The demand for a carcase full of meat with only a small percentage of fat is now what we must try and achieve or else we must accept a corresponding reduction in the price of our mutton. To what breed then must we confine ourselves if we desire to put before the public what they want and in so doing, bring to ourselves the profit we so much desire and require at the present time.

Are we to confine ourselves to pure bred sheep or should we consider the question of the cross of two pure breeds which will suit our farms. The supply of pure bred sheep required in any area is limited, and the breeding of these should then be better left to those whose farms are especially adapted to this purpose. There is a demand and there will be a demand for a cross which supplies a carcase not too heavy and a sheep which will be easily fed.

In bygone days it is recorded that the Border sheep breeders went to England to buy the improved Bakewell Leicesters, and further east to Lincoln to get pure bred Lincoln tups to mate with the sheep of the Cheviot Hills, and at a more recent date we have been indebted to the breeders of the Down breeds for sires to be used in crossing Scotch ewes for the production of early fat lambs.

I should like to refer to the chief breeds of sheep in Scotland which are and will be a factor in the " back to grass " movement of the present day. First of all we have that great improver of other breeds, that sire which imparts to his progeny, when used in crossing, all his good points and omits all his defects, I mean the Border Leicester. As a breed by themselves they are too much inclined to put on useless fat and are of a weight not much in demand, but when used as a cross they are exactly what is wanted. On our two mountain breeds—the Blackface and the Cheviot—they produce ideal sheep.

The hardy Blackface sheep of our heather hills, living at an altitude where they have to withstand severe weather conditions and have to live on land where other breeds of sheep would have a poor existence or die, are only fed with other foods, than what they gather, for themselves, when the ground is snow-bound. The existence of Blackface sheep and heather go together. As their name implies these sheep have black faces or may be black and white, are horned and have been endowed by nature with coats or fleeces suitable to the climate in which they have to live. The wool is long in the

https://doi.org/10.23637/ERADOC-1-205

fibre and is such that rain does not easily penetrate, as it can do in other kinds of fleeces. On the higher hills a proportion of the ewe lambs are kept to make up the ewe stock, but the wether lambs and the rest of the ewe lambs find their way to the open market. If these wether lambs are put on to fairly good arable land they put on flesh rapidly and come to the market in light carcases of 25 to 40 lb. for which there is a ready demand. On the lower ground where Blackface ewes are kept they are usually crossed by a Border Leicester tup and we have a cross which in Scotland we call "greyfaces"—they would resemble your mules. These animals have usually black and white, or brown and white or white faces, may have small scurs or horns, have better wool than Blackfaces, commanding more money, have deep well sprung ribs, good gigots, are hardy and being from land either at a fair altitude or poorish land—once arable—will, when brought to more congenial conditions, prove good "doers" and put on mutton rapidly on good keep. It should be kept in mind that lambing does not usually start in these flocks till April, and that in August or September when these lambs are sold they are just off their mothers and are at an age when they can adapt themselves to a change in conditions and so improve rapidly. Again, if it be our desire to carry them on as store lambs they can be wintered on grass land, and require no artificial feeding except in time of snow. The carcase weight of these are when ten to twelve months old round about 55 to 60 lb. I can thoroughly recommend those sheep to those desiring a hogg or tegg with a good carcase not over fat and a sheep which can be sold at any time of the year. The purchase of these in forward condition by anyone desiring to have them for short keep cannot be too strongly advocated. Before we pass to other breeds I should like to say, for a farmer farming poorish or thin land, that the ewes usually cast from the hill at five or six years old will provide excellent stock to cross with a Border Leicester or similar tup. Do not attempt to cross them with a tup of certain of the Down breed as they appear to be too far apart and the cross resulting, in my experince, was disappointing, too many being nondescript, of which one would not be proud in any market.

The other mountain breed of sheep in Scotland namely the Cheviot may be said to be of two types, those bred in the Cheviot Hills and those bred in the extreme north of Scotland, in Caithness and Sutherland. It is not for me to go into the way in which these have been bred, but suffice it to say that they have the more important points in common and suit the land on which they have been bred. They have white faces, black muzzles, sharp eyes in their heads, erect ears, good wool, well-sprung ribs, good shoulders, and good in their gigots. Their wool is very much finer than the Black faced

https://doi.org/10.23637/ERADOC-1-205

sheep and commands a better price. From the north of Scotland a considerable number of Cheviot lambs go to the north of England counties to be fed off. They are easily fed and finished. The same applies to this breed as applied to the Blackfaces—they are cast on the hill, at a certain age and if these are put on to good low ground, crossed with a Black Leicester or similar ram will produce great lambs.

Then we come to a breed which has increased in popularity in recent years. These are the first cross between a Cheviot ewe and a Border Leicester ram. They are known as Half-breds. It has also been a common practice to cross the Half-bred so produced with Half-bred with good results. This has often been the custom in districts where the land was considered too good for Cheviots and not good enough for Border Leicesters. Opinion differs as to which are the better sheep, but this is a point we need not enlarge on. Half-breds are undoubtedly valuable animals. They have the hardy constitution of the Cheviot, with a better or closer fleece than the Border Leicester allowing them to withstand colder climatic conditions. They produce a considerable weight of wool, grow to a big size, are long in their backs, have bold heads, and are very productive. On the semi-arable farms of the south of Scotland they are the mainstay of farming, are often crossed by a Border Leicester again to produce what are known as three-part-bred sheep. They are mostly reared on low ground and are often fattened on the farms on which they are born.

The place of sheep therefore in modern farming depends entirely on the class of land we farm, its altitude and its suitability in other respects for carrying sheep. If one lives in a favoured district both as regards climate and market and desires to meet that market, one will undoubtedly consider the early fat lamb trade. For this purpose I do not think anything can beat the Half-bred ewe of Scotland when crossed with a Suffolk or Oxford ram. You have then in this cross a mixture of Cheviot, Border Leicester and Suffolk or Oxford blood. At the same time, I think that if a proportion of the lambs are to be carried over beyond the fat lamb trade and to be carried to the hogg or teg stage, one will be equally as well with an Oxford tup.

If one desires to cross two pure bred sheep for this same purpose I think the best cross is the cross between a Down breed and the Border Leicester. This can be used either way, but my own experience has been that the better sheep as lambs have been got when the ewe has been of the Suffolk breed. The ewes are fully better mothers, are better milkers than the other breed. This Half-bred cross is your sheep on good rich land where there is an abundance of grass. They cannot be recommended for poor soils. For land not so good

https://doi.org/10.23637/ERADOC-1-205

as the land on which Half-breds will do the breed to use is the greyface which I have referred to as the progeny of the Blackface ewe and the Border Leicester ram. You will also have equally good results from the pure Cheviot ewe used with a Down breed, say the Oxford or the Suffolk. The greyfaced sheep having a blend of the mountain Blackface blood in their veins are not so heavy feeders as the Half-bred sheep and will therefore do on land hardly in the same condition as that of your finest pastures. Half-bred ewes are very prolific and with care they will rear some 175 per cent. of lambs. The lambs from the greyfaced sheep are hardly so numerous, but the mothers are good nurses and do well with what are born producing a slightly better mutton—at least it is considered so by some—than the Half-bred. It has been considered by some that the risks in lambing have been greater when a tup of the Down breed has been used than where others have been the sire, but with ordinary care there is, to my mind, really nothing in this.

If, however, the intention of the English farmer is to feed, rather than breed, then he can find from Scotland what he requires whether it be for high or low ground. If he desires a hardy type to carry through for some time, to sell as stores, he can always get a useful selection of Blackface sheep or Cheviot for slightly better pasture. I do not see, however, what could be more profitable to anyone than buying the Scottish hill ewes, cast at the usual ages, and putting them on better pasture than they have been accustomed to and rearing two or three crops of lambs from them. For the really good feeding ground the wether lambs from the Cheviot-Border Leicester cross or those of the Blackface-Border Leicester cross are unsurpassed.

One cannot too strongly impress on those who intend to purchase sheep from a district where the flocks are not too well known to them, that care must be exercised and advice should be sought from those who know that area. As in every other country, we have areas not so good as others, and we have areas because of their goodness that to remove sheep from them to poor soils would be fatal.

In conclusion, we cannot get away from the fact that the place of sheep in modern farming was never so important as at the present time, for it has become necessary to stock large areas which formerly did not require to be stocked, each year, and to dispose of the herbage from this land successfully there is no better way than to graze it with sheep and sheep of the best kind to yield the largest revenue possible; as revenue from this land, as arable, is now unknown.

https://doi.org/10.23637/ERADOC-1-205

THE PLACE OF SHEEP IN MODERN FARMING

From the point of view of Northumberland and Scottish Borders

By J. R. WOOD
Cornhill, Northumberland

From the days of enclosure of commons; the laying-out and developing of the farms in the eighteenth century; and introduction of turnips and clovers in the same period; the demand for food caused by the industrial development of England and by the European Wars of the eighteenth and nineteenth centuries; we find that *mixed farming*, as distinct from cereal growing, grass farming, or production of any specialised crop, *has been* universal in the Scottish Borders. Because of its geographical position, being somewhat of a buffer state between two warlike countries, England and Scotland, the Border country remained almost undeveloped until the end of the seventeenth century, or nearly 100 years after the union of the countries under one crowned head. When being developed, therefore, advantage was taken of the experience and knowledge already gained by the Midlands and South of England, where agriculture developed and advanced after the time of the Wars of the Roses 200 years before. That experience demonstrated and fixed the importance of rotation of crops, and of dead fallowing at least one year in a rotation to clear the land of weeds, and to renew the soil to grow cereal crops.

The introduction of turnips about 1650 brought a crop that could be grown on the land at the same time as it was being cleaned and renewed.

In 1650, Sir Richard Weston first attempted to explain the cultivation of turnips; and in the same year Hartlib urged the adoption of roots and the folding of sheep after the Flanders manner as a means of improving sandy common. At the same time Hartlib advocated the use of clovers. In 1669 Worlidge urged turnips on farmers; and in 1682 Houghton says, "some in Essex have their fallows after turnips which feed their sheep in winter, by which means their land is dunged as if it had been folded; and those turnips are a very excellent improvement."

Much as farming methods have advanced and developed during

https://doi.org/10.23637/ERADOC-1-205

the 300 years since those pioneers advocated their new plants and new ideas the soundness of their work is proved by the principles they adopted being still the principles underlying all good farming to-day.

Doubtless from time immemorial sheep have been indigenous to the Island of Great Britain. Wool, whether in the raw state or manufactured, has always been a very large and important item of commerce. Even to-day very large quantities of raw wool are exported ; and amongst our customers we find U.S.A., Japan, Greece, Italy, France, Czechoslovakia, Austria, Germany, Holland and Belgium. Home-grown wool thus forms a very large and important item of export. The sheep is the only animal (except the Angora rabbit) that produces wool. Unfortunately at the moment wool is out of fashion in favour of silk. Formerly three sheep were required to clothe a woman. Now two silk worms do the job. In more recent years, too, mutton has become one of our most favourite and important foods ; and along with the value of the fleece it makes the sheep the most important and valuable of our farm animals. Sheep being indigenous it was comparatively easy to develop them and make them useful. Even so it required geniuses like Robert Bakewell of Dishley, the Culleys of Northumberland, and Robson, who developed the Cheviot, to do the work ; and they did it on their own lines, without any modern science or Mendelism to help them.

Although the underlying principles of farming are the same now as they have always been, nevertheless we are compelled by stress of circumstances, foreign competition, changing fashions and tastes, to vary our methods built on those principles. In growing cereals fallowing is essential, and a green fallow, provided the green crop can be economically used is always better than a dead fallow. In avoiding cereals various methods are followed, of which the most common no doubt is by extending the length of period by temporary leys ; by growing beans, peas and tares ; clovers ; and now in large quantities sugar beet. Those crops excepting beans, and the root of sugar beet are a most excellent feed for sheep, and amongst them with addition of fallow, green crops and roots it is possible to produce continuous feed on one farm for a flock of sheep for twelve months round. To consume these crops I believe the sheep is the animal that can do it the most economically and profitably. From that point of view I should select a breed of sheep that will forage for themselves, if allowed to do so ; unless compelled to do so by climate or soil characteristics I always look upon folding as extravagant. The natural instinct of a sheep is to wander at large and to find its own food ; and whenever possible that characteristic should be made use of. The animal that can live and grow and reproduce without

https://doi.org/10.23637/ERADOC-1-205

any other food except grass is coming very near to the Public Benefactor who made two blades of grass grow where only one grew before.

For profit along with economy I want a sheep that will grow a heavy fleece of the class of wool most continuously in demand at a good price; that will be prolific; and whose progeny will come to maturity quickly and produce the finest quality of mutton on such sized carcase as will give the joint most in demand by the consumer.

We find in the Border country that the sheep which comes nearest to that ideal is the Half-bred—the result of crossing the Border Leicester ram with the Cheviot ewe. The progeny of the Half-bred ram with the Half-bred ewe is also a true Half-bred, and breeds very much truer to type than Mendelism would give us to expect. This Half-bred sheep is to-day in many parts of England spoken of as a Border Leicester; and in Yorkshire as a "Baumshire." It is altogether a remarkable animal, so docile that it will graze and do well between nets and hurdles or in small fields and so naturally independent that it will thrive equally well in large fields or going at large on open commons and even to some extent on moorland. It is also so hardy that it can stand storms of rain, snow or frost; and so adaptable that it changes its characteristics very slightly even when migrated to the warmer climate of the Midlands and South of England. It thus requires a minimum of shepherding. The ewes clip on an average of years and of flocks 6½ lb. each of washed wool of a medium texture and length, and such as is in demand from very many countries of the globe. The hogs will clip 7 to 7¼ lb. of washed wool. The ewes are prolific, and will produce 150 per cent. of lambs every year counting the ewes in October and lambs the following May. They are also very good mothers and if suitably fed are excellent milkers. They cross well with almost all other English breeds of sheep, especially of the Down type. The most popular crosses are the Oxford and the Suffolk Downs. Using probably 65 per cent. of Oxfords and 35 per cent. of Suffolks, but the Suffolks are increasing at expense of the Oxfords. The lambs bred in this way will at ten to twelve weeks old weigh 36 to 40 lb. each, carcase weight; and will produce sheep of 75 to 90 lb. dead weight when full grown and fed fat. The mutton cuts lean and admirably fills the present day public demand.

In mixed farming whether growing cereals with roots, and temporary leys in rotation; or in avoiding cereals as much as possible by extending the period of temporary leys, with peas and tares, sugar beet and all the intricacies of modern rotation the sheep is indispensable.

If the horse teams and breeding ewes on the farm are right it is almost a *sine qua non* that everything else will be right too in its proper

https://doi.org/10.23637/ERADOC-1-205

sequence. The horse teams supply the power for tillage, and that in the most economical form. The ewe flock supplies the lambs and the hogs to consume the grass and green crops in the most economical and profitable way, with minimum of expense and at the same time producing wool and mutton, one an important item of national commerce, the other the most popular item, next to wheat of human food.

I was told by a relative many years ago to remember :—

"Cattle usually pay,
Sheep always do."

In managing a flock of breeding ewes a definite object must be aimed at continuously, and all the time. Plans must be made a year or more ahead, with regard to cropping, methods, and marketing. Each item on the farm must be given its own and its one place of position, and whilst it must not be encroached on by others it must never be allowed to exceed its own sphere.

It will be necessary to make up the flock about September. The number must be considered and decided upon ; and if a standing flock, then it should be composed of such ages as to allow of regular drafting at five or six or seven years old so as not to demand the introduction in any year of an undue proportion of gimmers. If a flying flock, then the question arises as to the age at which the ewes must be bought, having due consideration to the possibility of obtaining a supply each year of the desired age.

Uniformity, too, is most desirable. A maximum of profit cannot be attained where the ewes are of mixed breeds and types. The eye of an artist is required in the building up of a flock. Mating is likely to be arranged in October so that lambing may commence some time in March. The ewes should be divided into suitable lots and put on the tupping fields ten days before the rams are turned out. The pastures selected should be clean but not rough ; and the best form of flushing is where the pasture and the sheep improve together. No trough food will then be necessary. After tupping the ewes should be distributed over as much grass land as possible so that they may have plenty of room.

"The greatest enemy of a sheep is another sheep."

In Northumberland we find in a normal season no food but grass is required until Christmas. Doubtless most parts of the Midlands and North of England will be the same. About Christmas we give either hay *ad lib.* or a small allowance of roots spread out on the pasture ; and increase the allowance as weather and lack of natural

https://doi.org/10.23637/ERADOC-1-205

food may indicate during January. About 1st February the ewes are collected and folded on roots. A sufficiently large part of the field is cleared to make a bare break on which the ewes lie back, and where they feed on hay. The method is to give a limited allowance of roots, the amount being decided by the supply available. With an abundant crop the larger the allowance. The food requirement is made up by hay. For this purpose the most suitable hay is that made from a Wild White mixture of 3rd or 4th years ley, and it is desirable that it be free from cocksfoot or anything of coarse growth. About a week before date of commencement of lambing an allowance of concentrates is profitable. The exact nature will be decided by market prices, but it is necessary that it be palatable, and also albuminous enough to so "steam-up" the ewes as to encourage the milk flow. The object should be to get the ewes thoroughly *fit* and strong, and at the same time to avoid fatness. After lambing, if weather will allow, the ewes and lambs are drafted off daily as soon as the lambs can travel to suitable grass fields where the same feed is continued as the ewes have been having. In a favourable season, after about second week in April, grass alone will be sufficient to maintain the ewe and her lambs. If the owner feels inclined, and can afford it, the concentrate allowance may be continued, but where land is in good heart and not overstocked it is very doubtful whether it is profitable to use any box-feed from *April to July*.

In North Northumberland it is quite customary to stock good wild white pastures with two ewes and twin lambs to the acre, and a few cattle in each field to top the grasses to keep the pasture level. In East part of the County, on the stronger land, we usually find it stocked with a fattening heifer to each acre and a few ewes with their followers in each field. The object in the former case is to produce as many lambs as possible which are either sold as stores, or are carried on to feed on forage, rape, turnips, etc. The cattle are a secondary consideration. In the latter case the prime object is to produce fat cattle, and the sheep are somewhat of a by-product.

Selling of the forwardest lambs may commence at about ten to twelve weeks old. Where, however, the main object is to sell store lambs it is usually considered unwise to break into the flock earlier than the summer sales, which commence about 20th July and continue until October.

Weaning takes place from 20th to 31st July. The ewes are put to the poorest and barest pasture on the farm, while the lambs are carried forward, first on the pastures where they have been grazing, and later on forage, rape and ultimately turnips. At this stage box feeding is profitable. All lambs should be taught to eat early so that

https://doi.org/10.23637/ERADOC-1-205

they can be pushed on if so desired, and also so that in stormy weather they know the troughs and will eat if necessary.

For the heavier weighted hogs there is a good demand for the Northern markets, Newcastle, Leeds, etc.; whilst for the small weights up to about 55 lb. London is usually a very good customer. Very large numbers are slaughtered weekly at Berwick, Kelso and Hawick, and are sent in carcase to London: the skins and offals are sent to the most suitable markets, and the whole system is most economical.

About a fortnight after weaning the ewes should be looked through. The age to be drafted must be drawn off; all those to be kept will be examined; and those with bad udders or any defect which would render them undesirable to keep on are put off to feed. The draft age are put to a good feeding pasture so that by September they are full of condition and when washed and dressed are attractive to buyers at the ewe sales. In selling draft ewes they are catalogued as :—

W for warranted, which indicates that she has at least six front teeth, sound and together; that the udder and teats are sound and correct; and that the ewe is fit to breed from.

U.O. or "udders only," which indicates that the teeth are in some way defective, but that otherwise the ewe is as sound and as fit for breeding as the "W" class is.

Unwarranted, which covers a "multitude of sins," of which almost invariably a defective udder is one. Such a ewe should never be kept for breeding, but should be fed off as early as possible.

The principal markets for purchase of these valuable sheep are arranged for ewe lambs in second week of August, and for ewes and gimmers about the second week in September and two or three weeks following. It is important that supplies be obtained at these sales as none others are available, and naturally the best are always sold first.

The method of management outlined has been in practice for many years and has been found to suit the district; the sheep have been evolved to suit the method. It proved the means of helping over the depression in the end of last century; and although returns have been disappointing and values have fallen during recent months sheep still constitute the brightest spot in a very dismal and depressing outlook.

https://doi.org/10.23637/ERADOC-1-205 *pp 22*

THE PLACE OF SHEEP IN MODERN FARMING

By ALFRED LEWIS
Westacre, King's Lynn

Sheep have for many years taken an important place in Norfolk Farming, but, important as it is at the present time, they are, in the near future, likely to take an even more important place, as with the decline in corn growing, farmers naturally turn to stock of one kind or another, and the sheep for several reasons is obviously the animal that is prominent in the mind of the man who is thinking of laying land down to temporary grass not only because, unlike all other animals, it is one that, except perhaps for a month or so at lambing time, needs no housing whatever,—but it also requires less fencing, which is an important matter on the large light land farms of Norfolk, where the fences are invariably poor,—these reasons alone are sufficient to influence those who are intending to put down land for a short period, but even those who are thinking of adding large areas to their permanent pasture, would hesitate in these days (with the surplus supply of milk in the country) to go to the expense of building modern cow houses.

There are many different breeds of sheep kept in Norfolk, the breeding flocks comprise, Suffolks, Cotswold, Oxford Downs, South Downs, Cheviots, Dorsets, Mashams and First Cross (Cotswold-Suffolk).

A large number of pure-bred Suffolk flocks are kept, a few of these are registered, from which rams and also ewes are bred.

The rams are either sold to go into other pedigree flocks or to mate with the Masham, Dorset, or Half-bred ewes. The ewes to make up the large number of Suffolk ewe flocks, which are crossed with the Cotswold or Lincoln rams for breeding First-Cross sheep. The First-Cross (Cotswold-Suffolk) sheep is a great favourite with the farmers of the Grassland areas of Norfolk; both at the Lamb sales in summer and at the Hogget sales in the spring, they usually command a higher price.

Only a few flocks of Cotswold and Oxford Down sheep are kept, these are primarily for ram breeding.

No record of Norfolk sheep farming would be complete without mention of the famous Cotswold flock at Marham, owned by Messrs.

https://doi.org/10.23637/ERADOC-1-205 *pp 23*

Thos. Brown & Sons, who have held seventy-seven consecutive annual Ram Lettings.

Every breeder of live-stock will realise what a wonderful achievement this is. I must also mention the famous flocks of Oxford Downs owned by Messrs. Case. The South Downs at Sandringham are too well known to need any comment. The Dorsets and Cheviots are not very numerous and are mainly kept for producing early fat lambs.

We now come to the Cross-bred sheep. A large number of these are kept, principally the first-cross (Cotswold-Suffolk), particularly on farms where the land is considered too cold for Suffolks, with these, the majority of breeders use Oxford Down rams—a few first-cross rams, because of this, it is essential when buying first-cross ewes, to get them from a reliable source.

There has been a tendency during recent years to use Suffolk rams, and if the object is to graze out or finish the progeny, I think this is quite a sound course to adopt, as you get a sheep of rather better quality, and of more popular weight for present day requirements, but if the object is to sell them as stores, then I prefer the Oxford Down ram.

In the last few years a large number of Masham ewes have been introduced into the county, to supply the demand for Grassland sheep for the large areas of land that have been seeded down, and if present prices of cereals continue, there is a prospect that many more sheep of this type will be required.

Much as I admire the pioneers who introduced these sheep to the Eastern Counties, I do not agree with them when the sheep are folded on roots.

In a dry season you may get through without many casualties, but the long wool of these sheep, in a wet time, gets so matted with soil as to cause them difficulty in getting about and must have a very detrimental effect on their health. I am referring more especially to the breeding flocks.

Any casual observer will have no difficulty in realizing that the habits of these sheep are entirely different to the Suffolks or first-cross to which I have already referred, for whereas the latter graze about in flocks, the Mashams will divide up into small units and graze independently.

Where these sheep are kept for breeding they are usually crossed with a Suffolk ram, occasionally with a Ryeland.

It is customary to sell the progeny as lambs, but they can be fattened on roots satisfactorily, as in the second cross you get a sheep with shorter wool. In my own case last season I found that I could make more per lb. of them as stores, than as fat lambs. It is

https://doi.org/10.23637/ERADOC-1-205

important when buying these ewes from the North, not to get them from too high up in the hills, as the quality and conditions of grazing present too great a contrast.

I will now deal briefly with the changes that have taken place in the management of sheep in Norfolk in the last few years, more particularly with the time of marketing.

Twenty years ago it was the custom on several farms to run the hoggets as stores through their first winter, finishing them out the following year on the roots as shearlings.

On other farms practically all the lambs were kept till the following spring and sold at the various sheep sales in the county during the month of April, when the best would be purchased for slaughter, the remainder bought for fattening on the grasslands and marshes.

To give an idea of the change that has taken place in this direction, at the Annual Sheep Fair held at King's Lynn on the second Tuesday in April when years ago as many as 20,000 sheep were penned, to-day the number only exceeds by a few hundreds those seen at an ordinary market day at that time of the year, in fact large numbers are now sold for slaughter from October onwards, a few even before then, this indicates the strides that have been made towards early maturity in sheep, during the last few years.

The management of sheep must be divided into several sections, the breeding and grazing flocks and then again the arable and grassland sheep—the subject is a large one and time will not allow me to go fully into it. I will therefore deal briefly with the breeding flocks, and the management of them as generally practised in my own county.

In starting a flock it is first essential to decide the object in view.

If a pedigree flock for ram breeding is to be kept, then, obviously great care must be taken in selecting both rams and ewes for its foundation—if keeping a pedigree flock means that other sections of the farm must suffer because of it, I would say most emphatically don't start one; but whatever flock is kept, it will amply repay for the trouble of careful selection of the stock.

I am a very strong advocate in making a start with all young sheep, that is to say, shearling ewes. I have in the course of my farming career, started four fresh flocks and in each case, with all shearlings. Although this may be contrary to the general opinion and has disadvantages, I think the advantages outweigh them every-time,—sheep like other animals get old, soon enough.

With the breeding flock, next to the lambing season, the mating or tupping time is most important—unless conditions are right then, nothing you do afterwards will insure a good fall of lambs.

I am induced to think that sufficient importance is not made

https://doi.org/10.23637/ERADOC-1-205

in providing the right kind of feed for flushing and tupping, without this you are lucky if you get a big crop of lambs.

It is customary in my own case and with most other flock masters in my district, to send ewes on to the marshes for the purpose of flushing and tupping—as a rule they are sent about a week before the rams are turned in. Marshes that have been bullock fed and then rested for a few weeks provide ideal grazing for the purpose, and I prefer this to the eddish on land from which a hay crop has been taken.

On the return to the arable farm, ewes are folded either on sugar beet tops, turnips or some such crop, with a run out on to grass during the day. From sugar beet tops they go on to turnips or swedes, and it is now my custom to provide a mixture of half swedes and half thousand-headed kale for lambing. From this they go on to savoys, unless the market price of these has been too attractive—in this case top dressing about 10 acres of seeds or grasslands at intervals of about six or seven days, provides, with mangels, an alternative or rather a supplementary food supply. From the time of lambing, both ewes and lambs should get a run out on new seeds for an hour or two daily.

I cannot emphasize too strongly the importance of putting the ewes on to a succulent and laxative diet, a few weeks preceding lambing time, which will minimise to a great extent the losses of both ewes and lambs.

It is a good plan to mark the crone ewes before they leave the lambing yard—they can then be separated from the main flock and given a more liberal allowance of concentrates—if this is done a good percentage will be ready for the fat stock market a few weeks after the lambs are weaned.

At the present time the demand is for small joints—and to meet this I would emphasize the importance of breeders concentrating on providing the compact type of sheep, that will finish early at not too big a weight.

My experience with grassland sheep is not so extensive, and confined to Mashams—with these, food of such a succulent nature is not so essential—and as it is customary to lamb them down later, very little shelter is required—but I think some should be provided, as if not, losses will be high in the event of getting very cold bleak weather, which is not unusual in the Eastern Counties as late in the year as April.

If small pastures are not available, large ones should be divided, in order to give the shepherd more control over the flock.

These sheep are good mothers, and do their lambs well on short commons—it is really surprising how they will thrive on poor quality

https://doi.org/10.23637/ERADOC-1-205

grass—if, however, sufficient of this is not available it should be supplemented with an allowance of hay, in any case in very rough weather, when the grass is covered with snow, some should be allowed, a few loads of any kind of roots thrown about the pastures will be readily eaten, as soon as they have become accustomed to them.

In my own case last season I had for *use* several small pastures of from 7 to 18 acres, these I had top dressed at intervals of about six days, this gave me a continuous supply of grass for a long period.

I started marketing the lambs as fat for the seaside trade, but I discontinued this as I found I could make more per lb. of them as stores in lots of 50 or a 100.

I have never had to give the ewes concentrated foods, as they have always kept in good condition without them.

SHEEP MANAGEMENT

By JOHN JOYCE

Milverton, Somerset

Our farm is altogether about 500 acres, part is on the new red sandstone, and part on the Devonian formation. The red land part is situated in the Vale of Taunton and the other part is in the hill country to the west of that vale. This latter part consists of pasture land, some of it recently laid down, and our arable land is on the former red sandstone land in the vale.

Our flock is a pedigree ram breeding one of the Dorset Down variety whose breeders claim that it possesses all the best qualities of both the Hampshire and South Down breeds without their defects. It consists of 300 ewes, these with their lambs after the lambing period, and with 100 ewe tegs most of which each year go into the flock to replace what we term "off-going" ewes, make nearly 800 sheep during March and April. The "off-going" ewes consist of four kinds—those whose udders are defective, those which have had a bad time in lambing, those that we deem too old to be likely to breed another crop of lambs successfully, and last comes the weeding out of the worst ewes, which conform least to the ideal type and shape of the breed.

After the drafting of these four classes from the last year's ewe flock we count what are left, and the difference between this number

https://doi.org/10.23637/ERADOC-1-205

and 300 is made up from the very best of the 100 ewe tegs. Generally about eighty of them is required leaving fifteen or twenty of these tegs to be sold, and the old draft ewes also are fattened and got rid of generally in April and May. This system we have followed regularly for nearly forty years.

Beginning the year at the mating time, the first of August, we use as sires six or seven rams and ram lambs, picking a proportion of the ewes for the individual rams, sometimes placing two rams together. We select these rams with the greatest care and choose those which conform as nearly as possible to the best shape and type of the breed, but there is always, try as we will, a difference individually in the character and shape of these six rams, and so we select and mate ewes and rams on the plan of like being mated with unlike.

We have no room for the ewes during the tupping season on our vale land, and so they have to run in different fields on the hill country pastures, each lot with a ram whose character and substance is more or less opposite to the character of the ewes which which he is running.

We colour the breasts of the rams, for the first three weeks, with yellow, than the next three with red, then with blue and then with black. Each of the six rams is given a number, 1, 2, 3, etc., and every week we mark the ewes that have been served during the past seven days by each individual ram with the number that stands for that particular ram. All the ewes that have been served during the first week are marked high up on the near shoulder, those served during the second week on the near side, the third week on the near pin, the fourth week high up on the off shoulder, the fifth week on the off side, and the sixth week on the off pin.

Most of the ewes are served during these six weeks, but those that turn to the ram again, whether it be the third, fourth, fifth or sixth week, are re-marked according to the week they were last served. By this careful marking of the ewes each week, we are able at the end of nineteen weeks' gestation to take them out and bring them near the lambing pen where they can be watched and cared for more attentively. This happens about the 20th of December. Sometimes the ewes that will not lamb until March are retained in the hill country farms, the early lambing ewes only being taken home to the vale farm.

We place the rams with the flock about the first of August and take them out on the first of November, and that gives us a lambing period of January for the principal ones, some later ones in February, and the very last come in March.

The ewes run in those hill country districts until the end of November when they are taken back to the vale farm at Preston and

https://doi.org/10.23637/ERADOC-1-205

there folded on the ley ground on the third crop of first year's clover and italian. They are given hay and a small allowance of turnips hauled out to them each day.

Our lambing pen is the usual one adopted by most breeding flock owners whose ewes lamb down in the months of January and February. We select the spot for the lambing pen in a part of a lea field where the pen has not been for many years and which will be planted to cabbage a few months later. The ewes are taken in over night into a space in the middle of the pen, whilst all round are small pens made just large enough for a ewe and her lambs.

Ours being a ram breeding flock, and since we turn out our rams for service the following August, we make a point of arranging for as many of our ram lambs as possible to have the whole of the milk of one ewe to itself and not have to share it with another, that is to say, those ewes which have two ram lambs, one is taken away from the dam and placed to another ewe. Those ewes which have a twin consisting of a ram and ewe lamb, the ewe is taken away from the mother leaving her with one ram lamb only to bring up.

The ewe lambs that are taken away are placed with single ewe lambs for the mother to rear two ewe lambs instead of one, while the ram lambs that are taken away from their mother take the place of lambs that die and the rest are placed at first with a ewe that has a single ewe lamb, and then her own ewe lamb is taken away later. Thus, in the early stages of the lambs' existence, and in fact, all along, until the ram lambs are sold, six or seven months, the ewe lambs are placed in the gallery and the ram lambs get the stalls and pit !

During January and February as the lambs come they are marked according to their different sires. The ewes with their lambs are folded first, close to the pen then on the other leys, and after those are finished on the clover stubbles, and in March, they are folded on swedes and kale, a good part of the swedes having been carted away previous to the folding. The lambs run out through a lamb hurdle into the next fold which their mothers will have the next day and so on, where they get lamb troughs and a mixture of grain and linseed cake always available for them. The lambs eat off the best of the kale and swede greens and some of the swedes in this front cut; and their mothers came along next day and clear up what they have left. The ewes have a feed once a day of hay and a mixture of decorticated cake and grain.

About the beginning of April the swedes and kale are finished, and we have always a field of Italian and trefoil ready for them which has received, during February, one cwt. per acre of sulphate of ammonia to push it along and make it with mangels a good and substantial folding for them. The lambs still run in the front before the

https://doi.org/10.23637/ERADOC-1-205

ewes getting mangel to nibble with their trough-food as before. This field lasts them until about the middle of April when our first piece of trifolium, winter barley and vetches mixture is ready for them. The field of Italian and trefoil they have just finished and left is immediately ploughed and transplanted with thousand headed kale plants for feeding with the lambs in August and September. Incidently, we keep two fields conveniently placed for the purpose of growing this catchcrop followed by kale one year, and the next year it goes into barley or wheat, into which the seeds of Italian and trefoil are sown for the year after.

This first piece of trifolium, as above stated, is usually finished about the 10th or 12th of May and planted to mangel wurzel or beet, when the sheep are taken on to another piece of mixture of the same sort, but which was planted in the autumn about three weeks later than the first field was planted. Previous to commencing this last field, the lambs are weaned from the ewes and the ram lambs are divided from the ewe lambs, the ram lambs getting the front folds, the ewe lambs following them, and most of the flock of ewes are turned out to the hill pastures where they remain until the following autumn. The draft ewes which are fattening are kept in the fold behind the ewe lambs to clear up what is left from the folding of the two front lots of lambs. Each lot has mangels placed in the fold for them, with cake and grain in their troughs.

The next piece that this folding flock is taken on to is a piece of late variety of trifolium sown with a larger proportion of vetches than was sown in the last piece they folded. In the next piece after this is finished they are taken on to a crop consisting of vetches alone planted not before October or November, and from this when finished they are taken to a field of vetches and rape which were drilled in March. With the finishing of this last piece time has taken us on to about the 20th of July. The land that they have folded during the past three or four months is planted as follows, the first piece with mangels and beet, the second and third pieces with swedes and kale, the fourth and last piece with common turnips.

Now we come to the time for preparing the ram lambs for sale and getting them out to the markets. They are taken on to a piece of kale the planting out of which, after the Italian and trefoil I have already described ; and they have also now a run out once a day on aftermath clovers, and folded at night either on the kale or the clover, according to the weather.

The greater part of these ram lambs are sold in August, and when most of them are gone we are able to pick our ewe lambs for future breeding. This is done very carefully, for we pick only a little more than half of our whole number of ewe lambs for this purpose and which

https://doi.org/10.23637/ERADOC-1-205 *pp 30*

will a year after be incorporated in the ewe flock. The cull ewe lambs now take the front fold and place, the rams having been sold and gone, and these culls are either sold for breeding or fattened out in the autumn for the butcher.

The ewe lambs retained for the flock are run behind their culled out sisters, and as the culls get sold they get a better time. Both lots are folded on the aftermath, the culls in front and their sisters behind, and they have a bite of kale also every day which has been drilled in the previous May. The ewe lambs for keeping sometimes run on the pastures after their crop of kale has been done, for a while, and finally are wintered on the late turnip crop which followed the spring vetches and rape, as we have seen, with cribs full of hay once a day.

With this system of folding and feeding we avoid a good many of the complaints which sheep are subject to and which we hear and read about, such as fluke, scour, worms, fever, etc. : also the land farmed like this is kept in good heart and condition and is able to grow the maximum crops of the neighbourhood pretty regularly whatever the season may be. This system is costly in labour and sometimes we get what we call stripping between the toes of the sheep and foot rot. We have tried most of the things which have been advertised for this trouble and have adopted a foot trough made of oak which we take about and which we fill with a solution of sulphate of copper in water, and through which we walk the sheep once or twice a week in summer. We have, however, come to the conclusion which confirms the opinion of a very good old shepherd in the west country, that in order to get and keep sheep's feet sound it does not matter so much what you strike them with, or what solution you use in the foot bath, but what does matter is the amount of importance which those in charge of the sheep attach to the curing and keeping their flock free from this complaint. For this there is no easy or miraculous remedy,—no waving the hands over them and it is gone,—but it is rather, I tell my shepherd, a question of " Prayer and Fasting " —that is, agonising in the mind about it and treating the matter of avoiding and curing this disease of greater importance than their own eating and drinking.

https://doi.org/10.23637/ERADOC-1-205

THE PLACE OF SHEEP IN MODERN FARMING

By A. C. HILL

Hatfield, Hertfordshire

The tendency to-day is to feed sheep, more and more, on grassland —this is necessary as the old system of folding on arable is so expensive that there can be no profit.

For very many years now I have made a practice of buying lambs from Scotland each autumn—these lambs are either Cross or Half-bred ; by Cross-bred I mean what is commonly known in this county as " Masham," but this is really a misnomer. To make sure that my meaning is clear, the Cross-bred lamb I refer to is between a Border Leicester sire and a Black Face ewe ; the Half-bred on the other hand is known locally as White Face or Leicester—but they are really a cross between Border Leicester and Cheviot ewe. " Masham " on the other hand is a cross between the Wensleydale ram and the Black Face or Swaledale ewe—and, owing to their mottled face and character, they are all called Mashams in the South of England.

What is usually done, is to buy the lambs in the autumn. I try to get some suitable for short keep, that is, for feeding on any after-math such as clover leys and young grass seeds. When I say clover, I mean anything of that family—Sanfoin being probably best of anything.

The majority of the buying consists of the best top lambs off the hills, and if these are bought with a touch of good condition, and given a good run on good keep, it is surprising how many will go away fat after six or eight weeks, and up to Christmas.

Those which do not fatten off before Christmas are kept and hand fed on grass or roots if available. If grass wintered as stores and the pasture is bare it is best to give them some form of hand-feeding in the shape of oats or hay from January to March.

In former years I used to carry some through the following summer, but that is now finished, as the taste of the public has changed, and they will have lamb-mutton.

One word on the autumn clover feeding.

To be successful don't over-stock whether you have 20 or 200 acres to run over. If you think you will keep and feed 200 lambs, my advice is to buy 150. You know farming and grazing is much at the mercy of the elements, and some weather might come which will cut off the food prematurely or, even if the food lasted as long as you

https://doi.org/10.23637/ERADOC-1-205 *pp 32*

expected it to do, when it does go done, you might be faced with low prices, and, if too heavily stocked, would be forced to sell on a falling or low market.

In all that I have said—don't forget that I am talking of the sheep running loose—not in bundles. (They do much better loose, and it is cheaper.)

One thing more, if you have a certain number of acres or fields it is best to have one or more fields vacant so as to give a change.

I have always noticed that they will stay quietly enough with poor, or no fences, until the food gets somewhat short, but the minute they begin to roam or break out, it is a sign that they are tired of that field—so, shift them elsewhere for a fortnight, or what time you can give them. By that time the field they were on before will have grown and cleaned—you can then take them back and they will stay again for a time. That is how I handle what we call a *Dry Flock* in the autumn.

I am now to say something on what, I am sure, to-day is the most important flock of all—

The Breeding Ewe

Owing to the high charges on arable land, and low prices for the produce, the farmer has to cast round to find out what will stop his losses and try and leave some profit, so that much land is going down to grass.

No one thinks that hay is to leave him any great margin of profit, so I think he must turn his attention to the breeding ewe—(fed on grass). And of any of the breeds none has proved so suitable as the Cross ewe known as "Masham," or, undoubtedly best of all, the Half-bred ewe already mentioned.

In proof of this, they are to be found to-day all over England. There is no doubt that they are more suited for the raising of lambs on grass than any of the English breeds. They have excellent constitutions, are long lived, easily wintered and requiring no roots. They are also very prolific, raising 1½ to 1¾ lambs per head.

My flock consists of 500 Half-bred ewes.

Notice that all the ewes are Half-bred. It is true that the Masham is an equally good mother, but she gives the shepherd more trouble in warm weather, with fly, and scalding of the udder with urine. I think, also, that the Masham has a shorter life—by a year.

The Half-bred should give 4, 5, or even more crops of lambs. I cull out each year all broken mouthed ewes, but they are invariably purchased from me by a farmer who runs a small flock, to breed from

https://doi.org/10.23637/ERADOC-1-205

again, so that many ewes produce in their lives five crops of lambs with me, and one or two afterwards elsewhere.

My standard purchase of young ewes is 100 per annum, to keep up the 500 standard.

These are kept on, from 200 to 250 acres during the summer months, according to the flow of grass.

I should here mention that I have an off-lying rough grazing where I send the ewes after the lambs are weaned, for a month or six weeks. This allows my fields at home to clean and so be ready for the mating season.

Sires.—In my lifetime I have used several of the leading breeds, including Suffolk, Hampshire, Southdown, Ryland, and Border Leicester on these ewes. Of these breeds, I have no hesitation in saying that on my land the two best sires are Suffolk and Hampshire for a quick return and profit.

The Ryland I have tried last year and this—and I don't propose to use them again.

The *Southdown* is the favourite with the butcher and to anyone who sees the carcase.

If—in the open market—the butcher would give 1s. per stone more for the Southdown Cross, then I would be pleased to supply his needs.

However, from my experience, the Suffolk Cross lamb at the same age as the Southdown, always makes about 10s. per head more—so that I am forced to produce the article which pays best. My choice must therefore fall on the *Suffolk;* although for best product there is very little to choose between the Suffolk and the Hampshire—the latter is the better of the two, when the lambs do not go fat, from off the mothers—they come much kindlier and faster during winter root feeding. I put the rams to the ewes, so that lambing begins about the 11th February.

Management.—About the beginning of January I begin giving them chaffed hay and oats and later on add dried grains—bringing it up in all to one half-pound a day.

When the ewes begin lambing, the mixture is improved with an addition of bran and also a good supply of mangels during lambing and until the grass comes.

Lambing Pen.—I would like to point out that with this way of getting lambs, very little preparation is required for lambing—the most that is necessary is a good, dry, and well sheltered meadow. After the ewes lamb, we see that they are driven to the sheltered side of the wood or hedge—that is all that is wanted, if the lambs are strong, and the weather moderately good—but, as often happens, you get a rough day, a weak lamb, or an accident—for this con-

https://doi.org/10.23637/ERADOC-1-205 *pp 34*

tingency before lambing begins we prepare hurdles made with straw, and erect small pens of five hurdles—four square and one on top—and dot these pens about the various meadows. These are of the greatest service on a rough day—or with a weak lamb, if put in one of these pens at night he is usually ready to turn out next day; also the labour of a flock running on grass is much less than is required for hurdling an arable.

One man with me sees to anything from 900 to 1200 sheep and lambs all the year round,—except for help given at lambing, clipping, and of course drawing for market.

I should here add that the lambs you may say are fed, from the day they are born, with some kind of concentrated food. When they are ready to eat, feeding pens are erected, with hurdles, in which lamb troughs are placed, and these are replenished night and morning, and the lambs are allowed to eat *ad lib.*, beginning to draw for market at ten to twelve weeks old.

What are not sold fat, by the beginning of August, are weaned and then fed like the Scotch lambs.

Now the last word is on root feeding of Scotch lambs. This they do, as well as any other, provided the ground is light and not too stickey, but the method has to be different from any of the local breeds.

It is simply this—that you cannot run them along in small pens as you do the Down sheep, for two or three reasons. The first and greatest is that you could not keep them in; the second, they would not eat each pen clean to begin, as they are rather a shy and dainty feeder. The best method is to have wire netting and run it up the outside of the roots, and then run another line about the same distance wide as you would give in hurdles, and, of course, have the dividing fence in between, done with hurdles making the first pen rather big so that they do not learn to jump out.

When the first pen is partly cleared or dirtied begin by giving them a fresh bit every morning. Never mind though they have not cleared the first, second, or third pens, they will do so later, and will come back over it days afterwards and clear up. By going on in this way, to the top of the roots, you simply begin coming down the fields, by moving out the existing netting, a fresh break every day, and still allowing them the run of the first strip cleared coming up the field.

By this way you give them plenty of room and they settle down and do not jump. Of course, occasionally, you get an inveterate jumper—there is only one thing to do, get rid of him, or he will soon have companions.

I know that some one will say that you do not get the ground

https://doi.org/10.23637/ERADOC-1-205

evenly manured this way. I agree, but at the same time, it is on the ground somewhere, and that is better than none at all.

On reading over the foregoing, I just thought the picture I had drawn seems very easy and rather rosy, and that all the struggling farmer has to do to live easy and get money is to turn his farm to grass, get a flock of sheep, a stick in his hand, call the dog to heel, and march out among the sheep, and the thing is done. Well—it is not quite so easy as that. It is true that sheep while well and thriving require no tonics—but they are subject to many ailments and as soon as they are affected they are quickly wrong or gone. I will just mention two, and they are the bane of a sheep farmer's life, and play the very devil with the sheep—*viz.:* foot-rot, and fly. If either is neglected —well goodbye to profits.

Treatment of Meadows

The treatment of meadows should be very different from ten to twenty years ago. Sheep must have young sweet grass. I make a practice, therefore, of managing the grass so that every field is close-grazed once during the year.

In a wet year like 1930, when the stock could not keep the grass under control, I freely used the mowing machine. In addition, I top-dress about one-third of the grass land every year with phosphate and potash—this enables the carrying of a larger stock on sweeter grass—and helps to fatten the lambs more quickly.

New Zealand

In conclusion—may I say that I have had the benefit of seeing something of the methods adopted by our chief competitors in land production, namely—New Zealand. As a result of my visit to that country, early last year, I have every confidence in saying that we have nothing to learn from them so far as general feeding and management are concerned.

A hundred ewes, here, will produce considerably more lambs, than the same number of ewes over there—which must mean a profit to us. They, however, have great advantages in climate—which provides them with growing grass for eleven months in the year. This means that lambs are produced entirely from grass—no artificial feeding being required or given. Apart from some minor features with regard to dipping and clipping, there are no outstanding lessons which they can teach the Home Country. The breed of ewe largely predominating out there is the *Kent Ewe*, which has been crossed with several breeds of rams, but they are now using practically nothing but the South Down, which produces very even uniform

https://doi.org/10.23637/ERADOC-1-205 *pp 36*

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

Farm Director, Rothamsted

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

https://doi.org/10.23637/ERADOC-1-205

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

https://doi.org/10.23637/ERADOC-1-205

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

https://doi.org/10.23637/ERADOC-1-205

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 :—

https://doi.org/10.23637/ERADOC-1-205

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

https://doi.org/10.23637/ERADOC-1-205

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

https://doi.org/10.23637/ERADOC-1-205

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,

https://doi.org/10.23637/ERADOC-1-205

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

https://doi.org/10.23637/ERADOC-1-205

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

https://doi.org/10.23637/ERADOC-1-205

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

https://doi.org/10.23637/ERADOC-1-205

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,

https://doi.org/10.23637/ERADOC-1-205

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

https://doi.org/10.23637/ERADOC-1-205

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

https://doi.org/10.23637/ERADOC-1-205

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.

https://doi.org/10.23637/ERADOC-1-205

I am, as you may know, a breeder of pedigree Hampshire Downs and keep a flock of 320 ewes for ram-breeding purposes, which with the co-operation of my shepherd have been very successful at the various shows these last few years. I would here like to make a strong point, that half the battle in successful sheep-farming is the close co-operation between the flockmaster and his shepherd. The owner must look well ahead to provide the necessary food and change of crops and he must have a good shepherd to make the best use of them, particularly in the case of arable land sheep. The other flocks I keep consist of 320 Kerry Hill ewes and 420 Kerry Hill and Exmoor.

I will first of all deal with the Hampshire Down flock on arable land as I consider the management of a Hampshire Down flock for ram breeding to be very similar to that of a flock kept for early lamb production which I would ask all those who live in suitable districts to consider. In early lamb production you have natural protection from foreign dumping and very few of the commodities we produce have this natural protection, further also the supply is limited. For early lamb production there is no doubt in my opinion that the Hampshire Down breed is pre-eminent owing to its early maturity qualities, and with good management you get a lamb of excellent quality and good weight in a short time. To produce this, lambing should commence in December or early January which means turning the rams in in August. No doubt the best food for the ewes at this time, to be commenced about fourteen days before turning the rams in, is rape and sainfoin so as to produce as many twins as possible and also, rather an important point, to reduce the length of time of lambing and thus get the lambs more level. Failing this I believe the next best method is for the ewes to be turned out in small lots on grassland. I generally try to get the ewes on to rape and sainfoin cleaning up behind the ram lambs. After the rams have been taken away low feeding for a time is all the ewes require, consisting of a Down during the day and laying behind other sheep at night, such as ewe lambs which have been kept for stock to come in to the flock the following year or late lambs to be fattened. The ewes will continue to do well on this keep up to towards the end of October. When November comes in I generally go on to white turnips and the Downs at day-time. Should frosts then start a small quantity of hay is given. This is continued until mid December when the flock is taken to the field on which they are to lamb. I like marrow kale and swedes for this purpose. During the last month at least before lambing, it is very important to lay the ewes as dry as possible at night and the ideal is to have an old clover field near-by on which they can be penned should the root ground get very wet and muddy. A fortnight at

https://doi.org/10.23637/ERADOC-1-205

least before lambing the ewes are started on cake to insure a supply of milk when they lamb. I usually feed ½ to ¾ lb. until lambing and then increase to 1 lb. after they have lambed according to the supply of roots and the quality of the hay. To ensure ease in lambing no doubt a proportion of the cake should be linseed. This I am sure is paid for many times by the number of lambs and ewes saved at birth through this safe laxative food.

Just a word as to the lamb yard. Many lambs are ruined from being kept in the pen too long. Strong single lambs scarcely ever see the pens but go direct into one of the various small sheltered yards which I have joining the central lambing yard where the ewes are laid at night. Twins and young ewes have a separate pen and extra feeding. As soon as possible, weather permitting, the ewes and lambs go out on to the roots, swedes and kale, the lamb yard being so arranged that they are able to go out to the roots and come back to the shelter as they please. One important point here, keep the yards well bedded up with straw so as the lambs lay dry. Never let them lay in mud as chilling will soon result. The lambs should be got on to trough food as early as possible. A good mixture can be made of such ingredients as linseed cake, beans, peas and locust beans (finely kibbled), flaked maize, rolled oats and pea chaff. I endeavour to plan enough swedes and kale to last until the first week in May. Should I look like being short of roots, I put in some rye in the autumn and a useful fortnight's keep can be had with the addition of mangels thrown out several days ahead.

After roots are finished I like a cheap grass seed mixture such as Trefoil and Ryegrass which I put in especially as a catch crop for the ewes and lambs after a second corn crop. The folding and half-fallowing is a good preparation for wheat. A very general practice in my district, instead of putting in seed especially, is to keep back an old clover field which so long as ewes have not been folded on it the previous year, makes a very useful feed with the mangels.

In early lamb production most of the lambs will be sold whilst on this grass in April and May, but enough should be planned to carry on the later lambs and ewe lambs if they are kept for stock, until the vetches are ready about the first week in June. Winter vetches and spring vetches will carry on the lambs until rape is ready, and if this can be arranged to join a sainfoin field, nothing will do sheep better than rape and sainfoin. This brings me to the commencement of the year again. During the summer all the ewes require is to go to Downs by day and clear up behind lambs at night.

I think this covers the main points of an arable flock, and no doubt where one has dry arable land the method I have outlined is undoubtedly remunerative particularly so should corn prices

https://doi.org/10.23637/ERADOC-1-205 *pp 52*

improve. In early lamb production both the ewes and the rams must be fed well, as otherwise that touch in the lambs which is so essential to get the top price is just missed.

Now I come to the mangement of the grass ewe flocks. This is a comparatively new system of sheep farming on what was once arable land and I consider it is still in its experimental stage, but I give you here the system which these last few years has worked so far quite well and with which I propose to carry on. After this year, when my sowing down for the time being will be completed, there will be eight grass fields for each flock averaging about 46 acres each in addition to the Downs already mentioned. This grassland and Downs is not only confined to sheep, as a large number of cattle have been wintered out this season. The temporary grass fields are heavily stocked from spring to autumn and hence are of little use in winter, and the Downs are rested from sheep all the summer in order to grow keep for the winter. I intend to run these temporary grass fields in a fourcourse rotation as follows: First year hay and aftermath for sheep, second year sheep, third year cattle, fourth year sheep and so on, and by this means, I have so far, and hope to avoid, sheep-sick land which I think may prove one of the greatest difficulties in grass sheep farming. Being a late district the rams are not turned in until the beginning of November, so as not to have any lambs before April. I try to save two or three fields for each flock for some weeks before turning the rams in in November so as to get a good fresh green bite which will last the ewes for a month or six weeks. The ewes are divided into as small lots as possible. These and other of the new grass fields carry the ewes on until December, and then the ewes are transferred to the Downs by day and roots at night. I generally allow twenty to twenty-five acres of roots for each flock to last them until the middle of March, which I find of great assistance to the ewes as my Downs are not sufficient alone. I do not believe in the " Test of endurance system " for grass sheep, and they require every bit as much attention as arable land sheep, but one man can look after a much larger flock and the later date of lambing economizes extra labour from the staff of the farm, and further during the summer the shepherd has time to help at the busy periods of hay and harvest.

The ewes have cotton cake and oats at least a month before lambing, as the stronger the ewes are at lambing time far less will be the losses. In April we invariably get one very wet and cold week at least.

About a fortnight before lambing the flock goes to a sheltered field with fresh grass adjoining for the ewes and lambs to be passed on into after lambing. The less grass ewes are handled at lambing time, if the weather is good, the better, but in order to facilitate

https://doi.org/10.23637/ERADOC-1-205

drawing out the ewes and lambs from those which have not lambed, the ewes are always brought into a large pen at night. The singles are put together in one field and the twins in another. I do not like running, to commence with, more than fifty ewes and the young lambs together, and this can be quite well done by dividing the fields up with temporary netting and so keep passing them along.

For the rest of the summer the ewes and lambs are taken from one grass field to another and round again, as undoubtedly constant changes are one of the necessities for success.

The best lambs are sold straight from their mothers in August, and I wean the smaller and later lambs at the same time and get them on to trough food which they readily take to within a week or ten days. At weaning time I physic them as a precautionary measure. I carry these lambs on during September and October and draw from them as they get fit. The cull lambs are got on to roots and are grown on and fattened and sold in February and March. During September and October one of the best feeds for grass lambs is young clover after harvest should this be available. The ewes after weaning will live and pick up almost anywhere.

The grass ewe most suitable to the system I have mentioned is one that is hardy, but I think a far greater point is to have one that is adaptable so that if it is necessary during the winter to feed roots, hay or cake, this can be done without undue trouble and delay. At the present time for my system I favour the Hampshire Down ram crossed with the Kerry Hill ewe. This cross produces a good quality lamb with size suitable for any purpose, and the ewe lamb has every appearance of making a very useful Half-bred ewe. I have a small number of 2-tooth ewes of this breed crossed again with a Hampshire Down ram with which I am experimenting this season. Although being young ewes they have lived with the older Kerry Hill ewes, and at the present time look every bit as well. My objective here, is in view of the fact that I keep two grass flocks, to be able to breed ewes for one of the flocks so that I only have one lot of fresh ewes to buy every year.

In conclusion, I should like to mention what I consider are the essential things so far as we know at present as regards grass sheep on arable land freshly laid down, namely, the ewes must be as strong as possible at lambing time and the lambs given a good start, frequent changes of fields and not on the same fields year after year without a rest from sheep, and lastly, dry laying.

I was instructed to be practical, and I hope I have not been unduly so by going too much into detail.

Finally, I should like to say a word as regards the Hampshire Down breed. This breed is undoubtedly renowned for its early

https://doi.org/10.23637/ERADOC-1-205

maturity, hardiness, and quality of mutton and wool as was again proved by its success over all breeds at Smithfield this last year. There has, I believe in the past, been a prejudice against this breed as regards difficulties at lambing. Hampshire Down breeders have realized this for some years, and they have and are concentrating on producing the type of ram which is needed for present day requirements. I expect many of you have heard of our Marlborough sheep trials which have been carried on these last few years. In our trials last year the Hampshire Down ram was used amongst other breeds of rams on several different breeds of grass ewes, and no trouble was reported at all as regards lambing difficulties and the lambs from the crosses were without a doubt very favourably commented upon.

Further, I should like to mention that one of our largest commercial flock owners has carried on very successfully one of his large flocks of Hampshire Down ewes entirely on grass for these last few years and has gained awards in the flock competition with his flock. I consider the Hampshire Down ram, provided careful selection is made when purchasing which is necessary with whatever breed is used, is the finest ram for almost any breed of ewe.

GRASSLAND SHEEP IN HAMPSHIRE

By H. EDGAR

Richford, Essex

In considering the place of sheep in modern farming, it must be admitted that sheep have in the past, and probably will have in the future, a prominent place in Agriculture. In the old days, sheep were considered a necessary adjunct to corn farming and in these days when perforce more land must be laid to grass, they still hold their position.

The trend of events appear to be turning more to grass sheep. We are faced with undreamt of competition in grain growing, and while I am not prepared to assert that wheat is not the keystone of British Agriculture, I am convinced that stock has to be the backbone, and for preference I pin my faith to the ewe and cow. This is a solid conviction borne out by my experience on the grain growing belts of Canada and a fairly extensive knowledge of land in England. In Canada and like countries, land can be had cheaply, easily acquired, more economical to work, has no standing charges to bear as in England, and cheap transport. Here our expenses are heavy and

https://doi.org/10.23637/ERADOC-1-205

yields not sufficient to warrant keeping any but the best land under the plough. I make no allusion to present values, which are probably due to dumping, and bear no relation to cost of production.

In speaking of grassland sheep in Hants, I would like it to be understood that most of the grass sheep probably spend some of their time on roots or have a few roots fed to them. It is still considered necessary to grow roots to eke out winter feed, and grow straw for fodder and litter, and it is also an advantage to get the sheep off the pastures for a month or two to allow them to sweeten and get an earlier bite in the spring.

The type of grass sheep varies greatly; I believe there are some Southdowns run on grass, although they might strictly be called arable land sheep. We have Kents, useful sheep where grass is luxuriant and closer stocking required, some Rylands and many flocks of crossbreds, the most popular of which is the Half-bred, *i.e.* the Cheviot-Border Leicester cross. This is a reasonably docile sheep, very adaptable and will cross with almost any type of ram for local requirements with good results.

My experience with sheep relates chiefly to grass sheep kept on a Hampshire hill farm. By hill farm, I do not mean the rolling stretches of corn land on the North and North-West of the county, but land found on the East and North-East side, hilly, fairly wooded, some of it strong clay overlying chalk on the top of the hills, with outcrops of chalk on some of the brows. It is obviously not an arable farm, being too enclosed, hilly, and heavy working with yields not sufficient to warrant keeping it under the plough, although when my father took the farm in '99, practically the whole of it was arable. My first experience was with the Mule ewe, *i.e.* Black Face Scotch ewe crossed Border Leicester, but for many years these have been superseded by the Half-breed Cheviot-Border Leicester cross, chiefly because they breed a closer coated lamb, which the butchers appear to prefer, wool has been worth more, and they are more adapted to folding if necessary, although there is no doubt they do much better on grass. The flock has been maintained by the purchase of ewe lambs from North of England and Scotland, these are put to ram in the autumn and given trough food all winter, usually on roots. Having a lamb in their first year we do not consider has any ill effects, in fact I am inclined to think they make better milkers, and are more prolific, but it is essential they should be reasonably well fed and a little extra care as shearlings. The bulk of the lambs off the ewe tegs are sold fat off their mothers. The stock ewes spend the bulk of their time on grass. To take the usual routine, immediately after weaning, the ewes are sorted as to tooth and udder. Those ewes which are not fit to rear a lamb are usually sold at local fairs as

https://doi.org/10.23637/ERADOC-1-205 *pp 56*

grazers, it being my experience that they don't pay to keep on for fat. Any ewes which are right in udder, but a little shaky as to tooth, are marked and usually put to ram earlier so as to get ewe and lamb off together. The main flock of stock ewes are put away on to the poorest pasture on the farm till about six weeks before going to ram, when they are moved to better pastures to flush them. The rams chiefly used were Southdown for early lamb, Suffolks and Oxford Downs for the remainder. The Suffolk cross is a closer coated lamb than the Oxford, which appears to be what the butchers prefer and is of course first-class quality. It has perhaps the disadvantage that it is a slightly slower doer and does not back so well as an Oxford, but either cross produces a very serviceable lamb. The ewes may run about all winter on grass or fold a few roots off after Christmas if required. About six to eight weeks before lambing, the ewes will get concentrates or hay, or both if their condition warrants it. When due to lamb, they are brought to a pasture field near the farm buildings, given mangolds, hay and concentrates, usually about $\frac{2}{3}$rds lb. oats, $\frac{1}{3}$rd lb. high-grade nut cake or Decorticated Cotton Meal. It has often been the practice to keep the single lambs separate and get them pushed off as fat lamb, but this depends of course entirely on the accommodation available. Concentrates and mangels are continued till there is a bite of grass, when they are discontinued, or if fat lamb is the objective, concentrates would be kept on. The ewes and lambs are kept moving round the various pastures till about first or second week in July when the lambs are weaned and go on to the second cuts. I've had some wonderfully good results on wild white clover and cocksfoot and perennial rye grass, then on to sainfoin and afterwards to rape, swedes and marrow stemmed kale. Most of the lambs are fatted, very few being sold as stores, although this year the store trade was the best proposition.

I would summarize the case for grass sheep under the following heads :—

Labour Cost

There is no great extent of hurdles to pitch, no succession of crops to be grown, shepherding is very economical as it only requires an hour or two a day during summer, no elaborate lambing folds are put up, a few thatched hurdles in the corner of the field for weakly lambs is all that is needed.

2. *Low Cost of Producing and Rearing Lambs*

The maintenance of the ewe flock costs very little, having nothing as a rule from weaning time till six or eight weeks before lambing,

https://doi.org/10.23637/ERADOC-1-205

when probably a small amount of concentrates would be fed and continued or not till weaning time, depending on whether the lambs were to be sold fat or as stores. Ewes with twin lambs might reasonably be expected to have concentrates till weaning time.

3. Grass sheep as a rule were very prolific and good milkers. I think I have done badly if I don't get 1½ lambs per ewe, and for many years have exceeded that average.

4. *Value of Produce*

Grass sheep as a rule were kept to produce cross-bred lambs which generally speaking were small, good cutters, made more per lb. than heavier breeds and were liked by butchers. I made up to 74s. apiece last July and August.

5. *Depreciation*

The depreciation on a grass flock is not so heavy as with arable sheep. Production starts early—in their first year and continues for several years after the ewes have become full mouth, due to retaining their teeth so much better on grass. They will continue to breed and rear lambs so long as their teeth are even, and more twins are obtained from older ewes. Also, up to recently there has been no wide discrepancy between the price of a fat ewe and the cost of an ewe lamb.

6. *Adaptability*

I have always found my grass sheep quite adaptable and have never had any trouble in keeping them in folds if necessary. Lastly, I've always found the returns from my sheep one of the few bright spots in my accounts.

I would like to issue a word of warning, don't be tempted and overstock with sheep on grass. They may do well for a year or two if the pastures are new, but there soon comes a time when the land appears to be sheep sick. Whether this is due to parasites I cannot say, but I am a great believer in regular pilling for worms both in ewes and lambs. The lambs are always pilled when the ewes are sheared and again at weaning. Footrot is another scourge which can be kept well in hand by use of a weekly run through a foot bath. Also, I consider it is not a good policy to keep sheep too long on one pasture, the more they are moved about, the better they will do.

https://doi.org/10.23637/ERADOC-1-205

To anyone proposing putting more land to grass, I cannot too strongly recommend common sainfoin if their land will grow it. It produces a good hay crop for several years, and there is nothing like the aftermath for lambs. If sainfoin cainnot be grown, don't forget wild white clover and cocksfoot. I'm aware of the many criticisms of cocksfoot, but provided a leafy variety is sown thickly and kept well grazed by horned stock, I've found it invaluable.

Another word of warning to prospective buyers of ewes or ewe lambs from the North of England and Scotland, beware of buying stock from a flock infected with scrapie. This is an insidious disease which may not show for several years, and cannot be detected at time of purchase. It is a good plan to take the auctioneer into your confidence and ask him to recommend flocks to you.

In conclusion, I would like to express my appreciation to the work done by pedigree breeders. Without the good foundation which they provide, we could not hope for the results we get.

THE PLACE OF SHEEP IN MODERN FARMING

By H. W. DREWITT

Colworth, Sussex

The Southdown

The Southdown breed takes its name from the South Down range of hills which stretches across Sussex from Eastbourne to the Hampshire border. Here they have been kept from time immemorial, and at an early date were introduced into Norfolk and Dorsetshire. Lately many flocks have been started in Gloucestershire where a rather different type is favoured. In the United States and in New Zealand many pure bred flocks are kept, chiefly for the breeding of rams for crossing, as the Southdown sire is usually very impressive and leaves an indelible mark on any other breed of sheep.

Almost all the modern breeds of short-wooled sheep have been built up by an infusion of Southdown blood.

The traditional method of management was to run the ewes on the Downs during the day in the care of a shepherd and to bring them back at night to a fold of clover rape or roots according to the time of year. While thus of course enriching the arable land at the

https://doi.org/10.23637/ERADOC-1-205

expense of the Downs, the latter seem to have attained a state of equilibrium and to have altered but little either in amount or quality of herbage during the last century.

While it may seem a simple matter to mind sheep on a Down, the skilful shepherd would take care to make the sheep feed the Down evenly and to have a sheltered piece for bad weather.

The last twenty years, with their urgent need for economy in labour, have brought about many changes in the methods of management. Very few of the flocks are now minded on the Downs; either cows have taken pride of place on many of the more accessible and better farms, or on the poorer and more out-of-the-way watered; on one with the capital required to stock a flock farm can be found to take such a place. The result is that a much larger proportion of Southdown flocks are kept on the maritime plain between the Downs and the sea, where sheep used to be kept in hurdles throughout the year, but here again changes are taking place in the methods of management, and these I propose briefly to indicate in the hope that some among my audience may find something of interest and possibly of profit.

While probably a shepherd has always looked after more capital than any other man of the farm, the present price of labour makes it imperative to lessen the labour cost per hundred sheep if arable sheep farming is to survive. The cost of the ewe up to the time of her first mating can be kept down by running the ewe tegs on the meadows during their second summer; or to go to the other extreme the ewe lambs can be mated in their first autumn and produce a lamb at one year old, to do this successfully they must be done well from the time they are born until their first lamb is weaned.

Another laborious job is pecking up turnips and swedes during the autumn and winter months; this can be obviated by folding the ewes on such crops as rape, mustard, beet tops where sugar beet is grown, marrow stem or thousand headed kale, turnips drilled and drag harrowed to thin them. In growing these crops there is a double saving in the hoeing and pecking. Hay is necessary to the Southdown while on these crops, although a saving can be made in this respect if a grass field is at hand for the ewes to run out in for an hour or so each day.

I have been asked to provide some information on costs and prices. Costs will vary so much from one year to another and from one farm to another that any statement on this point must be of a very general character. When sugar beet growing began we had to find some basis upon which to value the tops which were consumed on the ground by sheep; to arrive at some figure for comparison we took out the cost of growing several fields of marrow stem kale

https://doi.org/10.23637/ERADOC-1-205

and found that in the winter a ewe could be kept for an average cost of 5d. per week with the help of one pound of hay per day, which at £3 per ton works out at about 2d. per week. In passing I may say that forty years ago 3d. per head per week was the figure adopted for book-keeping purposes as we passed the flock from one farm to another in the winter.

My own flock of Southdowns does not cost me so much as they are frequently invited out by other farmers who have more keep than they want; in this way I get an average of about 100 ewes kept for nothing the year round. I should keep more sheep in this way, but in a year when the root crop partially failed no one would have much to give away and I might have more sheep than I knew what to do with. Another advantage is that these farms have usually had few or no sheep on them for some time, and it is a common experience that sheep do best on land that has carried no sheep for some time.

All sheep and lambs have access to mineralized salt licks which have proved valuable in keeping sheep free from the troubles which affect them when they are folded on the same land too often, but there is one disease for which no cure has yet been found, that is the dysentery which lambs suffer from when they are folded on land which has already had sheep on it in the same season.

We begin to sell our lambs—which are mostly dropped in March—as stores in October, and last autumn sold in October and November 500 lambs at an average price of 51s. 5d. After they were weaned in the first week in June, they had been folded first on vetches, then second cut clover, followed by rape from which they were marketed. They had a gradually increasing amount of mixed dry food until they were eating ¾ of a pound per head; the mixture was composed of three parts crushed oats, three parts dried grains, one part cracked peas, with a little crushed linseed for the last six weeks. Half of the trough food is given in the morning and the other half in the afternoon. If we can grow a piece of rape next to a piece of clover, the lambs have a fold of clover in the morning and a fold of rape in the afternoon, but it is not always possible to do this.

The ewe flock can be brought in to clear up behind the best lambs, and can frequently be kept cheaply on food that would otherwise be wasted; thus the ewe lambs run on the young clover seeds from the middle of September until the end of October, this is good both for the young seeds and the sheep.

The ewes are kept in the flock as long as their teeth are sound and are then fattened out, the first draft going out in July and August and the second from November to March as the state of the market may dictate, but they must be gone before the ewes from the flying

https://doi.org/10.23637/ERADOC-1-205

flocks come on the market as their fat lambs are sold. These draft ewes are finished for market with about one pound of whatever food is cheap; last year it was oats and cotton cake, this year it is maize and cotton cake. They go to the butcher at about 72 lb. carcase weight and are from 9d. to 10d. per lb.

There is one point upon which the Southdown always scores, that is the demand for small joints; no other breed can supply the small joint with but little fat as the Southdown can, and butchers find no difficulty in disposing of the carcase throughout the district in which I farm which becomes more of a residential character every year.

From the time lambing begins until the lambs are weaned there is little that can be done to economize in labour as many who have tried to have found by bitter experience. If the lambs are kept going with the help of trough food the forwardest can be sold for fat lamb, although this outlet is being rapidly curtailed by the competition of lambs from the grass breeds. The remaining lambs can be sold at the autumn sales to farmers who still adhere, either from custom or necessity, to the growth of hoed crops such as swedes; but as far as my experience goes, nine years out of ten the advantage is with the breeder rather than the feeder.

Shearing is another expensive item in these times in spite of the use of shearing machines; in fact it is doubtful if, at present prices, wool leaves any margin after the cost of cutting and marketing has been met. As no doubt there are some chemists amongst us to-day, perhaps they will consider the possibility of introducing a dose of medicine which will make the sheep shed its coat as naturally as the horse does.

It is rather by the closest attention to detail than by any spectacular changes of method that the cost of keeping Southdown sheep can be kept down; and it must not be forgotten that the pure breeds must be kept going if for no other reason than the necessity of supplying the numerous farmers in the South and Midlands with rams suitable for mating with ewes of the mountain breeds for the production of early grass lambs, and for this purpose I, as a life-long student of Southdown sheep, know of no more useful and profitable ram than the Southdown.

https://doi.org/10.23637/ERADOC-1-205

SHEEP TRIALS AT SOUTH-EASTERN AGRICULTURAL COLLEGE

By N. V. HEWISON

The County of Kent is probably more thickly populated with sheep than any other county in England. A portion of the county in the extreme South-east known as Romney Marsh is renowned for its excellent pastures and also for the native breed of sheep, the Kent or Romney Marsh, that are grazed so successfully there.

Situation of Farms

The college farms are not situated on this excellent farming land, but are in the main, upland, lying on the southern slopes of the North Downs, a range of chalky hills running along the north of Kent and terminating at the sea-coast around Dover.

Soils

The soil ranges from a very thin chalk at the highest point, to a richer loam in the valley. The natural drainage is, in the main, good, which tends to make sheep farming easier than on some of the wetter lying soils, although during a severe drought the pastures burn badly.

Trials

The trials (of which a summary will be given later) that have been carried out at Wye with different breeds of ewes, were designed to try to find out which breed of ewe was the most profitable on our type of farm.

Similar types of soil are fairly common in the Province served by the College. It may be assumed that on better soils the results would be proportionately better.

Breeds kept

For a number of years pure bred flocks of Kent and Southdowns had been kept on the college farms; the Southdowns were kept

https://doi.org/10.23637/ERADOC-1-205

principally on the arable. The folding proved unremunerative and the Southdown flock was sold. Our attention was then turned to sheep on the pastures only. In 1924 it was decided to try another breed of ewe in addition to the Kents. The idea was to try to obtain a ewe that would give a high lamb average, also an early maturing lamb. The main points we had in view when deciding upon a breed, were getting a sheep to be kept on the pastures, and one that was of good quality, prolific, a good milker, reasonably hardy, and a sheep that would wear well.

Half-bred

The Border-Leicester Cheviot, or more commonly known as the Half-bred, was the ewe decided upon. The Half-bred, I am sure, needs no introduction from me. They are considered a commerical, rent paying breed of sheep, and combine in a remarkable degree the best points of both parents, the Cheviot ewe and the Border-Leicester ram.

Two tooth ewes known as gimmers are purchased, either at one of the Border Country Sales, or farther north.

Rams Used

The rams used for crossing are the Southdown and the Hampshire. The Hampshire is not used until at least two crops of lambs have been bred, as trouble at lambing might occur if the Hampshires were put on to the young ewes.

This year a Suffolk ram is also being used.

Disposal of Lambs

All the lambs are sold straight off the ewes, either as fat lambs during June and July or as store lambs early in August.

Last season no fat lambs were drawn. All the lambs were taken off the ewes on the morning of 1st August and sold at a local store lamb sale on that day.

Management of Flock

The system of running the ewes all breeds is as follows. They are run almost entirely on the pastures, and kept in lots of about forty. This number is more easily shepherded, and any ewe a little

https://doi.org/10.23637/ERADOC-1-205

bit under the weather stands a much better chance when trough feeding is in operation than when they are run in larger lots.

The ewes are allowed to run over the stubbles after harvest, this being the only time they are on the arable.

Mating

The ewes are mated the last week in October, allowing about forty ewes to one ram. They are run from two-and-a-half to three ewes per acre on the best fields and get little or no change of pasture. Some of the lambs are sold out of the same field in which their dams were mated, the ewes having been in the same field all through.

Feeding

Up to Christmas the ewes get their living on the pastures. After this date a little trough food is given, allowing ¼ to ½ lb. and if keep is very short ¾ lb. per ewe per day. The usual mixture is home-grown corn with cake to balance the ration. A month later mangels are carted out, allowing 6 lb. each per day. Hay is allowed only when snow is on the ground or during hard frosts.

Lambing

The lambing all takes place in the fields, the ewes are never housed or penned. As soon as possible after birth each lamb has its naval dressed with Iodised Phenol. This precaution is important and especially so where the ewes are driven in to lambing yards or any permanent lambing place that is likely to be contaminated. Thatched hurdles are erected about the field, these, with the hedges, are the only shelter. I have noticed in some districts in Kent that faggots are laid at random about the fields, and it is surprising the amount of shelter the lambs will get from these faggots. Tailing and castrating takes place nine to fourteen days after birth. The lambs are penned up in the field, care being taken not to have the pen in the same spot as the previous year, to avoid any risk of contaminated soil. Tails are burnt off.

Feeding Lambs

A month after lambing, trough feeding the ewes is discontinued. The lambs are encouraged to feed in creeps, and are allowed as much concentrates as they will clean up. Last year from birth to 1st August, the date on which they were sold, the lambs consumed an average of only 18 lb. concentrates.

https://doi.org/10.23637/ERADOC-1-205

Disease amongst Lambs

So far very little trouble has been experienced amongst the lambs with disease. As before mentioned, the fields are fairly heavily stocked with sheep, two-and-a-half to three ewes per acre and in the summer their lambs. If any scouring is noticed in an individual lamb, a pill is given, but no systematic pilling or drenching takes place.

Foot Troubles and Lameness

Probably the most difficult part of sheep management is keeping the flocks free from lameness. If a flock becomes badly infected with foot-rot it is a long and costly job to get them sound on their feet again, apart from the loss of condition of the animals affected. After lambing, as soon as the weather is favourable, all the ewes are penned up to be trimmed or dragged and at the same time the feet are pared. The ewes are then run through a foot bath containing Copper Sulphate or Cooper's Dip, whether they are lame or not. They all have the same treatment again in the autumn. The foot bath is of very little use unless the feet have been well pared previously.

Dipping

This is a most important part of sheep husbandry and should be carried out under the strictest supervision. A sheep badly dipped is worse than if it had not been dipped. The animal is only distressed and no good results come from the dipping. Any sheep we buy are always dipped immediately they have recovered from their journey. If this is not carried out they may spread ticks or something worse to a clean flock.

Flushing

No trough food is given to the ewes before mating, but the run that they have over the stubbles and after this on the young seeds, or aftermaths, brings them into good condition for mating.

We now have a flock of eleven score Half-bred ewes of various ages. A few of the original lot of Half-breds brought down in 1924 are still on the farm and are ready to come down with their seventh crop of lambs in a few days. The udders that they are making would put some heifers to shame.

In Report No. XI by Mr. Wyllie on Sheep Breeding and Feeding over four years on the college farms, some figures relating to the Half-breds may be of interest.

https://doi.org/10.23637/ERADOC-1-205

The average cost per year of keeping a ewe is 43s. 11d. and is made up as follows :—

		s.	d.
Corn and Cake	134 lb.	11	5
Hay	14 „		5
Mangels	807 „	4	11
Other foods			8
Grazing		14	11
		32	4
(1930-31 cheap foods do not come into this)			
Labour		8	0
Other items		3	7
		43	11

The profit per ewe over the four years (Half-breds) was 13s. 9d. That was on a lamb fall of 141 per cent., or putting it another way, the cost of rearing each lamb was 36s. 9d., the average profit per lamb was exactly 10s.; 1·38 lambs sold per ewe per annum at an average of 46s. 9d. apiece.

So far as can be seen the only way of increasing the profit is to increase the number of lambs per ewe. Feeding will be less at the present prices of Cake and Corn, but it is as well to keep in mind that any saving effected in this direction is at the expense of the corn crops and does not affect the total farm profits. Labour may be slightly reduced with a larger flock, but the main source of extra profit is more lambs reared per 100 ewes. The following figures may be of interest with regard to this.

In 1927 a small lot of ewes, nineteen, gave the following lamb fall. Thirteen ewes brought up thirteen lambs and six ewes brought up twelve lambs. The lambs were weighed at birth and again the day before they were sold. The average live weight gain for all lambs, doubles and singles, was ·67 lb. per day. Average age, 106 days.

The average gain live weight per day since birth for thirteen single lambs was ·70 lb.

The average gain live weight per day since birth for twelve double lambs was ·63 lb.

Live weight increase per ewe :

single lambs	76 lb. total
double „	131·83 „ „

or

Price of lamb realized at sale, per ewe :

	£	s.	d.
single	3	12	11
double	6	11	0

nearly double.

https://doi.org/10.23637/ERADOC-1-205

Kerry Hill

After working on the Half-breds for four years it was decided to try the Kerry Hill breed of ewe.

The Kerry Hill on the Welsh borders appears to fill the same place in that country as the Half-bred does in the northern border district.

Only two years' results are available as against six with the Half-breds.

The ewes are treated in exactly the same way as mentioned previously. In their first season they were crossed with a South Down ram. This cross did not come up to our expectations and a Hampshire ram was used the second season with much better results. This season a Suffolk ram is being run as well as the Hampshire.

Lamb Fall

The lamb fall for the

Half-breds for six years	.	137·34	per cent.
Kerry Hill „ two „	.	130	„ „

The Kerry Hill results are for two years only and would need to be taken through at least another two lambing seasons before a definite opinion can be formed.

Quality

Much has been written in the past about the small joint, both mutton and beef, and in certain quarters quite a wrong impression is gained with regard to this. In a great many provincial markets a large lamb or teg of good quality will realize just about the same per lb. as a small lamb or teg of the same quality, the total, of course, being much higher for the larger sheep, providing the quality is the same. Our aim must be to produce the very best quality and grow it as well as we can.

Pastures

Before closing I would like to say a word about the pastures and their treatment. I have mentioned the drainage as being important, but equally important is the sheep carrying capacity. To increase the number of sheep and lambs carried per acre, without getting the pastures sheep sick, and to increase the quality and quantity of the herbage, we started a systematic manuring of the pastures. Each

https://doi.org/10.23637/ERADOC-1-205

field has a dressing, every fourth year, of 10 cwt. of Basic Slag, or its equivalent in some form of phosphate. This application of phosphates in addition to improving the amount of grazing, I believe, brings old pastures more into line with young pastures, on which sheep and lambs do so well.

DISCUSSION

Mr. J. F. H. Thomas (Royal Agricultural College, Cirencester).—This Conference has surely brought to our minds a realization of the vast knowledge possessed by flockmasters, and we must realize what a great need there is for a wider dissemination of that knowledge, not only for the benefit of other flockmasters, but also for the guidance of those research workers who are in a position to investigate important problems in sheep husbandry.

There are three types of problems needing full and immediate investigation :—

(1) Those relating to breeding and crossbreeding.
(2) Nutritional and management problems.
(3) Problems relating to disease and disease control.

There is a need for the closest co-operation between the shepherd, the flockmaster, the research worker, and those who can undertake the collection and correlation of data under field conditions.

In November last the Experiments Committee of the Bath and West Show Society approved of a scheme of inquiry into sheep farming systems in south-west England. The main objects of this enquiry were :—

(1) To remedy the present lack of any large scale inquiry into the problems of the flockmaster.
(2) To obtain reliable information on the varied methods of sheep farming practised.
(3) To ascertain the success of recent modifications in methods of feeding and management.
(4) To obtain information on the main causes of loss.
(5) To demonstrate the importance of problems in sheep husbandry which need specialised research under field conditions.

With the helpful co-operation of the agricultural organizers of the counties concerned in the scheme, a large number of enquiry forms were sent out to flockmasters. As a result of that preliminary circula-

https://doi.org/10.23637/ERADOC-1-205

tion, in the capacity of investigator, I have received an immense volume of interesting and valuable information from flocks totalling about 40,000 breeding ewes. A brief summary of this data is now in process of publication as a preliminary report. The committee has recommended that for the future the investigation shall be restricted to four main problems of major importance.

Admittedly this whole project is an ambitious one, but it is an example of a systematic attempt to collect the valuable information which, by reason of his wide experience, the flockmaster possesses.

Finally the support which the scheme has already received clearly indicates the interest taken in an organized attempt to collect and correlate facts relating to sheep farming practice.

J. Hunter Smith (Oaklands, Hertfordshire).—Eight years ago Oaklands commenced a study of breeds and crosses of grass sheep. During the first four years Ryland—Kerry Hill—and Half-bred were tested for lambing performances and the lambs were also weighed periodically. The Half-breds produced more twins, and the lambs reached the marketing age more quickly.

The work during the next period of four years concentrated upon the Half-breds, and crosses with (*a*) Southdown, and (*b*) Suffolk were tested. The results showed that the Southdown produced earlier marketable lambs. There were a number of problems upon which information was badly needed, for example, Foot-rot and Intestinal parasites, since the life history of some of these parasites was absolutely unknown.

Mr. J. G. Stewart (Ministry of Agriculture).—The one great problem, was how to get over the depreciation on ewes. It had been stated that Half-bred ewes went on until seven or eight years old, but where do the thousands of culled ewes that are sold on the Borders every autumn go? They are purchased for 70s. to 80s. and go to England, where they breed a set of lambs and are then lucky if they fetch 40s. It seemed that the following suggestions had advantageous possibilities :—

(1) Buy gimmers.

(2) Buy well-bred ewe lambs at 50s.

(3) Half-bred lambs put to Hampshire and their lambs again put to Hampshire.

Another great problem was the equalizing of the lamb supply on the market. At the present time the market was flooded in summer and autumn. Lambs born in September were required, and of all breeds the Dorset Horn should be able to accomplish it. Going in for lambs as far as possible all the year round was suggested.

https://doi.org/10.23637/ERADOC-1-205 *pp 70*

Mr. JOHN JOYCE (Somerset).—Those flockmasters in Somerset who had bred to get two crops of Dorset lambs per year had generally stopped it. Breeding from ewe lambs with Dorset Horns was successful on account of the fact that they breed the first year, lambing at about seventeen months.

Mr. JOHN PORTER (Buckinghamshire).—A Staffordshire sheep farmer economized his rams, needed fewer, and therefore could buy the best. He took them out in a milk float at night and brought them in next morning.

A Bedfordshire farmer spoke of the value of Western Horn or Wiltshire Horn rams for crossing for fat lambs. They were very rapid growers. Kerry Hill ewes crossed with Western Horn ram produced lambs which were readily saleable at Bedford all through the summer.

https://doi.org/10.23637/ERADOC-1-205

https://doi.org/10.23637/ERADOC-1-205