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**A SURVEY OF AN ARGYLLSHIRE  
HILL-FARM DISTRICT, 1951-53**

By

J. B. McCREATH

and

R. D. MURRAY

REPORT No. 26

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6, BLYTHSWOOD SQUARE,

GLASGOW, C.2.



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MAP 1 - APPROXIMATE CONTINENT

0 = 200 FT.



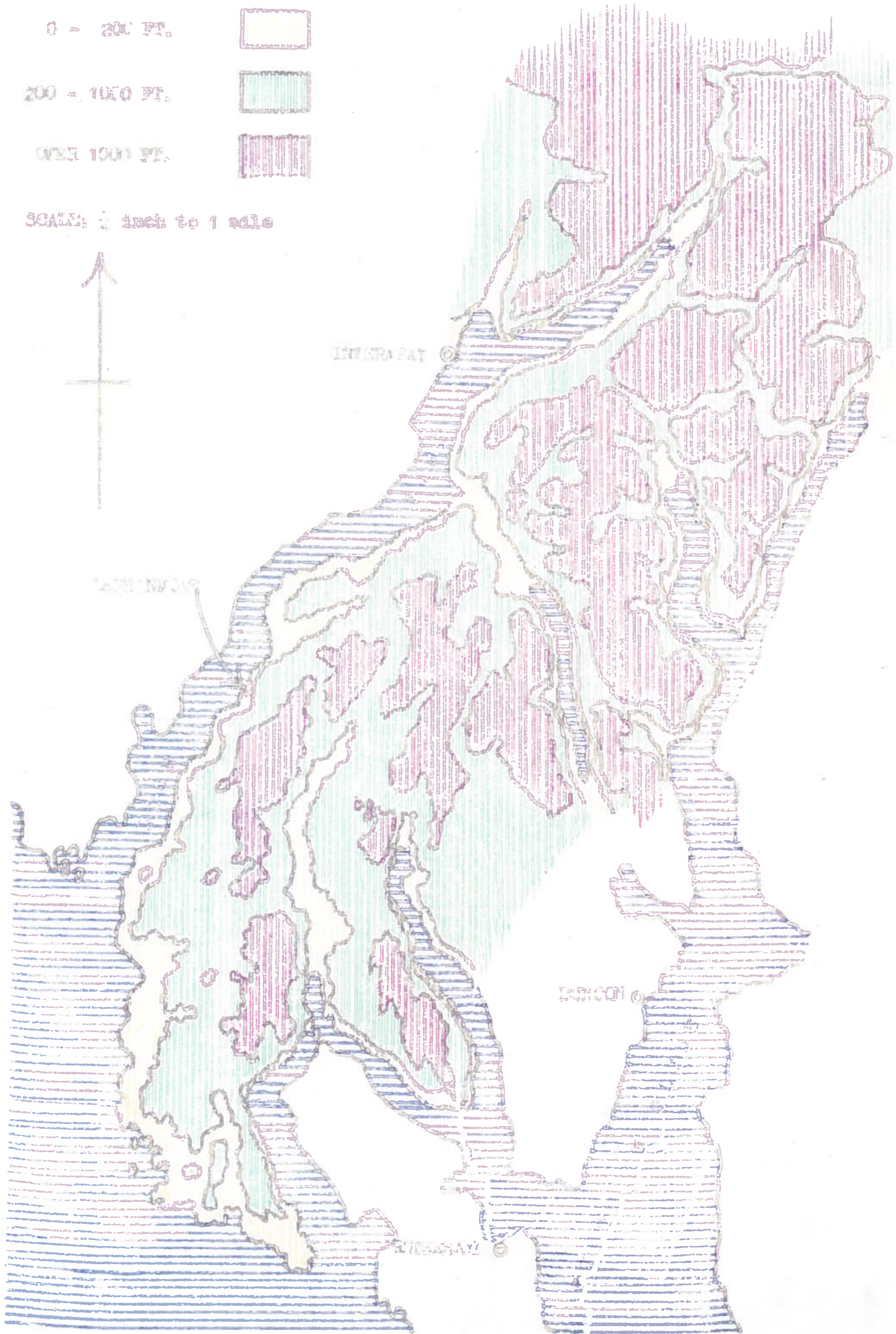
200 = 1000 FT.



OVER 1000 FT.



SCALE: 1/2 inch to 1 mile



MAP 2 - THE SURVEYED AREA

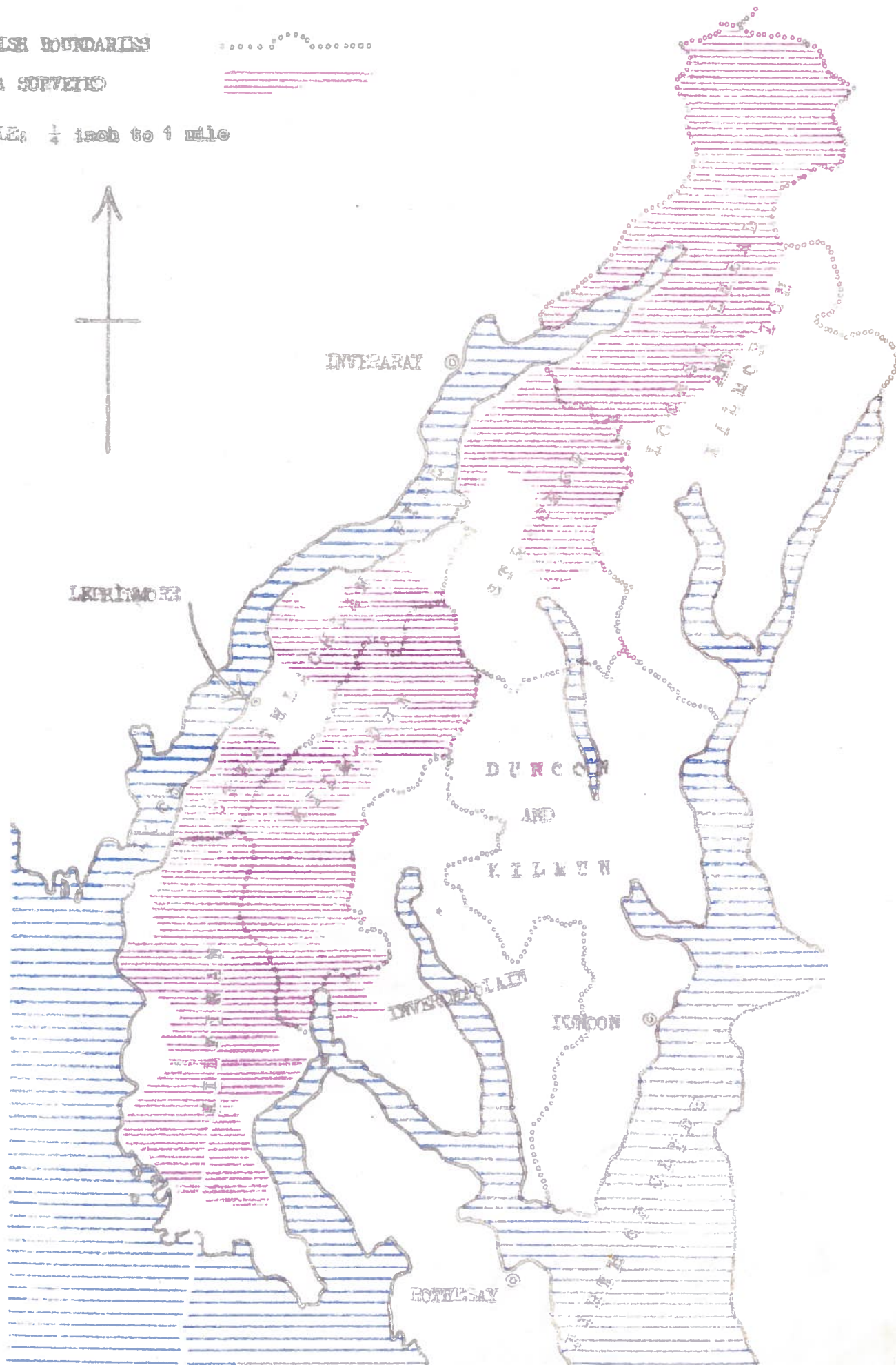
PARISH BOUNDARIES



AREA SURVEYED



SCALE: 1/4 inch to 1 mile





A SURVEY OF AN ARGYLLSHIRE HILL-FARM DISTRICT

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INTRODUCTION

This report presents the results of a survey carried out among hill-farms in the Cowal district of Argyllshire and in the vicinity of Lephinmore, one of the three research farms of the Hill Farm Research Organisation, (formerly the Hill Farm Research Committee of the Department of Agriculture for Scotland).

The survey was undertaken to obtain economic and husbandry information from such part of the Cowal district, in proximity to Lephinmore, as would provide a background picture of hill-farming around the research farm. An area was chosen which was considered to be representative of the Lephinmore environment and the information obtained is given herewith.

Although the survey was carried out primarily for local research purposes, it contains information of wider interest. It may also have value in providing a detailed record of hill farming in Argyllshire in the early 1950's.

The survey study commenced with the production year of 1951; that is, the farming year beginning about November, 1950 and ending about November, 1951. Climatically, that year was to a considerable degree abnormal. The summer and autumn of 1950 had seen high and prolonged rainfall; the winter - with low temperatures and repeated snowfalls - came unusually early and persisted into late spring. On the cropped areas of the lowground the yields of grain and fodder crops of 1950 had generally been below average and during the winter and spring of 1950-51, farms buying fodders for stock had to pay high prices. Only in one respect - a mild and open "back-end" in 1951 - did the survey year provide reasonably favourable farming conditions. It is necessary that these aspects be kept in mind when considering certain of the data presented, particularly so in relation to lamb crops, ewe death rates and the turnover of stock in that year.

A full report on the 1951 survey was privately circulated in 1952 but because of the unusual features in the 1951 year and the possibility of certain of the results being untypical, it was decided to defer a final report on the survey. Some parts were repeated in 1952 and 1953 and opportunity was taken to amplify and extend certain sections. Unless where otherwise stated or shown by the table-headings, information relates to the position in 1951. For those who have already had access to the report, it will be useful to know that the new material is contained mainly in Parts 1, 6, 8 and 9.

Throughout the survey the aim was to obtain a factual, mainly economic, picture rather than to prepare an appraisal. Equally important was the attempt to place on record material of the type which would provide reference and comparative points for future work. The animal health and disease aspects were not dealt with. Many aspects of the economics and husbandry of the hill-farming are not commented on; some, because the total sample is too small to break up into significant groups; others, because more detailed enquiry is necessary or because any consideration of them depends chiefly on scientific observation.

The farm of Lephinmore itself was not included in the survey and no comparisons between it and other farms are given in this report.

Acknowledgments.

The writers have great pleasure in acknowledging the assistance and co-operation of the landowners, farmers and others on Lochfyneside, Glendaruel and the Kyles of Bute area who provided the "raw material" for the survey. Their interest in the investigation, their unfailing patience in keeping records and their courtesy in replying to many points of detail are recorded with appreciation. The help afforded to the investigators by the local branch of the National Farmers' Union of Scotland was invaluable. The main part of this survey, dealing with the 1951 year, was undertaken jointly by J.B. McCreath and R.D. Murray, Additional information, on 1952 and 1953, was collected and collated by J.B. McCreath.

John B. McCreath.  
R. Douglas Murray.

PART 1.

THE FARMING STRUCTURE  
THE SURVEY AREA

The Cowal district of Argyllshire is a peninsula with a long and indented sea boundary comprised of Loch Fyne, the Kyles of Bute, the Firth of Clyde and Loch Long. (See Map 2). The narrow "neck" of land between the head of Loch Fyne and the head of Loch Long almost coincides with the boundary of Cowal, which district marches with Dunbartonshire, Perthshire, and adjoining Argyllshire districts of Lorn and Mid-Argyll.

Until the increase in the use of motor transport for haulage after the 1914-18 war, the district made its trading connections partly by sea transport to Greenock and Glasgow, and partly, by rail after driving to the station at Arrochar. To-day, market sheep and cattle, wool, hoggs for wintering and the incoming requisites - feeding, manures, etc. - are carried to a large extent by road transport. Much of the area is within the limits of a 2-3 hour road journey from Glasgow. While it is to some degree handicapped by the time and cost factors following on lengthy road-haulage, this is not so marked as with districts further west and north.

Up to the mid 1920's, practically the whole Cowal area was engaged in hill-sheep farming but the growth of afforestation has meant changes in some parts. As yet, the locality in which the survey was carried out has not been greatly changed but in some parts of it, planting is likely to proceed quickly in the immediate future. In fact, it is understood that one part of the work at the Lephimore research farm will be concerned with the relationship of hill-farming and forestry. Crofting areas, as found in the Islands and elsewhere, are absent.

The district of Cowal comprises seven parishes, namely, Lochgoilhead, Strachur, Strathlachlan, Kilfinan, Kilmodan, Inverchaolain, and Dunoon. Of these, the first five are closer to Lephimore and it was decided that the survey should not go outwith these parishes. Further, the most southerly part of Kilfinan parish is made up of farms either with considerable lowground or with rough land lying at a low altitude and much of this area was also excluded. This is illustrated by the contour markings on Map 1, while the shaded area of Map 2 indicates the limits of the area surveyed.

Cowal contains a considerable amount of land over 1000 feet, and this is true of the northern part of the survey area and to just south of Lephimore about Otter Ferry. From there southwards, there is an increasing area of low-lying land which culminates in the Ardlamont district, where farms are mainly low-ground in character and, for this reason, omitted from the survey. The eastern extension of the survey embraced mainly the Glendaruel locality, that is, a considerable part of the parish of Kilmodan.

In general, a hill range with a western slope towards Loch Fyne and steeper eastern slope into Glendaruel is fairly typical of the area surveyed south of the village of Strachur. North of Strachur there are various combinations of west to east, and north to south slopes, with some of the high ground going almost to the 3000 feet level.

A first general impression of the hill grazings is of grassy hills rather than of hills with a very high proportion of heather and again, the general impression is of slow-draining, wettish, western slopes.

Rainfall, generally, is high. In the district around the head of Loch Fyne, a figure of 70"-90" per annum probably presents a typical average, while to the south, it is rather lower at 60"-70" per annum.

In brief, the geological features of the area are:-

- (i) The parent rock in the area is a "Dalradian" or "Southern Highland" schist. In parts where the slope is gentle or natural drainage poor, there may be a peat overlay. In other parts the land rises steeply from the sea as schistose headlands, e.g. Evanachan Rocks and Ormidale Point.

- (ii) The arable lowground is largely "strath" land, (as at Strachur, Strathlachlan and in Glendaruel), where the soils are predominantly alluvial and/or glacial, or less commonly, the "inver" land formed at the sea-mouth of hill burns as at Lephinmore itself or the adjoining Lephinchapel farm.
- (iii) South of Otter Ferry, the arable land is concentrated largely on land of a "raised beach" type.

As farming types other than "hill-sheep" or "stock-raising" are of very minor importance within the area, there were no great difficulties over selection. Except for one case, farms combining a dairy with a hill or moor ewe flock were excluded, as were mainly lowground units or detached pieces of land not farmed in conjunction with hill-farms. Other than those, and Lephinmore itself, every farming unit was approached for information, the resulting area covered being shown approximately on Map 2.

In all, 41 farming "units" (made up of a rather larger number of farms), co-operated by supplying all, or part, of the required information. The relationship of the farming area and the ewe-stocks on these farms to the parish totals was:-

Table 1 - The Survey Sample  
Comparison of Survey with Parish Totals. †

<u>Parish of:-</u>	<u>Crops and Grass</u> <u>and Rough Grazing (Acres)</u>			<u>Ewes for Breeding</u>		
	<u>Parish</u> <u>Total</u>	<u>Survey</u> <u>Total</u>	<u>Survey</u> <u>%</u>	<u>Parish</u> <u>Total</u>	<u>Survey</u> <u>Total</u>	<u>Survey</u> <u>%</u>
Lochgoilhead	56,513	25,165	45	12,131	8,584	71
Strachur	15,089	5,926	39	5,094	2,457	48
Strathlachlan	12,268	7,311	60	3,283	1,924	59
Kilfinan	34,484	26,773	78	8,226	7,089	86
Kilmodan	31,898	23,251	73	8,029	6,532	81
	<u>150,252</u>	<u>88,426</u>		<u>36,826</u>	<u>26,586</u>	

Note:- The totals given for the parishes relate to the position at 4th June, 1950 and the survey figures to November, 1950.

Considering the five parishes as one area, the survey records relate to farms comprising 59% of the farming area and 72% of the ewe stocks in this area.

#### THE AFFORESTATION POSITION

In 1950-51, afforestation had not proceeded as far in the survey locality as in some of the other Cowal parishes, but as the Forestry Commission have access to considerable tracts of land within the area, a planting programme is in hand. Of the 41 units included, an approximate classification in relation to Forestry Commission operations is:-

	<u>1950</u>	<u>1953</u>
Planting completed, leaving an agricultural unit	1 unit	4 units
Farmer no longer having access to certain land	1 "	-
Farming area already reduced by planting	1 "	1 "
Planting expected to begin shortly	2 units	1 "
Farm area not affected	36 "	35 "
	<u>41 units</u>	<u>41 units</u>

Over all, the hill-farming operations in 1950-51 had not been greatly influenced by afforestation, but any future survey will show some reduction in the number of farms, a decrease in the farming area available to some farms, or a combination of both these changes.

The figures for 1953 given above summarise the change after three years.

† The parish totals of the 4th June returns for 1950, as used in Table 1, and elsewhere, were supplied by Farm Economics Branch of the Department of Agriculture for Scotland.



THE FARMS AND MANAGEMENT UNITS

When considered as farming units from the management aspect, the farms for which survey records were taken showed some variation. A classification was made as follows:-

- Type 1:- Single, wholly or mainly self-contained units. In these cases the unit was an individual "farm" within a continuing boundary.
- Type 2:- Single units, but having access to considerable additional grazing or detached lowground. In these cases the locally recognised "farm" was worked in conjunction with additional land.
- Type 3:- Units made up of two or more "farms", (either "marching" or separate), under personal or partnership management.

Table 2 - The Management Units

<u>Management Type of Unit</u>	<u>No. of Units</u>	<u>No. of Farms</u>	<u>Total Acreage</u>	<u>Total Ewes (November, 1950)</u>
Type 1	29	29	42,734	13,382
Type 2	8	9	20,882	5,453
Type 3	4	9	24,810	7,751
Total	<u>41</u>	<u>47</u>	<u>88,426</u>	<u>26,586</u>

In the locality surveyed, the individual "farm", wholly or mainly self-contained, was the most common management unit, accounting for 29 out of the total of 41 units. In contrast, 4 of to-day's "management units" covered 9 locally recognised "farms".

The "one farm" management units (Type 1) accounted for one half of the acreage and one half of the ewe stocks covered by the survey records.

The Size of the Farming Units

Even within the small survey the range in size of the farming units was wide - 2 units were of less than 500 acres and 3 units were classified into a group of "5,000 acres and over".

For the most common type numerically - the single, self-contained farm - the average size was just short of 1,500 acres, carrying 23 score of ewes.

Table 3 - Average Size of Units

<u>Management Type of Unit</u>	<u>No. of Units</u>	<u>Average Size (Acres)</u>	<u>Average Sheep Stock (Ewes)</u>
Type 1	29	1,474	461
Type 2	8	2,610	682
Type 3	4	6,202	1,988
	<u>41</u>		

When grouped according to acreage, the units showed a steady progression, with no size type markedly more common than any other.

Judged by the size of the ewe-stocks, 21 units were carrying less than 23 score (460) ewes; 14 units were carrying between 24 score and 40 score (480-800) ewes; while 2 units had very large ewe-stocks.

LAND TENURE

Ownership and Tenure

Of the total area of farming land represented, only about 7% was "owner-occupied" land, with an additional 10% owned by public bodies. The remaining 83% of the surveyed acreage was land owned by 16 estates of varying size, with some of the farms let to tenants and some farms "in hand".

Table 4 which follows, illustrates the position of the various types of tenure from the viewpoint of residence on the units or responsibility for their management.

Table 4 - Land Tenure Types

	<u>No. of Units</u>	<u>Total Acres</u>	<u>Total Ewes</u>
Tenants	28	44,645	14,136
Owner-occupiers	3	4,570	1,459
Managed for tenants or owner-occupiers	2	3,567	1,647
Estate farms in hand	8	32,154	8,734
Owned and managed by Public Bodies	1	3,490	610
	<u>42</u>	<u>88,426</u>	<u>26,586</u>

Note:- This table shows an additional unit over 41, because a management unit of 2 "farms" covers one tenanted and one owner-occupied.

Numerically, and also by the standards of total acreage and total ewe-stocks, the tenanted units, (with an average size of around 1,500 acres and carrying about 25 score of ewes) were the most important farming units. This group was followed in importance by the "estate farms in hand" type, which accounted for rather over one-third of the total surveyed acreage.

Tenancy

Information was obtained on the length of occupancy and on leases on tenanted farms. A summary of this is given in Table 5.

Table 5 - Length of Occupation and Lease Position

<u>Period of Entering On Present Tenancy</u>	<u>No. of Tenants</u>	<u>Number Holding on:-</u>	
		<u>Lease</u>	<u>Tacit Relocation</u>
1946 - 1951	7	6	1
1940 - 1945	8	4	4
1930 - 1939	10	1	9
1920 - 1929	4	-	4
Prior to 1920	2	-	2
	<u>31</u>	<u>11</u>	<u>20</u>

It was possible to obtain information on the length of current leases for the 11 farms still holding on lease:-

1 farm working out a 5 year lease  
 8 farms " " a 10 year lease  
 1 farm " " a 14 year lease  
 1 farm " " a 15 year lease

Rental Values

As the rental value position on "owner-occupied" farms and on "estate farms in hand" is likely to differ somewhat from that on tenanted farms, the rental values were classified in two groups, namely, "tenants" and "others".

Table 6 - Rental Values in 1951  
Number of Farms in Various Rental Groups

<u>Rent per acre</u>	<u>Number of Farms</u>		<u>Rent per Ewe</u>	<u>Number of Farms</u>	
	<u>Tenants</u>	<u>Others</u>		<u>Tenants</u>	<u>Others</u>
Under 6d	-	1	1/- - 2/-	-	1
6d. - 1/-	11	5	2/- - 3/-	9	4
1/- - 1/6	9	3	3/- - 4/-	9	3
1/6 - 2/-	4	3	4/- - 6/-	7	3
2/- - 2/6	4	-	6/- - 10/-	3	2
2/6 - 3/-	1	-	10/- & over	1	-
3/- & over	-	1			
	<u>29</u>	<u>13</u>		<u>29</u>	<u>13</u>

Of the tenanted farms, 24 out of 29 were rented in 1951 at not more than 2/- per acre of total farming land (crops and grass and rough grazings). On a basis of "rent per ewe" (i.e. total farm rent divided by the size of the ewe-stock), the majority of the tenanted farms were paying between 2/- and 6/- per ewe carried.

On an average giving each farm equal weight, the average rental value per acre was 1/4d (tenants) and 1/3d (others); the similar figures for rental value per ewe being 4/2d (tenants) and 4/3d (others).

#### CONDITION OF LAND AND BUILDINGS

As in most hill farming districts in Scotland, the general condition of the land and steadings showed signs of deterioration. There was ample evidence of land, which at one time had been well drained and fenced, now in need of further drainage and fencing. Similarly, steadings, which were perhaps adequate at the time of building, were now outdated and in need of renovation. This gradual deterioration is natural with the passing of time but the low level of financial return to both landlord and tenant, brought about by long periods of comparative depression in the hill sheep industry, has aggravated the situation.

Although it is difficult to condense all the evidence from the farms in question, an attempt has been made in this section of the report to summarise the information under four main headings, viz. lowground, hill, steading, and housing. It must be pointed out that the summary consists of the farmers' <sup>X</sup> opinions and is not an appraisal by the writer.

#### LOWGROUND

This term covers both arable land and permanent grass; in short all the land below the hill dyke.

#### Drainage

With regard to drainage on the lowground, out of a total of 43 farms (as distinct from units), 10 were adequately drained naturally due to their situation and soil; on a further 7 farms the lowground was well drained artificially by means of tiles. On other 16 farms, lowground drainage was said to be generally poor. This was due to the breakdown of the existing systems of drains, mainly stone and tile, rather than to the absence of drains altogether. On two of these farms, with low lying meadows beside a river, drainage was almost impossible due to the lack of fall. Also the meadows were very liable to flooding. On the remaining 10 farms drainage was said to be "fair".

In brief, it would seem from farmers' opinions that just over half the units in the area had lowground which was moderately well drained.

Although quite a high proportion of farmers said that drainage of their lowground was inadequate, it would be unfair to convey the impression that the area was one of water-logged fields. Rather was it a case that on those farms the production of certain fields could be improved by the renewal or repairing of drains.

In 1951, 6 farmers were carrying out drainage work on the lowground and in four of these cases such work was part of a comprehensive scheme under the Hill Farming Act.

#### Fencing

The state of fencing on the lowground was generally better than the state of the drainage. 18 farms had good fences round their lowground fields. On other 16 farms the fences were in fair order; on the remaining 9, the fencing was said to be from poor to very bad.

In 1951, 5 farms had just had or were having fencing done as part of comprehensive H.F.A. schemes.

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<sup>X</sup> The term "farmer" in this section covers landlords, tenants and managers.



### Bracken

Although the extent of bracken infestation on the hill grazings was serious on many of the farms in the area, as yet the amount of lowground affected was negligible. On 6 farms however, bracken had encroached rather badly on certain 'in-by' fields. On all 6 units, efforts were being made to bring the spread under control by cutting, either with scythes or machines.

On the lowground on several other farms, bracken was present but in negligible proportions. It cannot be over-emphasised however, that these patches of bracken, if not controlled, could be the forerunners of a more widespread and serious encroachment.

### Vermin

The most troublesome animal on the lowground was the rabbit. Throughout the area rabbits were very numerous and in one locality were regarded as a plague. Two or three farmers in that locality complained of the damage and loss of feeding caused by rabbits and on one farm the acreage and choice of greencrop was restricted. In the same area, deer were occasionally troublesome in winter.

Foxes and hooded crows were said to be on the increase but their activities were mainly on the hill, especially at lambing time.

### HILL GRAZINGS

#### Drainage

As stated earlier, rainfall over the area is fairly heavy, ranging from about 60 to 90 inches per annum depending on locality. Also, due to the geological formation the western slopes are generally slower draining and wetter than the eastern slopes.

In the opinion of individual farmers, 18 of the hills were adequately drained either naturally or by existing open drains. On the remaining 25, there was a need of drainage in parts but in two cases the need was widespread.

From the end of the war till 1951, 12 units had had hill draining done. The drains were of the open ditch type cut generally by machine. The schemes ranged from 300 chains on one farm to 8,000 chains on another multiple unit. Three of the programmes had been carried out as part of comprehensive H.F.A. schemes.

The opinion was voiced on a few occasions that some hills were "too well drained". With the old method of cutting the drains at too steep an angle, the ditches became quickly gouged out by the fast-flowing water thus forming deep dangerous channels which could, in times of heavy rain, become a "death trap for sheep".

#### Marches

Generally the limits of each hill were marked by such natural boundaries as burns and watersheds. In all, 32 hills had open marches except where they met forestry plantings. On the remaining 11 farms the hills were enclosed by stone dykes, 6 of which were in good repair. On 10 farms there were dykes on the hill splitting it into hirsels but on all but 3 farms these internal dykes were now in ruins.

#### Shelter

The need for planting trees as shelter belts on a hill farm depends on two main factors:- the direction the hill faces in relation to the prevailing winds and the amount of natural shelter afforded by glens and scrub woods.

In the area surveyed, the farms could be grouped into two main geographical regions as far as exposure was concerned. (See Maps). The following paragraphs summarise the rather complex position.

Farms on Loch Fynside	25
" in Glendaruel	13
" elsewhere in area	5

About 80% of the hills in the Loch Fynside group had northerly and/or westerly exposures and 17 of the hills in this group had, in the opinion of the farmers, adequate shelter from "the lie of the land" and from woods and scrub. On 6 other farms, the hills were exposed and in need of shelter belts if cattle were to be outwintered. On the remaining 2 hills, shelter belts were already established.

In Glendaruel, the hills on one side of the glen generally had an easterly exposure (8 cases) and on the opposite side a westerly exposure (5 cases). Five of the hills already had adequate shelter and one had a shelter belt. On the remaining hills, especially those exposed to the east wind, the farmers were of the opinion that shelter belts would be beneficial.

Of the five other farms elsewhere, only one hill had sufficient natural shelter. Despite the exposure, two of the four farmers did not think that shelter belts would be advantageous.

Opinions and views on shelter belts were definite yet divided. The three farmers in the surveyed area who already had shelter belts, were well satisfied. Indeed, one expressed the opinion that without them the outwintering of cattle would be impossible on his hill. On farms with exposed hills, the farmers, except for the two mentioned above, were in favour of properly sited shelter belts. On farms where the need for shelter was not so great, opinion was divided. The main arguments against planting trees for shelter were:- the expensive nature of the operation; the fear of sheep being trapped during snowstorms; an increase in vermin and doubts whether trees would grow in the exposed places where they were most needed.

Heather

When passing through the area, the impression is gained that the hills are, in the main, grass hills. An individual examination of each farm however, shows that heather is important on many hills in the area. When each occupier was asked whether he would classify his hill as mainly grass or mainly heather, the following answers were given.

Mainly heather	22
" grass	13
Grass and heather (50:50)	8
	<u>43</u> hills

Some 14 tenant farmers had a specific clause in their leases regarding the amount of heather to be burned annually (usually not more than 1/10th) but only on 8 of these farms had the lease provisions to be strictly followed at the present time.

Although there was some argument about the optimum amount to be burned each year, all were agreed on the need for regular rotational burning. The number of years before reburning an area varied from 3 to 10. Some farmers mentioned the danger of overburning thus causing the heather to die out with a resultant invasion of bracken or "white grass". On the other hand, heather if left too long unburned became stemmy and when burned the young shoots took a long time, if ever, to recover. In general the weather at burning time was the main limiting factor.

On the grass hills, muir-burn was also practised. Generally, the "white grass" areas were burned every third or fourth year.

Bracken

The bracken plant was widespread throughout the area. Only 2 out of 43 hills were free from bracken. 20 hills were said to be badly - and in a few cases, very badly - infested with bracken; 15 were moderately bad and the remaining six were slightly affected.

Despite the detrimental effect of bracken in the stock carrying capacity and ultimate selling value of a farm, on 20 farms - 10 of which were said to be badly infested - no methods of control were being carried out. The main reasons for this were given as:- the nature of the terrain precluded the use of machines; lack of labour both regular and casual and the cost of contract labour even if available.

On the other affected hills, the majority of the bracken cutting was done by hand scythe. Three units owned bracken destroying machines. Three farms had bracken cutting included in comprehensive schemes under the Hill Farming Act.

#### STEADINGS

It is difficult to summarise all the information on the present state of steadings on 41 units. The following statement gives the broad picture.

	<u>No.</u>
Present stading adequate and in fair to good condition	13
" " " but in poor to very bad condition	16
" " inadequate (6 of which in poor condition)	9
Steadings being renovated under H.F.A. schemes	<u>3</u>
	<u>41</u> units

Apart from the general renovation needed on most steadings, two of the drawbacks mentioned most often were the lack of a proper hay shed (11 cases) and the poor condition of fanks (13 cases). Two units had no dipper and at handlings sheep had to be taken to a neighbour's fank.

#### HOUSING

In some districts there is often a connection between shortage of hired labour and the number and condition of farm cottages. If the district is remote, the condition of the cottages is even more important. In the surveyed area generally, there was not a shortage of hired regular labour but casual labour was scarce. It has to be remembered, however, that in the area family labour was very important. (See Page 19).

Within the area there were localities - especially towards the southern end of the area and consequently further away from the main Glasgow to Inveraray road - where it was said to be difficult to procure reliable regular workers. In these localities, several of the farmers, who had to employ hired labour, mentioned the lack or the poor condition of farm cottages as one of the main drawbacks. Allied to this, were the remoteness from schools and the shortage of public transport facilities.

In all, six units in the area had no cottages although they were needed; and on a further six, the existing cottages were either without water or in need of major repairs. Five farm houses were in poor condition.

In 1951, three farm houses and the cottages on a fourth unit were being renovated under Hill Farming Act schemes.



PART 2

LAND UTILISATION AND CROPPING

Throughout this section the acreages taken on the survey refer to the position in 1950, i.e. the crop grown in preparation for the winter of 1950-51.

The Proportions of Rough Grazing and Lowground

Although it is difficult to distinguish between "permanent grass" and "rough grazings" on certain in-bye land on hill farms, the information was collected in such a way as to try to make this distinction. The rotation land, plus this permanent grazing acreage, made up what has been termed "lowground", and this is equivalent to the "crops and grass" of the Agricultural Returns. Over the total area surveyed, "lowground" - as distinct from rough grazings - made up slightly over 3% of the total farming land.

The range of lowground acreage was wide, but with a tendency for the smaller units to show a rather higher proportion of lowground in relation to the area of rough grazings.

If the two extremes - small and large farms - are omitted, lowground did not exceed 8% of the total farm area and in one group was as low as 2.4%.

There is some value in placing this local importance of lowground - determined mainly but not wholly by contour and topography - against a wider background. From the information in the official report<sup>‡</sup> - "Types of Farming in Scotland" - the best comparisons and contrasts are obtained by using the statistics of the "Hill Sheep Farms" and "Dairy with Hill Sheep Farms", (a farming type not uncommon in adjacent Argyllshire districts), against the Lephimore area farms.

Hill Sheep Farms:	Scotland.	Crops and grass averaged	2.3%	of farm area.
	S.W.	" " " " " "	3.7%	" " "
Dairy & Hill Sheep:	Scotland	Crops and grass averaged	13.2%	" " "
	S.W.	" " " " " "	17.5%	" " "

Although the survey area as a whole is one where the proportion of lowground to rough grazing is low, appraised by these standards, 28 of the units had a higher proportion of lowground than the averages for hill sheep farms in Scotland and South-West Scotland. Only 2 units, however, had as much as 13% of crops and grass.

The Rotation Area on the Lowground

For the whole survey area, 55% of the lowground was given as being in rotation, leaving 45% as permanent grass of variable quality. In not all cases was the rotation land confined to a definite area or part of the farm; occasionally small parts of outlying land were broken for a crop rotation.

The Crops on the Lowground

For the classification in this section the term "cropped acres" was used. This includes:-

- All ploughland crops.
- Plus any area directly reseeded in 1950.
- Plus Hay taken from the rotation or permanent grassland areas.

Records from 40 units were available for this analysis. Of these, 39 had ploughland crops in 1950 and 1 unit did not normally plough. Among the 39 units were 4 which had carried out some direct re-seeding in 1950.

A summary showing the importance of individual crops over 40 units is:-

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<sup>‡</sup> Types of Farming in Scotland. D.O.A.S. 1952.

Number of units with:-

Oats: sown-out	35 units
Other oats	32 "
Potatoes	38 "
Turnips and Swedes	23 "
Kale	5 "
Rape (alone)	6 "
Rape (with seeds)	8 "
Direct reseed	4 "
Rotation Hay	37 "
Meadow Hay	28 "

For the crop year of 1950, none of the farms made grass or arable silage.

The utilisation of the "cropped land" (which includes the cutting of rotation and meadow hay) was:-

	<u>Units Having, in 1950:-</u>		
	<u>Up to 20 cropped acres</u>	<u>20 - 50 cropped acres</u>	<u>Over 50 cropped acres</u>
Number of units	17	17	7
Average cropped acres	11	31	69
<u>% of cropped acres under:-</u>			
Ploughland	50	39	53
Direct reseed	-	1	5
Rotation hay	20	29	31
Meadow hay	30	31	11
	<u>100%</u>	<u>100%</u>	<u>100%</u>

This shows to what extent crops and hay were available from the 1950 crop on the lowground, to meet the needs of sheep and cattle in 1950-51. For 17 units the produce of only 11 acres of cropped lowground was available, and of this acreage about 50% was hay land. An additional 17 units averaged only 31 acres of cropped land - of which 60% was hay.

Finishing Crops

In hill-farm areas the ability to "finish", at home, certain lambs or other sheep depends on the acreage of roots, rape or hay foggage, (aftermath), on the lowground. During the survey enquiry was made to determine the extent to which these farms grew, or had available, finishing crops other than roots, for this purpose. A summary is:-

Having both rape and foggage	13 units
" foggage only	9 "
" rape only	1 "
Not having, or using, finish crops	18 "
	<u>41</u>

For the 14 units which had a rape crop in 1950, the average acreage was about  $4\frac{3}{4}$ , while 8 of these 14 units used the rape crop, undersown with grass seed, to lay down pasture.

The Lowground Grasslands

As was to be expected, the units with a restricted area of lowground had a higher proportion as "cropped acres" with correspondingly less available as grazing land, than where the lowground area was more ample. Table 7 shows this in summary form.

Table 7 - Lowground Crops and Grass

<u>Lowground Size Groups</u>	<u>No. of Units</u>	<u>% as Grazing Land</u>	<u>% as Cropped Acres</u>
Under 20 acres	3	9.7	90.3
20 - 50 "	16	47.7	52.3
50 - 100 "	14	52.8	47.2
100 - 200 "	7	65.9	34.1
Around 300 "	1	69.9	30.1
Survey Area	<u>41</u>	<u>58.4</u>	<u>41.6</u>

The grazing land accounted for above excludes any grazing available before or after the hay crop.

PART 3  
THE LIVESTOCK

Relative Importance of Sheep and Cattle

As a preliminary to this part of the report - which summarises some statistical information regarding the livestock and the wool clip - it is of interest to show the relationship of sheep and cattle in the area.

The statistics giving totals at June, 1950 for the five parishes provide a general picture of the relative importance of sheep and cattle. While the method of comparison used, namely "ewes per cattle beast", is not ideal, it does illustrate the comparative importance. Naturally, the lower the number of ewes per cattle beast the greater the importance of cattle and vice-versa.

<u>Parish of:-</u>	<u>Total Ewes</u>	<u>Total Cattle</u>	<u>Ewes Per Cattle Beast</u>
Lochgailhead	12,131	1,021	12
Strachur	5,094	467	11
Strathlachlan	3,283	217	15
Kilfinan	8,226	1,446	6
Kilmodan	8,092	598	13

It is possible to view more clearly the sheep to cattle relationship in these parishes by reference to the figures provided for Scottish hill-sheep farms in the "Types of Farming" report. X By the 1947 figures in that report, the average hill-sheep farm in Scotland showed figures of 22 ewes per cattle beast, the comparable figure for South-West Scotland being 19 ewes per cattle beast and for the Highlands, 22 ewes per cattle beast. This proportion will, of course, vary between districts and between farms in relation to the available lowground and to the possibility of out-wintering, and will also depend on the density of ewe stocks on the sheep runs proper.

It would appear that, in these five parishes of Cowal, cattle were relatively more important per farm than on the average hill sheep farm in Scotland.

The position regarding the units surveyed was:-

Table 8 - Relative Proportions of Cattle and Sheep

<u>Number of Ewes for Each Cattle Beast</u>	<u>Number of Units</u>
Up to 10 ewes	12
11 - 20 "	16
21 - 40 "	6
41 - 80 "	3
81 - 160 "	1
161 - 300 "	2
	<u>40</u>

On one unit, no cattle at all were kept.

The above relates to total cattle, from mature breeding cows to young calves inclusive. On this basis, 28 out of the 41 units were carrying at least one cattle beast for each score of ewes. Over the survey area, the average number of ewes per cattle beast was 17.

SHEEP

The Breeds

The predominant breed was the Blackface and of the units surveyed only one did not produce Blackface lambs. This farm ran a pure-bred South Country Cheviot flock.

In every case the sheep were hill flocks, although one unit had a very few Border Leicester ewes and a ram on the lowground.

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X Types of Farming in Scotland. D.O.A.S. 1952



Stock Carrying Capacity

The following table gives information on the density of stocking by sheep in the various size groups:-

Table 9 - Farm Acres per Ewe

<u>Acreage Size Groups (Acres)</u>	<u>No. of Units</u>	<u>Average No. of Acres per Ewe</u>
300 - 500	2	1.9
500 - 750	6	2.9
750 - 1000	4	3.1
1000 - 1250	3	3.0
1250 - 1500	4	3.0
1500 - 2000	9	3.2
2000 - 2500	7	3.4
2500 - 5000	3	4.2
Over 5000	3	3.4
	<u>41</u>	

The overall figure for the area surveyed was 3.3 acres per ewe. For individual units, the heaviest stocking was 1.4 acres per ewe (this was on the second smallest farm surveyed) and the lightest was 8.4 acres per ewe. The latter unit, however, was in process of restocking.

As it was thought that the effect of the heavy snow storm of February, 1947, might still be reflected in the stock carry figures of 1951, information was obtained on this point. On only one unit was there still a deficit (3 score) to be made up. Other two flocks contained sheep purchased as a result of the snow; one breeder having bought about 7 score of gimmers in 1947, the other some 2 score of ewe hogs in 1949. The remaining units which had been short had rebuilt their flock numbers before 1950-51, either by retaining more ewe lambs or by keeping the cast ewes for an extra year. One farm had sent the cast ewes of 1947 to the 1947-48 wintering and then kept them another season with good results. On the whole, therefore, the figures taken as representing stock-carry, can be regarded as giving a normal picture.

Wool Output

The information obtained on wool output in 1951 relates to 34 units which provided accurate figures from the sales invoices of the Wool Marketing Board. These returns were linked with the clipping counts on these units. It was not possible however, to separate off the individual clip averages for ewe hogs, ewes and rams, and thus the output figures are expressed "per clipped sheep". Also, the term "fleece wool" is used to indicate the weight excluding "dags", "docks", etc.

Over the 34 units, the average fleece weight per clipped sheep was 3.86 lbs - the weight range for individual units being from 2.4 lbs to 5.4 lbs.

An indication of the range of weights is:-

Table 10 - Weight of Fleece Wool per Clipped Sheep (1951)

<u>Fleece Weight Groups</u>	<u>Number of Units</u>
Under 3 lbs.	1
3 - 3½ "	8
3½ - 4 "	16
4 - 4½ "	6
4½ - 5 "	2
Over 5 "	1
	<u>34</u>

Taking the "dags", "docks", etc., into account, the overall weight of wool per clipped sheep was 4.18 lbs.

In 1952 similar detailed information on the wool clip was obtained from 23 units. There was no significant change in the average weight of wool sold per clipped sheep. The actual average fleece weight was 3.92 lbs and when "docks", "fallen", etc., were included, the total weight of wool per clipped sheep was 4.16 lbs.

Wedder Stocks

Although on every unit visited the ewe flock was the foundation of the sheep economy, certain farms carried a small supplementary wedder stock. Only one unit - and that one of the largest multiple units - had a definite wedder hirsels; on the other units ewes and widders grazed together. 4 units had no widders of any age.

Since the actual numbers of widders on each unit - ranging from over 500 to less than half a score - did not give a true indication of their relative importance, a calculation was made expressing the wedder numbers as a percentage of the ewe flock in each case. Furthermore, as quite a number of units were keeping wedder hogs purely as replacements for older wedder stocks, the number of "older widders per 100 ewes" was taken as the most reliable indicator.

Table 11 - Relative Importance of Wedder Stocks  
Over 27 Units

<u>Older Widders per 100 Ewes</u>	<u>No. of Units</u>	<u>Total No. of All Widders</u>	<u>Total No. of Ewes</u>	<u>All Widders per 100 Ewes</u>
25 and Over	1	200	338	59
10 - 15	3	332	1423	23
5 - 10	6	1389	8564	16
Under 5	17	492	10137	5

Only 10 out of the 27 units were carrying one or more older widders per score of ewes. The overall wedder-stocking density of the 27 units was 6 older widders and 6 wedder hogs for each 100 ewes.

CATTLE

The survey area cannot be regarded as being in extreme isolation from the direct and indirect influence of the liquid-milk market, as small local markets are provided within Strachur and Kilmodan parishes, while a rather larger outlet arises from the residential area on the Kyles of Bute coast. Further, the demand for milk-stock by producing areas within and outwith Cowal makes its influence felt on cattle breeding policy. The following parish totals relating to June, 1950, show the position as regards dairy and beef stock.

<u>Parish of:-</u>	<u>Total Dairy Cattle</u>	<u>Total Beef Cattle</u>	<u>Total Cattle</u>
Lochgoilhead	289	732	1021
Strachur	264	203	467
Strathlachlan	85	132	217
Kilfinan	723	723	1446
Kilmodan	156	442	598
	<u>1517</u>	<u>2232</u>	<u>3749</u>

In total, over the five parishes, dairy cattle of all ages made up 40% of total cattle but there was considerable variation between parishes.

With one exception, none of the farms included in the survey were of the "dairy farm with hill or moor flock" type but dairy type cattle, pure-bred or crossed, were of importance.

The Breeds

The crosses and breeds of cattle represented in the survey area were many and varied, ranging from the pure-bred Jersey to pure-bred Highland.

From the point of view of number of herds, the Ayrshire breed, pure and crossed (particularly with the Shorthorn), predominated. Almost every cross cow had Shorthorn blood. There were only 3 pure Highland and 3 cross-Highland herds but due to the larger herd size in these cases, they ran the Ayrshires close in actual total numbers of cows. Due to the variety of crosses, arithmetical summation by breed was possible only for the cows and bulls.

Table 12 - Breeds of Cattle - By Cow Herds (40 Units)

<u>Herd</u>	<u>No. of Units</u>
Ayrshire	13
Cross-Ayrshire	8
Cross-Shorthorn	7
Highland	3
Cross-Highland	3
Cross Aberdeen-Angus	4
Galloway	1
Cross-Galloway	1
	<u>40</u>

(Where more than one breed was carried on the same unit, classification was by numerical importance).

On one unit, no cattle were carried.

Table 13 - Breeds of Cattle - Bulls

<u>Breed</u>	<u>No. of Bulls</u>
Ayrshire	10
Shorthorn	3
Dairy Shorthorn	1
Highland	4
Aberdeen-Angus	10
Galloway	3
Jersey	1
	<u>32</u>

This was the actual number of bulls carried at November 1950. An Aberdeen-Angus bull appeared to be popular for out-crossing especially with cross-Shorthorn cows.

Types of Cattle Enterprise

Of the 36 units where regular breeding herds were carried, 19 units were producing stores of a beef type; 10 were producing both dairy and beef stores and 7 had dairy cattle only. One unit in the last group was retailing milk and could be termed a "dairy with a ewe flock" rather than a hill sheep farm. Although this type of farm was omitted from the survey in all other cases, this exception was included because it was a reorganised unit after forestry planting had been completed.

Although most of the information on cattle in this section relates to the position at November, 1950, when the survey began, the breeding policy was by no means static. A trend which was already evident at that time, continued for the subsequent three years. On several units there was a shift from breeding dairy type stores to beef stores. By the end of 1952, four of the seven units which had been running an Ayrshire bull with Ayrshire cows in 1950, were crossing those cows with a Shorthorn bull and retaining the cross heifer calves for ultimate mating with an Aberdeen-Angus bull. On these units formerly the general practice was to sell dairy calving heifers in the autumn. Whether the beef cattle would be sold as suckled calves or as older stores would depend on circumstances on the individual farms.

In the next table, grouping was done by "enterprise" type. The basis for this grouping was the system adopted for carrying the breeding herd through the winter.

The definitions of the "enterprise" types were:-

- A:- Units with no permanent breeding herd but keeping a few dairy cows for household and lamb milk only. All in-wintered.
- B:- Units with a breeding herd housed in winter.
- C:- Units with a breeding herd mainly outwintered.
- BC:- Units with part of breeding herd housed and part outwintered.

These enterprise types are not altogether mutually exclusive. Some units in Type B, for instance, kept a very few cows outdoors during the winter and in Type C, three units kept a few dairy cows in the byre for household milk.

Table 14 - Types of Cattle Enterprise  
Distribution by Fodder-Acre Size Groups

Enterprise Type	No. of Units	Fodder-Acre Size Groups (Acres)				
		0-10	11-20	21-30	31-40	Over 40
A	4	3	1	-	-	-
B	28	5	6	9	4	4
C	4	1	1	1	-	1
BC	4	-	1	1	-	2
	<u>40</u>	<u>9</u>	<u>9</u>	<u>11</u>	<u>4</u>	<u>7</u>

As the table shows, except in the expected case of Type A, the different methods of wintering were found on all sizes - by fodder acres - of units. In other words, there was no apparent connection between the method of wintering and the amount of fodder available from ploughland and hay. However, the smallness of the sample, particularly in Types C and BC, prevents any definite conclusion being drawn.

At the beginning of the 1950-51 winter in the area surveyed there were some 1,528 cattle, 433 or 28% of which were outwintered.

Size of Herds

There was considerable variation in herd size in the area surveyed, the range being from a few cows to over fifty cows. The following table summarises the position at the beginning of winter, 1950.

Table 15 - Size of Breeding Herd  
By Enterprise Types (36 Units)

	Type:-		
	B	C	BC
No. of Units	28	4	4
Total Cattle	957	202	357
Total Cows	310	93	138
Cows as % of all Stock	32%	46%	39%
% of Cows outwintered	2%	84%	46%
Average Herd Size (Cows)	11	23	34
Range of Herd Size (Cows)	2-42	5-32	20-54

The units wintering one part of their herd indoors and the other part outdoors (i.e. Type BC) carried more cattle per unit than either of the other enterprise types. Next came the outwintered herds - Type C - with an average number of breeding cows per unit double that of the inwintered group - Type B. In Type C, cows made up a larger percentage of the cattle stock than in the other groups. The overall average herd size in the area was 15 cows.



The cattle numbers carried over the 1950-51 winter were below normal on 9 units and all but one of these 9 were in group B, i.e. those wintering in the byre. This reduction in cattle stock was due to the poor harvest season in 1950, which resulted in a shortage of winter fodder. The drop in actual numbers ranged from 3 to 15 cattle per unit. Foreseeing a lack of sufficient winter keep on their farms, most of these 9 farmers sold off some cattle, and in one case a breeder who normally bought in about a dozen extra beasts, refrained from buying that autumn.

In the course of the repeat survey in 1952, the opportunity was taken to get some further information on numbers, age at time of selling, sales prices and main markets for cattle.

Cattle Numbers 1951-52

Fairly accurate reconciliations of cattle numbers for the year to November, 1952, were obtained from 22 units.

Table 16 - Reconciliation of Cattle Numbers 1951-52  
(22 Units)

	<u>Total</u>	<u>Percentage</u>	<u>Average</u>
Number at November, 1951	767	71.5	35
Bought	77	7.2	4
Born	228	21.3	10
	<u>1072</u>	<u>100.0%</u>	<u>49</u>
Sold	234	21.8	11
Died	26	2.4	1
Number at November, 1952	812	75.8	37
	<u>1072</u>	<u>100.0%</u>	<u>49</u>

Over the 40 units surveyed in 1950-51, the average number of cattle about November, 1950 was 38 per unit. Although the numbers in the above table come from 22 units, the per unit average gives a fair indication of the reduction between November, 1950, and November, 1951. It would seem that there were 3 less cattle per unit at November, 1951. At November, 1952, on these 22 units, there were 45 more cattle than at the previous November - an average increase of 2 beasts per unit.

Sales of Cattle, 1952

Detailed information on the disposal of cattle in 1952 was obtained from 21 units. A summary is given in the following table.

Table 17 - Cattle Sale Prices, 1952

<u>Class of Stock</u>	<u>Total No. Sold</u>	<u>Average Price per head</u>	<u>Ex No. of Units</u>
Cast Cows	14	£29	8
Breeding Cows	9	£43	5
Dairy Calving Heifers	10	£51	3
Dairy Bullied Heifers	12	£35	1
Suckled Calves	32	£23	2
Other Calves	4	£4	3
Yearling Stores	32	£20	1
Six-Quarter Stores	68	£37	10
Two-Year Old Stores	42	£34	8
Older Stores	25	£64	3
Total	<u>248</u>	-	<u>21</u>

Although this sample from only 21 units is too small to serve as a measure of the value of cattle from the whole area compared with cattle from other areas, certain comparisons between prices realised by beef stores of different age groups are in order. The six-quarter store, born in the spring of 1951 and sold in the autumn of 1952, fetched on average £3 per head more than did the two-year old store, despite the fact that the latter was six months older. Generally these two-year olds were born in the spring of 1950 and sold in the spring of 1952. There are so many factors which can affect the price realised by cattle at auctions, that it is dangerous to generalise. One factor, however, which must play a considerable part, is the condition of the animals at the time of sale. Whereas the six quarter stores were sold at the end of summer off grass, the two-year olds were being sold after wintering, mainly indoors. Also and more important, these animals came through the "fodder-short" winter of 1950-51 as yearlings.

Although suckled calves made a higher average price than spring yearlings, the smallness of the number involved invalidates any comparisons.

The 25 stores over two years old made an average price which compares favourably with prices for similar age groups sold elsewhere.

### Markets

Of the 248 head sold, 38 were sold privately and 210 by auction. Within the area, there are two local markets, Strachur and Balliemore. At the former, there is a spring sale about mid-April and an autumn sale about mid-October. At Balliemore there is a mixed cattle and sheep sale in September.

Excluding the 4 young calves and 38 beef stores sold privately, just under 50% of the beef stores of all ages were sold locally at these two centres; 35 head in the spring and 40 in the autumn. Numerically, Dalnally was the next most important market for store cattle (54). The remainder consisted of a batch of 18 sold in Oban and a batch of 14 in Stirling. Thus, if the sample in 1952 was typical of the whole area for marketing policy (and there were no indications to the contrary), it would appear that, unlike sheep, the majority of the cattle of a beef type were sold within Argyll.

On the dairy cattle side, 9 of the 22 in-calf heifers were sold at Tarbert in July and 13 at Paisley in September.

Some aspects of cattle husbandry are given in Part 5.



For this analysis, each unit was firstly grouped as "Little Lowground", "Low-ground Important" or "Intermediate" and again grouped according to the proportions of cattle to sheep. These two groupings naturally gave a considerable degree of overlap owing to the connection between lowground and cattle stocks. About a third of the units, with lowground and cattle relatively unimportant, had 1 regular male worker for each 360-390 ewes, roughly 18-19½ score of ewes. Farmers are included in the analysis.

Additional Labour at Lambing

Out of the 41 units only 6 made an annual practice of employing special labour at lambing time, while an additional 2 units employed lambers in 1951, although this was not their usual practice.

Field Power

Because of the varying acreages of lowground and the available access to contract services for field cultivations, the numbers of horses and tractors carried on the farms varied. As regards contract machinery services, 6 units stated that they made use of the services to a "considerable extent", 15 units to a "limited extent", while the remaining 20 units made no use of them.

The various combinations of farm horse and tractor power summarise as:-

<u>Using:-</u>	<u>No. of Units</u>	<u>Average Rotation Acres per Unit</u>
Neither Horses nor Tractors	2	0
1 Horse	6	14
2 Horses	8	24
1 Tractor	11	35
1 Tractor plus 1 Horse	5	49
1 Tractor plus 2 Horses	5	49
1 Tractor plus 3 Horses	3	83
2 Tractors	1	170
	<u>41</u>	

Electrical Power

At the time of the survey, electricity supplies to farms were being extended and at mid 1951, 23 units were connected with grid supplies and an additional 3 expected installation very soon. Another 4 had their own home generating plants, leaving 11 not having electricity available. Generally, electricity was still at the stage of being used almost entirely for lighting.

PART 5

SOME ASPECTS OF HUSBANDRY AND PRACTICE

SHEEP

Sheep Stock Maintenance

Almost without exception it is the normal practice in the area to maintain the ewe stocks with home-bred ewe hogs. Only one farmer bought ewe hogs - 50% of his replacement needs - in 1950. This was on a recently formed unit, still building up a flock. One of the larger units makes a practice of buying in about 5 score of ewe hogs every four or five years.

Ewe Hogg Wintering Practice

In the 1950-51 season, 26 units wintered all their ewe hogs at home, 7 wintered them all away, and 7 sent away a proportion. In most cases, the wintering away on lowground farms covered the normal six-month period from 1st October to 1st April.



In as many instances as possible, the views of farmers and shepherds were sought on the success (or otherwise), and the merits and drawbacks of the particular method of wintering which they were following. It must be stressed that these are individual personal opinions. The following section may give some indication of the main considerations affecting the wintering practice in this area.

In the case of 4 units wintering wholly away the rate of stocking was stated to make home wintering impossible. Without a reduction in the ewe stock, hogs could not be successfully carried over the winter. The risk of snow loss, the absence of heather and the exposed nature of the ground, coupled with the lack of shelter belts, were the other chief reasons for sending hogs away. One farmer was of the opinion that at the present time, wintering away resulted in better lamb and cast ewe prices and a heavier wool clip, but should times become less favourable, he would put off a low hirsel of ewes and winter his hogs at home.

The general opinion was that the 'away' hogs were bigger but it was debatable whether they were hardier. The competition with in-lamb ewes and the lack of grass at home in early April could cause a bad check to hogs returning from kindlier lowground farms. Where wintering could be had from 15th October to 15th April, the later fortnight in Spring was a considerable help in overcoming this handicap. In recent years, with increased cropping on the lowground farms, it had become very difficult to get this period.

The 26 units with the hogs all wintered at home were, in the main, pleased with their results. Although the hogs were slower in maturing they were considered to do better later on as gimmers and ewes. The introduction of inoculation serums for "braxy" and vaccines for "louping-ill" played a large part in the reduction of ewe hogg losses. One farmer said that before their discovery he had, of necessity, to winter his hogs away, otherwise almost 50% would have died, mainly from these two diseases.

#### Hogg Wintering Areas and Costs

The hogs from the area went to places as far apart as Speyside in the north-east and Dumfries-shire in the south-west. In Table 20 the district of "Clyde" takes in the areas on either side of the River Clyde; the "Central Scotland" group includes the districts of Cumbernauld, Avonbridge and Slamannan, while "East Scotland" covers the Lothians and Fife. Wintering costs were collected only for the 1950-51 season. As the table shows there are considerable variations in both the wintering cost and the transport cost depending on the district and the distance from Cowal. The hogs going to "N.E. Scotland" incurred the highest inclusive cost due to the heavy haulage charge.

Table 20 - Hogg Wintering Areas and Costs Per Head  
Winter 1950-51

<u>District</u>	<u>No. of Hogs</u>	<u>Wintering Cost</u>	<u>Transport Cost</u>	<u>Inclusive Cost</u>
Cowal	226	21/8	3/0	24/8
Bute	622	20/2	3/1	23/3
W. Argyll	1021	19/-	3/8	22/8
Central Scotland	514	23/-	3/11	26/11
Clyde	722	23/1	4/5	27/6
E. Scotland	289	25/-	4/11	29/11
S. Scotland	131	25/-	6/-	31/-
N.E. Scotland	1151	22/8	9/2	31/10
	<u>4676</u>			

Note:- In all cases both wintering and transport costs were averaged out per head by batches.

In the next table the costs have been ranged according to cost per head irrespective of the area to which the hogs were sent. Taking the grazing cost alone, the most frequent charge was from 20/- to 22/- per head and the number of hogs in this group was almost double that of the next numerically important group. When transport costs were included however, the numbers were more evenly distributed; three of the groups having about 20% each of the total hogs.

Table 21 - Range of Wintering Costs

<u>Wintering Costs</u> (Excluding Transport Away & Home)			<u>Inclusive Wintering Costs</u>		
Range	No. of Hoggs	%	Range	No. of Hoggs	%
18/- to 20/-	897	19.2	20/- to 22/-	1043	22.3
20/- to 22/-	2048	43.8	22/- to 24/-	201	4.3
22/- to 24/-	617	13.2	24/- to 26/-	1001	21.4
24/- to 26/-	1064	22.7	26/- to 28/-	710	15.2
26/- to 28/-	-	-	28/- to 30/-	900	19.3
28/- to 30/-	-	-	30/- to 32/-	320	6.8
30/- to 32/-	50	1.1	32/- to 34/-	201	4.3
			34/- to 36/-	300	6.4
	<u>4676</u>	<u>100%</u>		<u>4676</u>	<u>100%</u>

The weighted average cost per head, for all the hoggs wintered away was 21/4d for grazing and 4/10d for haulage, giving an inclusive cost of 26/2d. The highest cost for an individual batch of hoggs was 35/6d per head (grazing 25/- and haulage 10/6d); the lowest cost was 20/10d per head (grazing 18/- and haulage 2/10d).

Death and Loss in Ewe Hoggs

The table below gives a summary of the ewe hogg position from the start of wintering each year till November of the following year.

Table 22 - Ewe Hogg Reconciliation  
(Seasons 1950-51 and 1951-52)

	<u>Method of Wintering</u>			
	<u>All Hoggs At Home</u>	<u>All Hoggs Away</u>	<u>Part Home &amp; Part Away</u>	<u>Total All Hoggs</u>
<u>1950-51</u>				
No. of Units	26	7	7	40
	%	%	%	%
Available as Gimmers 1951	81.3	89.9	77.9	84.1
Sales	3.9	1.5	6.4	3.4
Death and Loss	14.8	8.6	15.7	12.5
x Hoggs at October, 1950	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>
<u>1951-52</u>				
No. of Units	22	7	5	34
	%	%	%	%
Available as Gimmers 1952	82.9	93.2	91.3	88.8
Sales	4.4	1.4	2.7	2.8
Death and Loss	12.7	5.4	6.0	8.4
x Hoggs at October, 1951	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

Note x The figures are all expressed as percentages of the number of hoggs at the start of wintering.

Although the sample is not identical, there being six units fewer in the second year of the survey, nevertheless, the percentage figures give a fairly good comparison of the two seasons.

In both seasons, the hoggs wintered away had a lower death rate than had the hoggs in the other two groups. It was the same seven farms which wintered all their hoggs away each year and thus the figures for this group are directly comparable. The death rate was 3% lower in 1951-52.

There was also a fall of 2% in the death rate in hoggs wintered at home but the most striking improvement was shown by the group wintering partly at home and partly away. In 1950-51, the farms in this group had the highest mortality in hoggs. This is borne out by the figures in Table 22 and the Appendix Table. In 1951-52 however, the death rate was only half that of the "all at home" group.

The death rate in all ewe hogs, no matter where wintered, was 4% lower in 1951-52 than in the previous season.

Details of actual numbers involved, death rates before and after clipping, etc. are given in the Appendix Table.

Of the 8,160 ewe hogs in the area at October, 1950, 4,223 (51.7%) were wintered away. In the following wintering season, 1951-52, over 34 units the percentage of ewe hogs wintered away was 55.5%. The following table shows the comparison between 'home' and 'away' hogs in the two wintering seasons.

Table 23 - No. of Hogs Wintered at Home and Away

	<u>Season 1950-51</u> (40 Units)		<u>Season 1951-52</u> (34 Units)	
	<u>At Home</u>	<u>Away</u>	<u>At Home</u>	<u>Away</u>
Total No. of Hogs	3,937	4,223	2,396	3,022
	%	%	%	%
Available as Gimmers	79.2	88.7	82.5	93.8
Sales	4.8	2.1	5.0	1.1
Total Death and Loss	16.0	9.2	12.5	5.1
<sup>x</sup> Hogs at October	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

Note: <sup>x</sup> The figures are all expressed as percentages of the number of hogs at the start of wintering.

The bulk of ewe hogs sold, mainly as gimmers, were hogs which had been wintered at home.

Death Rates by Periods

Where "home winterers" took a Spring count of their ewe hogs, it was possible to make a direct comparison of the death rates over three distinct periods of the year.

Table 24 - Ewe Hogg Death Rates by Periods

	<u>All Hogs</u> <u>at Home</u>	<u>All Hogs</u> <u>Away</u>	<u>Part</u> <u>Home</u>	<u>Part</u> <u>Away</u>
No. of Units giving the necessary counts	7	7	3	7
Death & Loss over Wintering Period	8.5%	3.4%	13.9%	6.3%
Death & Loss from April, 1951 to Clipping, 1951	3.5%	4.2%	3.3%	3.6%
Death & Loss from Clipping to November, 1951	2.1%	1.0%	3.6%	1.4%
Total Death & Loss for Year	<u>14.1%</u>	<u>8.6%</u>	<u>20.8%</u>	<u>11.3%</u>

It is unfortunate from a comparative point of view that only 7 of the 26 home wintering units had Spring counts available. Since the death rate from October to clipping time, however, was 13.5% (See Appendix Table) for the 26 units, compared with 12.0% in the above table, there is little reason to suppose that the proportion would be very much different for the other 19 cases. The higher death rate in 'away wintered' hogs on their home hills during the cold wet period from 1st April to clipping time in June 1951, supports the view of some farmers of a check in growth when hogs return from lowground farms.

Comparable figures for the 1951-52 season were not available except in the case of the seven units wintering all their hogs away. Over these same seven units the percentage total death rate for the year was 5.4%; a reduction of some 3% compared with 1950-51. The total death rate was made up of 2.1% at wintering, 2.7% between 1st April and clipping time and .6% from clipping time till November. Again the heaviest death rate occurred in the Spring.

Gimmers

In all cases the gimmers were normally 'put to the tup' at 18 months. 4 units did, however, keep their smallest gimmers back for a year. Several other breeders would have preferred to do likewise but for the lack of good fences on the lowground. Also, the lack of lowground, especially on farms which wintered hogs at home, was a major drawback.

Of the breeding stocks at November, 1950, approximately one-quarter were gimmers.

Ewe Casting

Except for two units building up their stock, all the ewe flocks were kept in regular ages as far as possible.

Table 25 - Ewe Casting Practice

<u>No. of Units</u>	<u>Casting after</u>
15	5 lamb crops
22	4 " "
3	3 " "
1	Not available

These casting policies were followed fairly rigidly - except after heavy losses - by over 30 of the units. The others sometimes kept the ewes an extra year depending on circumstances.

Rams

Just over half the units in the sample were "one hirsels places" and consequently, the rams were not kept for more than two years. On some of the larger farms, where there were two or more hirsels, the rams were used for 4 or 5 seasons. The normal practice was to allow 3 rams for each 100 ewes.

As regards the replacements, there was a certain amount of exchanging of rams within the area surveyed. In the autumn of 1951, only 12 units had kept ram lambs from their 1951 crop and at the time of the survey it was not known whether they would be sold or kept for service at home in the future. On the whole, by far the most common method of ram replacement was by purchase.

Rams purchased were obtained at markets all over the west from Dalmailly to Lockerbie. Glasgow, however, seemed to be the chief centre; with more than half the breeders buying all or part of their ram replacements there in 1951. Next came Dalmailly with 10 units and the remainder were, more or less, evenly spread over Balliemore (local), Greenock, Lanark, Lochgilphead and Stirling. One unit bought a number of rams at Newton Stewart.

The majority of breeders had no marked preferences for rams from a particular district, although 15 farms preferred rams bred in Argyll. In these cases the rams were said to be more suited to the ground and to prevailing conditions. The main demand was for a hardy "hill-bred" sheep, with a soft thick coat of medium length and with good clean legs. The opinion was expressed, in a very few cases, that the local bred ram was too short in the leg and too long in the coat.

Of the 41 units, 28 units bought most of their rams at the ram lamb and/or shearling stage. Ram lambs had time to become acclimatised before being run with the ewes the following autumn. The breeders who preferred to buy older animals thought that those rams were easier to herd.

Wedder Stocks

On the eight units where wedders were kept in significant numbers, it was normal practice to retain the wedders for two, or more often, three years



before selling them straight off the hill in the autumn, although a few might be finished on foggage. The farmers normally expected carcass weights of 55-60 lbs for widders of 3½ years old. The estimated average fleece weights for this class of sheep were stated to be:- 1st clip, 5 lbs; 2nd clip, 6 lbs; 3rd clip, 7 lbs.

From the point of view of shepherding, general opinion was that widders required much less attention than ewes, although they sometimes had a tendency to stray. They were more active than ewes and were better able to "fend for themselves". This foraging ability was, however, sometimes considered to be a disadvantage in mixed flocks, especially prior to lambing, when in-lamb ewes had to compete with widders for scarce Spring grass.

Three units sent a proportion of their widder hogs to winter away along with their ewe hogs. Most breeders were agreed that the first winter was the most hazardous for widders. If there was deep snow, the widder hogs with their longish coats frequently got into difficulty. Older widders on the other hand, gave much less trouble and often led the other sheep safely in time of snow. Farmers' estimates of death rate in a normal year ranged from 5% to 12% in the case of widder hogs and 2% or less in older widders. As can be seen from Tables 35 and 36, the actual death rate in 1950-51 was considerably above these estimates and even for 1951-52 they turned out to be too conservative.

#### Waygo Practice

With reference to waygo on the 31 tenanted "farms":- 21 would quit at the May term and 10 at the November term.

Of the 29 tenanted units, 25 of the sheep stock were "bound to the ground" and for these "bound" stocks the hand-over agreements were:-

16 to be handed over at market value,  
8 at fixed prices  
and 1 at the value established by Hill Farming Act  
Valuation procedure.

The 4 stocks not "bound" were at market value.

With regard to acclimatisation value, the position was difficult to sum up numerically, particularly in relation to the amount allowed for acclimatisation value when the present farmers took over. 10% of the price seemed to be the most common amount and had applied in most cases to the ewe and lamb, ewe hogg and ram. In one case this was thought to be as high as 25%. In several instances the amount was unknown.

16 Flocks definitely had an acclimatisation value.  
2 " probably " " " "  
19 " definitely had not.

In the remaining 4 the practice did not apply.

#### CATTLE

##### Wintering of Cattle

In a hill area, apart from the farmer's personal preferences and suitability of particular breeds, the main points governing the outwintering of a herd are the amount of winter feed available and/or the presence or otherwise of sufficient shelter on the hill.

In the survey area, only 8 out of 36 units kept all or part of their breeding cows outdoors in winter. Eleven breeders expressed the opinion that, due to the lack of natural shelter on their hills, the outwintering of cattle would be inadvisable. In another case, although there was adequate shelter in a steep glen there was a constant risk of loss by falls or drowning. Three units kept their cows indoors chiefly to provide dung for their arable land. Only one unit sent away cattle - cross-Highland heifers - for wintering on a lowground farm.

In general, the numbers of cattle carried under either system - housed or outwintered - are limited by the amount of winter keep and especially does this apply where they are indoors. Other limiting factors are insufficient byre and court accommodation (mentioned in 11 cases) and the shortage of labour staff (mentioned in 3 cases).

The main fodder given to outwintered beasts was hay, either alone or supplemented with sheaf oats or straw. Only one farm fed purchased concentrates to outdoor stock.

Fodder Crops and Cattle Numbers

The crux of the problem of carrying more cattle on a hill farm is the amount of lowground which is available - and is suitable - for growing winter keep, or the availability of relatively low-priced supplies of purchased fodders. For the surveyed units, the linkage between the cattle stocks and the supply of home-grown foods was considered. The "fodder acres" of the following table are the total ploughed land, - excluding potatoes and rape, - plus rotation and permanent hay. The units were grouped according to the number of acres of fodder crops which were grown in 1950.

Table 26 - Fodder Acres and Cattle Stocks

<u>Fodder Acre Size Groups</u> (acres)	<u>No. of Units</u>	<u>Av.No. of Cows</u>	<u>Fodder Acres per Cow</u>	<u>Av. No. of Cattle</u>	<u>Fodder Acres per Cattle Beast</u>
0 - 10	10	5	1.3	13	.5
11 - 20	9	11	1.4	35	.4
21 - 30	11	11	2.2	37	.7
31 - 40	4	14	2.7	36	1.1
Over 40	7	31	2.0	78	.8

It must be stressed that the smallness of the sample particularly in the 31 to 40 acres group, makes the drawing of definite conclusions difficult. It would appear that the units with from 21 to 40 fodder acres were carrying proportionately fewer cattle than the units in other smaller groups. "The over 40 acre" group showed a very wide range, both in fodder acres and in cattle numbers, and is not quite comparable to the others.

The same type of calculation was done for the three different kinds of enterprise groups.

Table 27 - Fodder Acres for Cattle  
By Enterprise Types

	<u>Type B</u>	<u>Type C</u>	<u>Type EC</u>
No. of Units	28	4	4
Average No. of Cows	11	23	34
" " " All Cattle	34	51	89
" " " Fodder Acres	27	24	46
Fodder Acres per Cow	2.5	1.0	1.3
" " " Cattle Beast	.8	.5	.5

Type B:- Breeding Herd housed in winter  
 " C:- " " mainly outwintered  
 " EC:- Part of Breeding Herd inwintered and part outwintered.

Although the average number of fodder acres per unit in Type B and Type C differed only by 3 acres, the inwintered group were allowing more than double the fodder acres for each cow. Type EC had a much larger number of fodder acres, and expressing these per cow and per cattle beast, the resultant figures lay between the other two types.

In any particular year, the quantity of home grown fodder, although directly related to the area of suitable lowground, is influenced by factors other than the availability of cropping land. In the year under review, one major factor was the failure of some units to garner the hay crop, due to the very wet season. Also, in many cases the quantity and quality of the crops at

harvest were below normal. Consequently the majority of units had to purchase extra feeding for their cattle to carry them through the winter and spring of '50-'51. It was not so much the severity but the length of the winter which caused the higher level of feed purchases. On one farm for example, the stock were kept in the byre for three weeks longer than usual due to the inclement spring weather. The next table gives an indication of the shortage of fodders, particularly hay, during the period.

Table 28 - Excess Purchased Feeding  
(November, 1950 to May, 1951 Inclusive)

	<u>Hay</u>	<u>Straw</u>	<u>Oats</u>	<u>Roots</u>
No. of Units normally self-supporting in	12	11	10	1
No. of Units buying more than normal	14	1	1	1
Total Units buying in '50-'51	26	12	11	2
Total Excess Tonnage Bot.	264	48	19	16
Range (Tons per Unit)	1 to 6	½ to 15	½ to 5	2 to 14

Keeping in mind the high purchase price of hay prevailing at that time, and the additional expense of haulage, some idea is given of the extra financial load thrown on the economy of some of these farms where considerable hay had to be bought.

#### Summering of Cattle

Very few units bought extra cattle for summering or grazed cattle for other farmers over the summer months. In the former category only two units made a practice of buying yearling stores, at local spring sales, and selling them in the autumn of the following year. As regards the letting of summer grazing, again only two units let part of their summer grass for the grazing of store bullocks and bulling heifers. The animals came from farms in the area. Several farmers said that there was no demand for summer grazing, others considered that buying in of extra stock for the summer was "rather risky from the financial point of view".

#### Herd Management

23 units maintained their herds as far as possible by home-breeding, 10 units bought in their replacements and on the remainder, a proportion were purchased. On 75% of the units, the farmers tried to have the cows calving down in the Spring. The breeders (16%) who preferred autumn calvings were mainly selling calving heifers or calved heifers to winter milk producers. The remaining 9% were made up of herds calving partly in Spring and partly in Autumn, depending on the breed of cow. As a general rule the beef cows were Spring calvers and the dairy cows Autumn calvers. The commonest calving age was from 2½ to 3 years old. A few of the owners of the Highland herds mentioned the difficulty of maintaining a regular calving pattern.

Some measure of the calving rate in 1952 was obtained by expressing the number of calves born as a percentage of the cows and heifers put to the bull. Figures were available for the 1952 calf crop from 23 herds. In all, 265 calves were born from 330 cows and heifers put to the bull; or a calving percentage of 80. If each herd was considered of equal importance irrespective of size, the unweighted average percentage was 81. The calving rates in individual herds ranged from 60% to 100%. Three herds attained a 100% calf crop.

In a special study<sup>x</sup> by this Department of hill cattle costs and returns covering the 1951 to 1953 calf crops, the number of calves born in 1952 per 100 cows in each locality was:-

West Perth	North Argyll	South West Scotland
85	73	79

The figure for North Argyll related to 11 herds producing beef type calves. The calving percentage for the survey sample in Cowal compares favourably with that of the North Argyll sample.

x Roberts, C.W., Hill Cattle in 1951-53. Report No. 14 W.S.A.C.

The majority of the units had no definite age at which they cast their cows, the figures given ranging from 7 to 12 years old.

In 1951 the cattle stocks on 19 units were attested and on the remainder the breeders were very "attestation conscious". In the area attestation was beginning to play a part in cattle management as far as the lending of bulls and the letting of grazing were concerned. By the end of 1953, although no numerical summation was attempted, it was obvious that attestation had advanced considerably during the three year period. Evidence of this is shown by the increase in revenue from attested grants in the sample of twelve identical units (See page 43).

### CROPPING

#### Rotations

The normal rotation in the area was:- lea oats followed by a greencrop and then oats undersown with a permanent grass seed mixture. There were variations in the number of years during which the grass was cut for hay but 3 years seemed to be most common, followed by 2 years grazing. To avoid the risk of oats lodging, one unit took a crop of potatoes from lea and then followed with the normal rotation. Another farmer also starting with a greencrop after lea, sowed Italian Ryegrass with the redland oats, then directly reseeded the following year with a three to four year mixture, which was hayed or grazed depending on circumstances. The commonest greencrops were potatoes, turnips and rape. The acreage of rape grown tended to be on the increase.

#### Silage

One farm grew a crop of arable silage .. oats and vetches - in 1951 with fair results. Out of 40 units visited, none ensiled grass in 1950 and only one in 1951. The main drawback, in the opinion of several farmers, was the heavy labour requirement needed for silage making. While grass silage is a crop which lends itself very easily to mechanisation, on these hill-farms, with relatively little lowground, mechanisation is at a minimum. Also, part of the success of the making of good silage lies in getting the silo filled with as few interruptions as possible, but if the suitable stage of grass growth coincides with sheep handlings - as it may do - the available labour force may have to stop ensiling to attend at markings or hogg clippings on neighbouring farms.

#### Crop Varieties

By far the most widely grown oat was "Yielder". This variety was popular due to its early ripening and its resistance to lodging. A few farmers, who considered that it did not tiller too well, sowed "Pure Line" along with "Yielder". The former, which tillers better but is more liable to lodge, was supported by the stronger strawed "Yielder".

"Potato-oat" and "Castleton" were grown to a limited extent. In general, although better straw varieties were available, "Yielder" was considered to be best suited to the climatic conditions prevailing in the area.

The bulk of the potatoes grown were "Kerr's Pinks". Five units grew some "Golden Wonders". "Redskin", "Gladstone" and "Epicure" were also found on a few farms. In one localised instance, the presence of vermin, particularly rabbits and pigeons, governed not only the choice of variety of greencrop but also restricted the acreage grown. On one farm yellow turnips were the only greencrop which could withstand the depredation by vermin.

#### Soil Analysis

A dozen units in recent years had a soil analysis taken of their rotation land. In the majority of these cases the soils were deficient to a varying degree in calcium, phosphate and potash. In general, lime was the most deficient and phosphate was scarcer than potash. On units where no sampling had been requested, most farmers said that there was a good response to lime. There did not appear to be a very serious deficiency of any major element in the area. Only on two units was there trouble from "Raas" and "Finger-and-Toe".

### Manuring

The normal rate of liming on the sow-out was 2 tons of ground limestone per acre. In addition, slag, at  $\frac{1}{2}$  to 1 ton per acre, or ground mineral phosphates, usually about 6 cwts per acre, were quite commonly applied to this land in the same year. In most instances, the usual dressings of appropriate compounds were given to the remainder of the cropped land. Parts of the permanent grass and in-bye land were, on some units, dressed with lime and slag or potassic or ground mineral phosphates. Several farmers were turning to ground minerals as a source of phosphate.

### Direct Reseeding

On the seven units where land had been recently reclaimed as improved grazing by reseeded without a nurse crop, the farmers were, without exception, very well pleased with the results. One was of the opinion that the catch of grass was better than could have been obtained under normal sow-out procedure.

On nine other units additional land was being brought to a higher level of productivity through the normal rotation. Some units took two crops of oats, the second being undersown with grass seeds. Others under-sowed the oats the first year. Rape was used as a nurse crop after oats in one instance.

The main handicap to cropping, apart from the lack of lowground, appeared to be the climate rather than any inherent deficiency in the soil of the area.

## PART 6

### THE STOCK STATISTICS FOR 1950-51 and 1951-52

By arrangement with the farmers, it was possible to obtain reliable figures covering annual reconciliation of the ewes and also detailed figures on lamb crops and lamb disposal. A summary of these follows:- the hogg wintering data having been handled separately under Part 5.

As stated in the Introduction, and requiring re-emphasis here, the year 1950-51 was very unfavourable, resulting in what was probably a higher than normal death rate among hill ewes and a low survival rate among lambs at lambing time. It was for this reason that stock numbers were taken in detail for season 1951-52, which was more normal.

### The Ewe Stocks - Death, Sale and Casting Rates

Detailed reconciliations of ewe numbers were available from 40 units in the first year of the survey and from 34 units in the second year. It is necessary to comment that the number of ewes at November includes gimmers ready for tupping at that time, but that the number at the following November excludes the incoming lot of replacement gimmers necessary to maintain the ewe stocks. The reconciliation thus traces only the disposal and retention of the ewe and gimmer stock on hand at the opening date of each year.



Table 29 - Reconciliation of Ewe Stocks

	Year Ended:-			
	November 1951		November 1952	
	Total Ewes	%	Total Ewes	%
No. at November	26,048	100	22,326	100
Sold. M.O.F.	598	2.3	519	2.3
Auction	2,874	11.0	) 2,840	12.7
Privately	191	.7		
No. at following November, viz:-				
Breeding	18,843	72.4	17,325	77.6
Feeding	86	.3	-	-
Sub-Total	22,592	86.7	20,684	92.6
Died and unaccounted for:-				
November to Clipping	2,748	10.6	1,190	5.3
Clipping to following November	708	2.7	452	2.1
Total	26,048	100.0%	22,326	100.0%
Number of Units	40		34	

Of the ewes and gimmers on hand at November, 1950, rather over 13% had died or were unaccounted for a year later. If the year is broken up into two periods, from November 1950, up to the clipping counts in June-July of 1951, and again from the clipping until November 1951, 10.6% of the death and loss occurred in the first period and 2.7% thereafter. Expressed otherwise, 79.5% of the total death and loss took place between November and the summer clippings. In the first period the range of the death and loss percentage was from 3.4% to 20.6% per unit and in the summer and autumn, from almost negligible to 12% per unit. It is probable that this highest single figure for the summer period was associated with some unlawful removal of sheep.

In the following year, the death and loss rate between November 1951 and clipping 1952 was half that of the corresponding period in 1950-51, whereas the death rate after clipping time in 1952 was only .6% lower than the 1951 figure. These changes in the period death rates in 1952 illustrate that it was the winter and spring which was the more abnormal part of the 1950-51 season. The range in the first period was from 1.0% to 12.0% per unit and from negligible to 7.3% per unit in the second period.

As regards disposal by sale, 14% of the opening ewe stock numbers were sold within the year, or if the 0.3% on hand for feeding at November 1951, are added, a total of 14.3% were sold, or were to be sold.

Despite the lower death rate in 1951-52, the number of ewes sold in 1952 was only 1% higher than in 1951. Consequently, the percentage of ewes (as distinct from replacement gimmers) at November 1952 was 5% greater than at November 1951.

Combining sales with death and loss, the opening numbers were reduced by 27.3% in 1950-51 and 22.4% in 1951-52.

Information relating to only two years, one of which was abnormal is not a sufficiently reliable indication of the casting rate, but the figures do show a reduction of 27.6% in the breeding stock between November 1950, and November 1951, and a reduction of 22.4% between 1951 and 1952. This indicates an average period of about 4 lamb crops as hill ewes.

Table 29 given previously shows the sales according to the three main methods of disposal, with sale by auction easily the most important. As regards sales, all farmers were questioned as to the probable utilisation, by the buyer, of the ewes sold at auction or privately. For a total of 3,065 ewes sold thus by 35 units in 1951, it was stated by the sellers that about 86% were probably fit for further breeding and about 14% for feeding and slaughter.

The corresponding proportions for 2840 ewes sold in 1952 were 77% and 23% respectively.

The Lamb Crops of 1951 and 1952

At the close of one of the worst lambing times of recent years, 13,690 lambs were marked from the 26,048 ewes and gimmers at November, 1950 - a marking percentage of 52.5. By disposal time in the autumn, the effective lamb crop was 49.9% of the tuppied stock at the previous November.

In contrast, over 34 units in 1952, 15,706 lambs were marked from a total of 22,326 ewes and gimmers at tuppied time or a marking percentage of 70.3. The two lamb crop years are compared in the next table.

Table 30 - Lamb Crop Statistics, Years ended November 1951 and 1952.  
(Average, per Flock, by Units)

	No. of Units	Ewes at Tuppied 1950 & 1951	Lambs Marked	Final Lamb Disposal	As % of Tuppied Marked Disposal
1951	40	651	342	325	52.5 49.9
1952	34	657	462	438	70.3 66.7

By "final lamb disposal" is meant:- lambs sold plus lambs retained as ewe hogs, wedder hogs, ram lambs and feeding lambs.

As the table shows, although the average number of ewes per unit at tuppied time each season was approximately the same, the average number of lambs marked per unit in 1952 was six score greater than in 1951.

Information on the losses between marking and "final disposal" is also available. Over 40 units in 1951, 13,690 lambs were recorded as "marked" and, by the final reconciliation disposal, 683 lambs had died or were unaccounted for, giving a percentage loss of 5%. Possibly, as with the ewe loss rates, a small number of "stragglers" would come in later but hardly in sufficient numbers to reduce the loss rate appreciably. It is noteworthy also, that, in an unfavourable year such as 1951, the rate of loss after marking may have been lower than normal because "only the really 'tough' lambs got as far as the marking!" Indeed in the much more favourable season of 1952, the death rate in lambs from marking to disposal was virtually the same as in 1951.

For certain of the units it was possible to follow the losses in lambs, after marking, by periods, i.e.

Marking to clipping  
Clipping to speaning  
Speaning to "final disposal"

A total of 14 units provided all 4 counts and the additional 8 units omitted only the count at clipping time. The figures obtained are shown in the following table:-

Table 31 - Death and Loss of Lambs by Periods, 1951.

	Units Giving All Four Counts	Units Omitting only Clipping Counts.
Number of Units	14	8
No. at Marking, 1951	4161	2511
No. at Clipping, 1951	4109	-
No. at Speaning, 1951	3983	2407
Available for Disposal, 1951	3924	2386
% Loss. Marking to Clipping	1.2	-
% " Marking to Speaning	4.3	4.1
% " Marking to Disposal	5.7	5.0

For these two groups of units, the percentage loss from marking until disposal was 5.7% and 5%, occurring as follows:-

% Loss. Marking to Clipping	1.2	)
% Loss. Clipping to Speaning	3.1	4.1)
% Loss. Speaning to Disposal	1.4	.9
	<u>5.7</u>	<u>5.0</u>

Thus the heaviest losses would appear to have occurred after clipping time.

Due to insufficient lamb counts, similar calculations for the 1952 lamb crop were not possible.

An interesting part of the lamb reconciliation figures is the proportions of the lamb types available after marking.

Table 32 - Lamb Type Proportions at Marking, 1951

	<u>Totals at Marking</u>	<u>%</u>
No. of Units	37	-
Total Ewe Lambs	6,839	52.6
" Ram Lambs	55	.4
" Wedder Lambs	6,098	47.0
	<u>12,992</u>	<u>100.0%</u>

In 1952, ewe lambs again exceeded wedder and ram lambs at marking time by 3.4%. Out of a total of 15,706 lambs, 8,121 or 51.7% were ewe lambs.

The disposal of the 1951 and 1952 lamb crops is given in Table 33 below. This shows the total loss rate previously quoted, namely, 5% and also indicates that in 1951, after setting aside replacement ewe hogs, rather below 50% of the marked lambs were available for immediate sale or for retention as wedder hogs or feeding lambs; in 1952 the corresponding percentage was 52.6.

Table 33 - Disposal of the Marked Lamb Crops, 1951<sup>‡</sup> and 1952

	(40 Units)		(34 Units)	
	<u>Total Lambs</u>	<u>Percentage</u>	<u>Total Lambs</u>	<u>Percentage</u>
Number Marked	13,690	100.0%	15,706	100.0%
Sold: M.O.F.	576	4.2	736	4.7
Auction	4,295	31.4	5,945	37.8
Privately	152	1.1	-	-
No. at November, viz:				
Ram Lambs	35	.3	71	.5
Ewe Hogs	6,205	45.3	6,651	42.3
Wedder Hogs	1,655	12.1	1,441	9.2
Feeding Lambs	89	.6	56	.4
Died etc. since marking	683	5.0	806	5.1
	<u>13,690</u>	<u>100.0%</u>	<u>15,706</u>	<u>100.0%</u>

Regarding the proportions sold to the Ministry of Food (graded lambs) and by auction or privately, one qualification is necessary. As a result of the generally reduced Scottish lamb crop of 1951, store prices were good in the autumn and appeared to offer a more remunerative alternative than "the grader". In some cases lambs, on receiving the lower grading, were withdrawn and put through the store ring.

Rams

At November, 1950 - at a time when practically all of the rams required for the 1950 tugging season were on the farms - the total stock of rams and ram lambs in the area was 887 head. During the 1950-51 year, a total of 325 rams were accounted for by sale, exchange or death, this being about 36% of the opening numbers. The death rate, over a year in which the winter period was abnormally severe, was about 15% of the opening numbers.

Unlike in other classes of sheep, the death rate in rams in the 1951-52 season was no lower than in the previous season. Expressed as a percentage of the number of rams on hand at the beginning of the season, the death rate in 1951-52 was again 15%.

<sup>‡</sup> In tables where figures are given for both years, 1951 is always given first.

Wedder Sheep

The information obtained made it possible to analyse the wedder sheep figures in two separate age classes - the "wedder hoggs" of each lamb crop and the "older widders". For these two classes the 1950-51 and 1951-52 stock reconciliations were:-

Table 34 - Wedder Hogg Reconciliations, 1950-51 & 1951-52

	(34 Units)		(26 Units)	
	Nos.	%	Nos.	%
Wedder Hoggs at November	<u>1204</u>	<u>100.0%</u>	<u>1491</u>	<u>100.0%</u>
Sold to M.O.F.	86	7.2	29	1.9
" by Auction	170	14.1	92	6.2
" Privately	-	-	-	-
Total Sold	256	21.3	121	8.1
Died, etc.	251	20.8	254	17.0
Widders at following November	<u>697</u>	<u>57.9</u>	<u>1116</u>	<u>74.9</u>
	<u>1204</u>	<u>100.0%</u>	<u>1491</u>	<u>100.0%</u>

As was to be expected in widders being sold from this area at approximately 1½ years old, more were sold store than were graded.

The death rate in this class of sheep in 1950-51 was considerable and although there was a fall of 4% in 1951-52, mortality was still high. This may have been partly due to the general shortage of lambs from the 1951 crop and those wedder lambs retained (except on the few units where widders stocks were important) were of a poorer quality than normal. Indeed 8 out of the 26 units in 1951-52 had less than half a score of wedder hoggs per unit and these were, in the main, "stragglers" and shott wedder lambs. It is clear that on some individual units where the death rate in wedder hoggs was considerably above the average, it would have been better to sell at the wedder lamb stage.

Table 35 - Older Wedder Reconciliations, 1950-51 & 1951-52.

	(25 Units)		(25 Units)	
	Nos.	%	Nos.	%
Widders at November	<u>1098</u>	<u>100.0</u>	<u>1211</u>	<u>100.0</u>
Sold to M.O.F.	337	30.7	419	34.6
" by Auction	232	21.1	171	14.1
" Privately	23	2.1	-	-
Total Sold	592	53.9	590	48.7
Died, etc.	115	10.5	47	3.9
Widders at following November	<u>391</u>	<u>35.6</u>	<u>574</u>	<u>47.4</u>
	<u>1098</u>	<u>100.0%</u>	<u>1211</u>	<u>100.0%</u>

In 1950-51, the percentage death rate in these older widders was almost half that of the wedder hogg group. In 1951-52 there was a considerable reduction in mortality among older widders. The percentage death rate in this class was some 13% less than that in wedder hoggs. These tables support the opinion of many farmers that once widders come through the first winter, their chances of survival in subsequent years are considerably higher. It must be emphasised again that the weather in 1950-51 was exceptional. Details of weights attained and store prices realised are given for both age groups in Part 8.

PART 7

SHEEP MARKETS AND PRICES

The survey records account for a total of almost 10,000 sheep of all classes, sold off the farms during the 1950-51 year; the great bulk of these sales taking place in late summer and autumn of 1951, with the numbers going off depleted by the higher than normal losses in ewes and lambs in the earlier part of the year.

This part of the survey was not repeated in detail in 1952. A three-year comparison of prices obtained for sheep from the same twelve farms each year is given however, in Part 8 of the report.

A statement of total sales from 40 units is as follows:-

Table 36 - Sheep Disposals, 1950-51

	Sold:-		On hand, Nov'r. 1951, as "Feeding"
	To M.O.F.	At Auction or Privately	
Ewes	598	3065	86
Lambs. 1951 Mixed	576	-	89
do. do. Ewe	x	676	-
do. do. Wedder	x	3771	-
Ewe Hoggs and Gimmers	x	279	-
Wedders, 1950 crop	86	170	-
" 2½ - 3½ years	337	255	-
Rams	76	91	-
	<u>1673</u>	<u>8307</u>	<u>175</u>

In the year under review the number of ewes and lambs "graded" for Ministry of Food disposal was small compared to the total which went off the farms to the buyer via auction marts or by private sales.

As regards the draft and cast ewes, the total sold (plus those on hand at November as "feeding ewes") was 3,749 and of this, 82% were sold at auction or privately. In an earlier section it was shown that the sellers thought that about 85% of these sales would be fit for further breeding.

Store Ewes and Lambs

Markets The farms of the surveyed area are about 2-3 hours distant by road from the Glasgow market and a rather longer distance from the important sheep markets in Lanark and Stirling.

Of the total of 7,512 ewes and lambs sold by auction or privately in 1950-51, a total of 4,837 were sold at Glasgow market; not far short of two-thirds of total store sales going to this market. The following table shows the importance of the markets.

Table 37 - Markets for Store Sheep

Market	Store Ewes		Ewe Lambs		Wedder Lambs	
	No.	%	No.	%	No.	%
Balliemore	258	8.4	112	16.6	510	13.5
Dalmally	27	.9	-	-	150	4.0
Glasgow	1623	53.0	446	65.9	2768	73.4
Stirling	65	2.1	-	-	-	-
Lanark	97	3.2	60	8.9	248	6.6
Ayr	804	26.2	-	-	-	-
Other Markets	-	-	-	-	-	-
Privately	191	6.2	58	8.6	95	2.5
	<u>3065</u>	<u>100.0%</u>	<u>676</u>	<u>100.0%</u>	<u>3771</u>	<u>100.0%</u>

The sales at "Balliemore" represent local "special" sales within the survey area.

Prices

The prices of store sheep in Scotland at the autumn markets were higher in 1951 than in 1950, when values had dropped compared to 1949. In general, the 1951 prices were closely comparable to those of 1949.

For the store sheep sold off the surveyed farms, the ranges of prices obtained were:-

Table 38 - Prices Obtained for Store Sheep

<u>Shillings</u> per head	<u>Store Ewes</u>		<u>Ewe Lambs</u>		<u>Wедder Lambs</u>	
	<u>No.</u>	<u>£</u>	<u>No.</u>	<u>£</u>	<u>No.</u>	<u>£</u>
75/- - 80/-	393	12.9	-	-	-	-
70/- - 75/-	8	.3	-	-	-	-
65/- - 70/-	641	21.0	-	-	52	1.4
60/- - 65/-	262	8.6	55	8.1	446	11.8
55/- - 60/-	604	19.8	52	7.7	817	21.7
50/- - 55/-	775	25.4	60	8.9	983	26.1
45/- - 50/-	121	3.9	44	6.5	578	15.3
40/- - 45/-	125	4.1	138	20.4	386	10.2
35/- - 40/-	25	.8	36	5.3	212	5.6
30/- - 35/-	83	2.7	58	8.6	107	2.8
25/- - 30/-	11	.4	95	14.1	84	2.2
20/- - 25/-	4	.1	124	18.3	66	1.8
15/- - 20/-	-	-	-	-	40	1.1
10/- - 15/-	-	-	14	2.1	-	-
5/- - 10/-	2	Neg.	-	-	-	-
	<u>3054</u>	<u>100.0%</u>	<u>676</u>	<u>100.0%</u>	<u>3771</u>	<u>100.0%</u>

For 11 ewes the selling price was not available.

Of the ewes sold, 54% fetched between 50/- and 65/- per head, or, using a narrower range of 50/- to 60/- per head, 45% of the total ewe sales fell within this price-range. The largest single price group - 50/- to 55/- per head - accounted for 25% of the store ewes sold.

The total number of ewe lambs sold was relatively small. A fifth of the total sold fetched 40/- to 45/- per head.

The main range of wedder lamb prices lay between 40/- to 60/- per head, with 48% of the total sales making between 50/- and 60/-.

The average store sheep prices at certain Scottish markets in the autumn of 1951, (from data supplied by the Farm Economics Branch of the Department of Agriculture for Scotland) give material for a comparison with the prices obtained for store sheep sold off farms in the survey area.

Table 39 - Average Prices of Blackface Sheep at Certain Scottish Markets. Autumn, 1951

	<u>Draft, Uncrossed Ewes</u>	<u>Ewe Lambs</u>	<u>Wedder Lambs</u>
Ayr	71/6	51/3	53/7
Lanark	75/6	73/6	58/6
Oban	47/3	42/1	50/10
Stirling	65/4	49/-	52/4
Scottish Average	63/10	56/-	55/9

Quotations for the Glasgow market, which handled the main bulk of the store sheep from the area, are not available, but a comparison of the prices made by survey area sheep (no matter where sold) with the seasonal averages of the Stirling and Oban markets is of some guide to the quality of the sheep sold off the area.

Taking the Stirling average for draft, uncrossed ewes in 1951 as 60/- to 70/- (actual average .. 65/4d) and the similar average at Oban as 45/- to 50/- (actual average .. 47/3d), then, over 50% of the ewes from the



surveyed area made less than the average obtained for the season at Stirling market but almost 90% obtained more than the Oban market average. Again, with ewe lambs, almost 70% of the relatively small number fetched less than the Stirling average and close on 50% fetched less than the Oban average. Regarding wedder lambs the majority made prices about equal to those at Stirling and, on the whole, higher than at Oban.

On this broad basis of comparing stock values, and keeping in mind outward haulage costs in relation to the Oban market and the wide area of better quality land from which Stirling market draws supplies, the ewes and wedder lambs from the surveyed farms made prices which compare reasonably favourably with the averages of these two markets. With ewe lambs, however, part of the price disadvantage can be explained by the fact that, after a bad lambing, surplus ewe lambs were scarce, and the bulk of the sales would be of "shott" or "mid" quality.

#### Store Wedder Sheep

In this case the term "store" has been used for wedder sheep sold by auction or privately as distinct from such sheep sold "graded" to the Ministry of Food. While it is not possible to give proportions, a considerable number of the older wedder sheep classified as sold "store" would be fit for fairly immediate slaughter.

The wedder sales through auction marts or privately were grouped into two age classes:-

- (a) Those of the 1950 lamb crop, sold in 1951 at up to 18 months old.
- (b) Those of the 1948 and 1949 lamb crops, sold in 1951 about 2½ years and 3½ years old.

For these two classes the numbers sold and the prices obtained are given below.

For the wedder sheep of up to 18 months old the average price obtained per head was 68/-<sup>x</sup>, with price-groupings as follows:-

Table 40 - Prices of Store Wedders (1½ years old)

<u>Price Range Groups</u> (Shillings)	<u>No. Sold</u>	<u>% in Price Group</u>	<u>Average price per head</u>
80/- - 100/-	33	19.4	86/-
60/- - 80/-	105	61.8	70/-
40/- - 60/-	14	8.2	56/-
Under 40/-	18	10.6	30/-
	<u>170</u>	<u>100.0%</u>	

For the group of older wedder sheep, the overall average price was 113/-<sup>†</sup> per head, the price ranges being:-

Table 41 - Prices of Store Wedders (2½ - 3½ years old)

<u>Price Range Groups</u> (Shillings)	<u>No. Sold</u>	<u>% in Price Group</u>	<u>Average price per head</u>
120/- - 140/-	150	58.8	125/-
100/- - 120/-	58	22.8	109/-
80/- - 100/-	24	9.4	86/-
60/- - 80/-	20	7.8	71/-
Under 60/-	3	1.2	47/-
	<u>255</u>	<u>100.0%</u>	

#### Graded Sheep

As shown in Table 36 the numbers sold direct to the Ministry of Food for slaughter were small compared to those sold under the store classification.

x In 1952 the corresponding average price was 74/- per head  
 † " " " " " " " 118/- " "

Ewes:- A total of 598 ewes were sold 'graded', the official payment classifications being:-

Light-Weight Ewes (1st Grade) (E.R.1.)	509
Sheep (1st Grade) (S.R.1.)	86
Miscellaneous	3
	<u>598</u>

Lambs:- For the total of 576 'graded' lambs, the official payment classifications were:-

First Grade Lambs (L.R.1.)	516
Second Grade Lambs (L.R.2.)	31
Rigg Lambs, etc.	29
	<u>576</u>

Weights of Graded Sheep

The largest single group of 'graded' ewes, making up almost 25% of the total, were paid for at a weight classification of 44 lbs. estimated dressed carcass weight per head. Over all, 71% of the 'graded' ewes were paid for at 42-46 lbs. estimated dressed carcass weight.

For 'graded' lambs, the largest single group (almost one-third of the total) had an estimated dressed carcass weight of 28 lbs. Within a wider weight grouping of 27-30 lbs. fell 84% of the lambs 'graded'.

Of the small number of younger wedder sheep graded, 50% were paid for on a basis of 36-37 lbs. dressed carcass weight and 26% at 40 lbs.

In the group of older wedder sheep ( $2\frac{1}{2}$  -  $3\frac{1}{2}$  years old), roughly one-third of the total were paid for on carcass weights of 46-48 lbs. and 38% at weights of 52-58 lbs.

PART 8

REVENUE, EXPENDITURE AND RETURN

Although in 1951, financial statements were available from 15 units, it was decided to include in this final report only those which provided statements for the three consecutive years 1951, 1952 and 1953. There were 12 farmers who furnished statements of revenue, expenditure and return each year. Although this sample may be too small to be full representative of the whole surveyed area, nevertheless it forms a useful basis for comparing the lamb crop years 1951, 1952 and 1953.

GENERAL AVERAGES FOR 12 UNITS

From the 12 financial statements obtained - 10 of which ended about November and 2 about May - general averages were prepared. Since the same 12 farms were involved each year, some of the annual averages (e.g. acreages etc.) were almost identical. In such cases, only one year (1953) is given.

Average Size and Cropping (1953)

Ploughland Crops	20 acres
Hay	16 "
Grass	45 "
Rough Grazing	<u>1556</u> "
Total	<u>1637</u> "

Oats accounted for 13 acres of the ploughland, potatoes 2 acres, turnips 1½ acres and rape 3½ acres.

Average Stocking per Unit

	<u>Autumn 1950</u>	<u>Autumn 1951</u>	<u>Autumn 1952</u>	<u>Autumn 1953</u>
Ewes & Gimmers	523	514	507	494
Ewe Hoggs	164	130	146	145
Wedder Hoggs	31	25	27	24
Older Wedder Sheep	28	28	28	29
Cows	16	13	14	16
All Other Cattle	27	23	27	29

The drop in sheep numbers, particularly ewe hoggs, between autumn 1950 and autumn 1951, reflects the bad winter and poor lambing season in 1951. The continuing fall in ewe numbers in 1952 and 1953 however, was not due to any natural cause but to the disposal of a number of stock ewes from one unit, which was to be partially afforested.

The decrease in cattle between 1950 and 1951 was partly due to the poor harvest of 1950. With the prospect of a winter fodder shortage, there was some forced selling in the autumn and early winter of 1950. Also the death rate (4%) in cattle in 1950-51 was double that of 1951-52 and more than double that of 1952-53. Attestation was proceeding fairly rapidly in the area and thus the regular cattle policy may have been temporarily obscured. In general, it would appear that by the autumn of 1953, the average farm was again carrying as many cattle as prior to 1950-51.

Stock Carrying Capacity

The average stock carrying capacity expressed per ewe was 3.2 acres of total farm size or approximately 3 ewes to every 10 acres.

It is difficult to find a method of measuring the cattle carrying capacity of hill farms which holds for all types of cattle enterprises encountered. Using the method defined earlier (Page 26), - the linkage between cattle stocks and the supply of home-grown foods - it was calculated that for each cattle beast on hand at the beginning of the 1952-53 winter there was .7 fodder acres<sup>X</sup> available. Expressed per cow carried, the figure was 2.1 fodder acres.

Over the 12 units, the ratio of sheep to cattle, expressed as the number of ewes for each cattle beast carried at the beginning of each winter, varied slightly.

	<u>1950-51</u>	<u>1951-52</u>	<u>1952-53</u>
Average Ewes per Cattle Beast	12	14	12
" " " " " (unweighted)	14	19	15

Where each farm was treated as being of equal importance irrespective of size, the variation was greater, as the unweighted calculation shows. The increase in the ratio of sheep to cattle in the autumn of 1951 illustrates again how cattle were reduced in numbers on these farms, as a result of the bad season 1950-51.

On each individual unit, the relationship between sheep and cattle varied. The range in 1953 was from 4 ewes per cattle beast on one unit to 31 ewes per cattle beast on another.

Average Rent

The average rent per unit was £104 or £4. 2/- per score of ewes. There was no significant change in the average rent over the three years.

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X Fodder acres = total ploughed land - excluding potatoes and rape - plus rotation and permanent hay.

Lamb Marking Percentages

These figures have been expressed as the number of lambs marked per 100 ewes and gimmers at tugging time.

	<u>1951</u>	<u>1952</u>	<u>1953</u>
Average	58%	70%	73%
Range	41%-75%	60%-80%	66%-86%

References to the weather in 1950-51 having been made elsewhere, it is sufficient to say that the lambing season in 1951 was one of the most trying for many years. Ewes were poor in condition and, with the shortage and lateness of spring grass, in many cases they had not sufficient milk.

Mortality among ewes and lambs was high. The average marking percentage of 58% for the twelve units was some 5% higher than the average for the forty units surveyed in 1951. This may indicate that the sample of financial statements came from units which fared rather better that year than the survey area as a whole.

In contrast, the winter and spring of 1951-52 was much more favourable. The weather at tugging time was mild and open. Although heavy falls of snow in January and early February gave hill ewes a check, the mild weather in March and April compensated, and ewes came to lambing in good fettle and with plenty of milk. The lamb crop in 1952 over the same twelve farms averaged 70%. The average lamb marking percentage for the units revisited that year, 34 in all, was also 70%. Thus it would appear that in 1952 the sample was fairly representative of the area.

There were no extremes of weather in the 1952-53 season. The winter and spring were almost ideal for sheep, and ewes were in good condition at lambing time. "An even better lambing season than the previous year" was a common opinion but this was not unanimous. Four of the farms in the sample had slightly lower marking percentages than they had had in 1952.

An examination of the individual figures for each farm over the three years revealed considerable variation in lamb crops from farm to farm each year and especially in the bad season of 1951. In the favourable seasons of 1952 and 1953, the range (20%) between the lowest and highest marking counts was the same for both years. It also was the same two farms which occupied the bottom and top positions in both seasons and both showed the same percentage increase (6%) in 1953.

Since the lamb crop is an important yardstick of success in hill sheep farming, it would appear that a combined study, covering the veterinary, farm management and economic aspects of lamb crops over a much larger sample of farms, would be of value. That the Blackface ewe is a prolific breeder when on good cross-lamb hills or on lowground is accepted. On the poorer hills, the problem of mortality in lambs at and between lambing time and marking time is considerable and urgent.

Ewe Death Rates

	<u>1950-51</u>	<u>1951-52</u>	<u>1952-53</u>	
November Dipping to July Clipping	10.2	5.1		) Accurate split not possible
July Clipping to November Dipping	1.6	1.7		
	<u>11.8%</u>	<u>6.8%</u>	<u>8.5%</u>	

In each season, the number of ewes dead or missing was expressed as a percentage of the number of ewes and gimmers at tugging time.

The winter and spring mortality in 1951-52 was exactly half that of the similar period in 1950-51. The summer death rate was virtually the same in both seasons. Unfortunately, in 1953, accurate clipping counts were not available for all twelve units and thus period death rates were not possible.

Lamb Death Rates

Each year the percentage of dead lambs from marking time to disposal was in the region of 5%.

Reconciliation of Sheep Numbers

Table 42 - Reconciliation of Sheep Numbers

<u>Average Number per Farm</u>	<u>1950-51</u>	<u>1951-52</u>	<u>1952-53</u>
On Hand. Opening Valuation	815	782	798
Bought	7	9	7
Lambs Marked	308	366	373
Total	1130	1157	1178
Sold	233	274	297
Died	115	85	104
On Hand. Closing Valuation	782	798	777
Total	1130	1157	1178

Expressing the total number of deaths in sheep, including lambs, as a percentage of the total of all classes of sheep stock, in 1950-51 the percentage was 10.1 over the twelve farms, compared with 7.3% and 8.8% in 1951-52 and 1952-53 respectively. These death rates are not truly valid for seasonal comparisons as two of the accounts in the sample had 28th May valuations. Thus, these two accounts cover a different lambing time and a different winter from the others ending in November or December. The ewe and lamb death rates given in the previous paragraphs, however, do give a true seasonal comparison.

Table 43 - Reconciliation of Cattle Numbers

<u>Average Number per Farm</u> <sup>x</sup>	<u>1950-51</u>	<u>1951-52</u>	<u>1952-53</u>
On Hand. Opening Valuation	43	37	41
Bought	4	4	5
Born	11	11	13
Total	58	52	59
Sold	19	10	13
Died	2	1	1
On Hand. Closing Valuation	37	41	45
Total	58	52	59

x To nearest whole number

Over the twelve farms, the death rate in cattle in 1950-51 was 4.0%; in the following two years it was 2.2% and 1.4%.

By expressing the number of calves born each season as a percentage of the number of cows and heifers put to the bull, the following 'calving percentages' were obtained.

<u>1950-51</u>	<u>1951-52</u>	<u>1952-53</u>
75%	80%	84%

In 1950-51 on several units the cattle breeding policy was in a state of transition and consequently the calving rates on such farms were not typical. The 1952 and 1953 calf-crop figures however were fairly accurate. The range per unit in 1952 was from 60% to 100% and in 1953 from 64% to 100%. Two herds, one of 28 cows and the other of 3 cows, had a full crop of calves in 1952; one herd of 10 cows had a 100% crop in 1953.

## AVERAGE FINANCIAL RETURNS

The preceding notes on size, stocking, the weather and its effects on stock, etc. should be kept in mind when considering the profitability of the average farm over the three years 1951-53.

### Accounting Method and Terms

Some explanations of accounting method and of terms used is necessary.

"Trading Revenue" and "Trading Expenditure" relate to the normal tenancy income, (but see below), and outgoings, but exclude any revenue from the sales of implements, motor cars, etc. and any expenditure on the purchase of new implements, equipment and cars. These items, (of "capital" revenue and expenditure), are dealt with separately under the "depreciation" calculation or, where included, this is indicated by headings of "Total Revenue" and "Total Expenditure".

All revenue and expenditure arising out of ownership of any farm is excluded, but a rent and the tenancy share of rates, etc. is charged for all "owner-occupied" farms.

It has to be noted that it was decided to exclude any revenue from the sale of rabbits and any expenditure by way of special rabbit-trapping wages. Also, for various reasons, it was decided to exclude all revenue from the sale of poultry and eggs, and a reduction, equivalent to the cost of purchased foods used by poultry, was made from the expenditure on feeding. This exclusion of the poultry branch of these hill-farms would not greatly lower the farming returns as flocks were not important.

Where a paid manager was employed, his salary and perquisites were charged but the total is shown separately outwith the heading of Trading Expenditure; the small sum representing the value of his farm-produced perquisites being included with Trading Revenue. The separation of this management charge from Trading Expenditure was to give a common point at which the figures for all farms - whether run by the farmer or by a paid manager - would be on a comparable basis.

Depreciation was allowed on all equipment on hand at the date of the opening valuation and on all new equipment purchased during the year. The rates used were those allowed for income-tax purposes but Initial Allowances were not included. The gross charge for depreciation was reduced by the full value realised for any equipment sold, but, as the adjustment was a minor one, the term "depreciation" was retained.

Trading Revenue includes the estimated value of any farm produce used, or given as perquisites to workers, and also the share of any items (such as house rent, car expenses, etc.) chargeable to private account. As already stated, it contains a minor credit for the perquisites of a paid manager.

Stock and crop valuations at the opening and closing dates of the financial statements were on comparable lines. The "capital-stock" types of sheep (ewes, gimmers, ewe-hoggs and rams) were valued at the same per head values at both opening and closing dates, but feeding sheep and older wedder sheep had market value as the basis of the valuation.

Thus the figure of "Profit" represents the balance of Trading Revenue over Trading Expenditure; less the charge for depreciation; plus or minus any increase or decrease in the stock and crop valuations over the year. Up to this Profit stage, no charge has been made for the manual or managerial work of a paid manager, or of the farmer, his wife or their equivalent.

The term "Surplus" - or "Deficit" - is used for the figure obtained after reducing Profit by the salary to a paid manager or by estimated figures taken as representing the value - at current hired labour rates - of the manual work done by the farmer or wife, or their equivalent.



Table 44 - Average Financial Returns per Unit and per Score  
(12 Identical Units)

	Per Unit		
	1951	1952	1953
Trading Revenue	£2286	£2314	£2754
Less Trading Expenditure	1502	1748	1814
Balance	784	566	940
Less Depreciation on Equipment	141	126	149
	643	440	791
Change in Stock & Crop Valuation	(-) 200	(+) 246	(+) 62
<u>PROFIT</u>	443	686	853
Charge Salary to Paid Manager	55	53	55
Estimate of Farmer's Manual Work	178	189	187
Estimate of Wife's Manual Work	18	15	11
<u>SURPLUS</u>	£192	£429	£600

Per Score of Ewes

	1951	1952	1953
Trading Revenue	£88.15/-	£90.15/-	£108.13/-
Less Trading Expenditure	58. 4/-	68.12/-	71.12/-
Balance	30.11/-	22. 3/-	37. 1/-
Less Depreciation on Equipment	5.11/-	4.19/-	5.17/-
	25. 0/-	17. 4/-	31. 4/-
Change in Stock & Crop Valuation	(-) 7.16/-	(+) 9.13/-	(+) 2. 8/-
<u>PROFIT</u>	17. 4/-	26.17/-	33.12/-
Charge Salary to Paid Manager	1.19/-	2.2/-	2.3/-
Estimate of Farmer's Manual Work	7. 3/-	7.8/-	7.8/-
Estimate of Wife's Manual Work	13/-	12/-	8/-
<u>SURPLUS</u>	£7. 9/-	£16.15/-	£23.13/-

Before examining the averages given in Table 44 in more detail, certain important factors should be considered concerning the average Profits and Surplus, lest any misunderstandings should arise about the profitability of these hill sheep farms during the period under review.

The Profit each year represents the accountancy figure out of which the farmer has to cover all his private expenses; pay Income Tax liabilities for previous years and lay aside the remainder - if any - as savings to meet future contingencies.

The Surplus, - the remainder of the Profit left after making an estimated charge for the full-time or part-time manual work of the farmer and wife or the manager's salary in the case of managed farms - represents the accounting figure available to meet interest on tenancy capital invested and recompense for the farmer managerial skill. As there were only two managed farms in the sample, the average figure of salary to paid manager is low. Similarly, not all the farmers were doing full-time manual work and consequently the average figure may appear to be low. The same applies in the case of the average amount of wife's manual work.

The importance of subsidies in the economy of these hill farms (carrying around 500 ewes) must not be overlooked.

In 1951, the last year in which a per head subsidy (2/6) on ewes was paid, grants and subsidies amounted to a total of £274 per farm or £10.12/- per score of ewes. Had there been no revenue from subsidies, the average farm would have had a deficit of £82 or £3. 3/- per score of ewes.

In 1952, total subsidies amounted to £325 per farm or £12.15/- expressed per score of ewes. Without subsidies, the surplus per farm would have been reduced to £104; the surplus per score would have fallen from £16.10/- to £3.15/-.

In 1953, the total subsidy revenue (£427) was over £100 per farm higher than in 1952. Expressed per score of ewes, the average figure was £16.17/- . Had there been no such revenue, the average surplus would have been £173 per farm or £6.16/- per score.

Range and Distribution of Surplus

The following table summarises the profitability of the twelve farms, measured in terms of surplus per score of ewes, for the three lamb-crop years under review.

Table 45 - Range and Distribution of Surplus  
Per Score of Ewes

	1951	1952	1953
No. of Units with a Surplus	10	9	11
" " " " " Deficit	2	3	1
*Average Surplus per Score	£6	£14	£22
Range per Score	-£34 to +£27	-£15 to +£41	-£21 to +£56
Distribution of Surplus:-			
Over £40 per Score	-	1	2
£21 to £40 per Score	2	3	6
£0 to £20 " "	8	5	3
-£1 to -£20 " "	1	3	-
Over -£20 " "	1	-	1
	<u>12</u> Units	<u>12</u> Units	<u>12</u> Units

In Table 44, the figures for Trading Revenue and Trading Expenditure are given in total. Some details of the most important items included in these totals are given in the next table.

To avoid unwieldy tables, the items have been expressed per unit only.

Table 46 - Average Trading Revenue and Expenditure. 12 Units 1951-53.

Trading Revenue

	1951		Per Unit 1952		1953	
	£	%	£	%	£	%
Cattle	438	19	350	15	493	18
Sheep	690	30	860	37	991	36
Wool	785	34	624	27	696	25
Hill Sheep Subsidy	(64)		-)		-)	
Hill Cattle Subsidy	105)		93)		172)	
Calf Subsidy	32)	12	47)	14	58)	16
Attestation Grant	14)		48)		71)	
All other Grants & Subsidies	59)		137)		126)	
All other Trading Revenue	99	5	155	7	147	5
TOTAL TRADING REVENUE	<u>£2286</u>	<u>100%</u>	<u>£2314</u>	<u>100%</u>	<u>£2754</u>	<u>100%</u>

Trading Expenditure

Cattle	94	6	107	6	138	7
Sheep	67	4	76	4	71	4
Concentrate Foods and Fodders	93	6	55	3	74	4
Wintering	35	2	38	2	39	2
Seeds and Manures	205	14	278	16	257	14
Labour (except Manager, Farmer and Wife)	446	30	516	30	560	31
Repairs to Buildings, Drains and Fences	46	3	90	5	88	5
Rent	102	7	104	6	104	6
Dip, Vet, Medicines, etc.	88	6	90	5	71	4
All other Trading Expenses	326	22	394	23	412	23
TOTAL TRADING EXPENDITURE	<u>£1502</u>	<u>100%</u>	<u>£1748</u>	<u>100%</u>	<u>£1814</u>	<u>100%</u>
EXCESS REVENUE OVER EXPEND' E.	<u>£784</u>		<u>£566</u>		<u>£940</u>	

THREE YEAR COMPARISON OF TRADING

When comparing the trading account for each year, the change in the number of stock on hand at the date of the closing valuation each year must be kept in mind. A statement of average stock numbers each autumn is given on Page 38.

x Giving each farm equal weight irrespective of size.

### Cattle Sales

On the Revenue side, the average income from the sale of cattle in 1951 was proportionately higher - compared with the income from sheep sales (excluding wool) - than in 1952 and 1953. In the first year, cattle sales amounted to approximately two-thirds of the value of sheep sales, whereas in 1952 and 1953 it was less than half, and one half respectively. The average number of cattle sold each year was 18.6, 10.2, and 13.2 and the per head value, averaged out over all classes, was £23.11/-; £34. 6/- and £37. 7/-.

The majority of the cattle sold each year were stores, mainly two-year olds or over. The number sold and the low value per head in 1951 reflect the forced selling under poor market demand in the early winter of 1950-51, brought about by the fodder shortage from the 1950 harvest.

### Sheep Sales

The effects of the extremely unfavourable lambing season in 1951 is partly illustrated by the low amount of revenue from sheep sales. The 1951 total of £690 was £300 less per farm than the corresponding figure for 1953. Not only were there fewer lambs to sell but also the prices realised at grading centres and auction marts were lower than in 1952 and 1953. The following figures show a progressive improvement, both in the number of lambs sold and in the average price per head, in 1952 and 1953.

	<u>1951</u>		<u>1952</u>		<u>1953</u>	
	<u>No.</u>	<u>Av.Price</u>	<u>No.</u>	<u>Av.Price</u>	<u>No.</u>	<u>Av.Price</u>
Store Lambs	96	46/-	125	49/-	148	56/-
Graded "	18	68/-	32	76/-	26	80/-
Total Lambs	<u>114</u>		<u>157</u>		<u>174</u>	
Sold per Farm						

#### Equivalent figures for ewes:-

Draft Ewes	52	55/-	52	63/-	66	63/-
Graded Ewes	32	60/-	19	71/-	15	80/-
Other Ewes	-	-	13	42/-	9	40/-
Total Ewes Sold	<u>84</u>		<u>84</u>		<u>90</u>	
per Farm						

Of the ewes sold through the store ring, 'draft ewes' were those which were fit for further breeding; 'other ewes' included shotts, broken-mouthed, etc.

It is interesting to note that on the average farm, the same number of ewes were cast in 1951 as in 1952, despite the higher ewe death rate in 1950-51. It would appear that no attempt was made to maintain the breeding ewe stock numbers constant by the retention for a further year of some of the ewes which were due for casting in 1951. However, a detailed comparison of the average ewe stock each year was impossible, as in 1952 and 1953 some land on one unit was being resumed for afforestation thus disrupting the normal ewe casting policy.

The average figure of revenue from the sale of all classes of sheep each year may be of wider interest when expressed per score of ewes carried (at tuppung time). Such figures for 1951, 1952 and 1953 were £26.15/-, £33.15/-, and £39. 2/- respectively. The per head values of all sheep sold, averaged over all classes, were 59/-, 63/- and 67/-.

### Wool

In 1951, wool was the largest single item of trading revenue, amounting to over one-third of total farm receipts and exceeding by 4% the revenue from sheep sales. It was undoubtedly the high price of this commodity, 70d per pound, which counteracted the effect of the heavy stock losses and low lamb marking counts with the resultant drop in numbers available for sale. If, in Table 46, revenue from sheep and wool are added together, then the 1952 total exceeds the 1951 total by only £9. The 1953 figure is over £200 per farm higher than in 1952.

The price of Blackface wool from the 1952 clip was 55d per lb. a fall of 15d per lb. from the 1951 price. This lower price meant a drop in revenue of approximately 5/- on every fleece. However, the increase in

lambs sold (43 more) and the increased price per head received for both lambs and ewes in 1952, fully compensated for the drop in wool revenue.

The 1953 wool price was 56<sup>3</sup>/<sub>4</sub>d per lb., an increase on 1952 of 1<sup>3</sup>/<sub>4</sub>d per lb. or 7d per 4 lb. fleece.

In 1951 the average farm sold 2,867 lbs of wool (including docks, fallen, etc.) in 1952, 2,843 lbs and in 1953, 2,895 lbs. As clipping counts were not available in every case, it was not possible to work out the fleece weight per clipped sheep. The weight of wool sold per score of ewes carried, however, gives a figure of comparison for each year. For the three clips from 1951 to 1953, the average weights of all wool sold per score of ewes carried at November were:- 110 lbs, 111 lbs, and 114 lbs.

### Subsidies and Grants

The important part played by subsidies and grants in the economy of these hill farms has been mentioned earlier but an examination of the main individual subsidies illustrates some changes in both volume of subsidy revenue and the shift in emphasis towards cattle raising over the three-year period.

The total revenue from subsidies and grants was, on the average farm, £274 in 1951, £325 in 1952 and £427 in 1953. Although the revenue from such sources rose by £153 per farm or 56% between 1951 and 1953, the percentage of total revenue contributed by subsidies and grants rose only 4%, from 12% in 1951 to 16% in 1953.

The hill sheep subsidy of 2/6 per ewe - payable on the numbers at 4th December 1951 - although actually received in 1952, was credited to the 1951 accounts, as that was the year to which it referred. The hill sheep subsidy (£64 per farm) did not play such an important part as did the high wool price in alleviating the effects of such a poor year.

The direct subsidies on cattle, viz. the Hill Cattle Subsidy, the Calf Subsidy and the Attestation Grant, amounted to £151 in 1951, £188 in 1952 and £301 in 1953.

The main reasons, other than the change in actual numbers of eligible stock, for the two-fold increase in revenue from direct cattle subsidies between 1951 and 1953 were:-

Firstly, the spread of attestation; the average revenue per farm from attested grants in 1953 being over five times the sum received in 1951. Secondly, the inclusion of heifer calves of a beef type born after 1st October 1951 in the calf-rearing subsidy scheme; thirdly, the existing £7 per hill cow and in-calf heifer subsidy was augmented by the £3 per head winter keep allowance. Although this allowance was granted for both the 1951-52 and 1952-53 winters, in the accounts in question most farmers did not receive the 1951-52 allowance until their 1953 financial year, hence the increase in the 1953 figure of hill cattle subsidy in Table 46.

It may be of interest to examine what change in sales price would have been necessary to maintain the revenue from cattle at the 1953 level, if there had been no such direct cattle subsidies.

	<u>Per Farm Average, 1953</u>
Revenue from Direct Cattle Subsidies	£301
" " Sales of Cattle	493
	794
Number of all Cattle Sold	13.2
Actual Price per Cattle Beast Sold	£37. 7/-

Assuming that the numbers of cattle sold were the same, the average price per cattle beast sold would have needed to be in the region of £60. A change of such magnitude in the sales price would be clearly impossible under present conditions, especially when it is kept in mind that included in cattle sales are cast cows, calves, etc.

Included in the heading "All Other Grants and Subsidies" were the lime subsidy, marginal land grant, and bracken cutting grant in each of the three years; grants for ploughing old grass-land (£33 and £36 per farm) and for fertilisers applied to grass-land in the 1952 and 1953 accounts; drainage grants and, in 1951, a grant under the Hill Farming Act Scheme. During the three-year period only one unit had such a scheme, part of the grant for which was received in the 1951 accounting year.

"All Other Trading Revenue" included receipts from crop sales (mainly potatoes) amounting to £33, £61 and £48 per farm for 1951, 1952 and 1953. The remaining revenue covered various miscellaneous items and accounting credits such as produce used in house, private share of car, etc.

#### Expenditure

On the Expenditure side of Table 46, the total trading expenditure increased each year but the proportions spent on individual items remained relatively constant.

Without exception, all the sheep bought were rams, the average price per ram being around £10 each year. The higher figure for "Concentrate Foods and Fodders" in 1951 reflects the shortage of home grown fodder and the need to purchase hay, at a high price. In 1951, £43 per farm was spent on purchasing hay whereas in 1952 no hay was bought. In 1953, purchased hay amounted to £14 per farm.

The bill for labour, excluding manager's salary or the charge for farmer and wife's manual labour, increased each year. The increase of £70 per farm in 1952 was due in the main to a change in the Wages Board rates at 5th November, 1951, when the minimum wage for shepherds rose by 9/- per week. There was another increase in wages of 9/- per week at 14th September 1953 which is reflected to a small extent in the 1953 accounts. Labour, even excluding manager, farmer and wife, was the largest single item of expenses on these farms each year, amounting to just under one-third of total trading expenditure.

The relatively small average amount of wintering expenses is an indication of the extent to which cwo hogs were wintered at home. Nine farms in the sample wintered their ewe hogs at home. Nevertheless, for the three farms sending hogs away, wintering was a considerable item in their annual expenses. In general, wintering rates tended to increase each year from 1951 to 1953. (See Page 20 for details of hogg wintering in the area).

'Rent' contains two forms of rent:- the rent of the actual farm and on some units, the rent for additional land, taken annually. If the rent paid for this additional annual land is omitted, the sum spent in 1951 and 1952 on dip, vaccines, etc. exceeded the rent of the average farm.

Implement repairs, tractor fuel and car running expenses made up a considerable part of "Other Trading Expenses". Haulage amounted to approximately £60 per farm per annum.

#### Changes in Stock and Crop Valuations

In 1952, the average trading revenue rose by only £28 per farm while the average trading expenditure rose by £246. Consequently the excess of revenue over expenditure was £218 less in 1952 than in 1951. The increase in stock and crop valuation in 1952 however, more than offset this decline in "real margin". The valuation increase per farm was £246 compared with a fall in 1951 of £200.

The main items which brought about this increased valuation were ewe hogs and cattle, there being on the average 4 more cattle and 16 more ewe hogs per farm at the close of 1952. Also it was in these very classes of stock that the heaviest fall in valuation had occurred in 1951. Again this illustrates the effects of the poor season 1950-51.

Comparing the valuation change between 1952 and 1953, the increase (£62) was slight. This was due to the fact that by the time of the closing valuation in 1952, the stock numbers were back to normal and although there were 4 more cattle beasts on hand at the close of the 1953 accounting period, there was a score of sheep less, mainly ewes, brought about by the enforced selling from one unit to be partly afforested.

#### New Equipment and Depreciation

The average money spent on new equipment, including cars, each year was £111, £148 and £189 per farm. "Depreciation" - reduced by any money realised by the sale of cars or equipment (negligible except in 1952 when it was £44) - was relatively constant each year, the average of the three years being £139 per farm.

PART 9

REVENUE IN RELATION TO PROFITABILITY

The financial material collected has dealt with the immediate past. For some aspects, such as farm size, tenure, etc. the position will change but slowly; for others such as farm revenue and return, the position is more fluid. As a conclusion, it is of interest to speculate on the degree to which any fall in farm revenue - due to falling prices, diminished grants and subsidies or a combination of both - would affect the profitability.

In contrast to arable farming and dairy farming where the level of output can be altered to meet changing economic conditions, in hill sheep farming the annual output from a given level of stocking is more or less outwith the control of the farmer. The quantities of produce sold in the form of lambs, cast ewes and wool are determined more by biological, climatical and geographical factors than by managerial policy.

In any one season the weather, and its effects on the sheep stock, is generally by far the most decisive factor on the output level for that season. Also the effects of a particularly bad season may be reflected in subsequent seasons.

Since the breeding ewe is the basic unit of production, any adverse conditions affecting her will ultimately have a detrimental effect on the level of output. Although the farmer can, to a limited extent, improve these conditions by good husbandry and by taking advantage of veterinary and other technical aids towards higher productivity, in the main the level of output is determined more by the favours or frowns of nature. No amount of good husbandry and managerial skill can fully compensate for a poor lamb crop.

In addition to the quantitative limitations on output, the prices received for hill farm products are, with the exception of wool and fat sheep, determined by the supply and demand factors operating at the store sales. The supply of store sheep from a hill farm is very seasonal with practically all the sales occurring in the autumn. The demand for store lambs and cast ewes depends on the conditions prevailing on lowground farms at that time and the resulting managerial decisions which the lowground farmers make with regard to the place of sheep in their farm economy. On almost all hill farms this annual disposal of sheep must take place no matter what the price level may be.

On the expenditure side of the hill farm account, most of the items of input are inflexible. In addition to normal overheads such as rent, rates, etc, replacement rams must be bought; wintering obtained; labour paid and feed and other stores purchased.

Certain economies in seeds and manure purchases may be effected but due to the scarcity of home grown foods usually such changes are not desirable. The wage bill is the highest single item of expenditure and in most cases little or no economies can be made in this direction. On the "family farm" a cut in paid wages could be made but only if a fall in the family standard of living was accepted. On farms where the ewe hoggs cannot be carried over the winter, the cost of wintering is considerable. The level of wintering costs is generally influenced by the grassland policy being followed by lowground farmers and the hill farmer must take wintering no matter what the cost may be.

Thus the hill farmer finds himself in the difficult position of trying to maximise his profit in a situation where both output and expenditure are determined by factors mainly outwith his control. The levels of sheep, wool, and, to a lesser extent, cattle prices are therefore of paramount importance, especially if the revenue from grants and subsidies were to diminish or cease.

It is of interest to estimate - even if only approximately - the effect of a fall in sheep and wool prices, with other factors remaining unchanged, on the average financial return of the twelve farms in the survey sample. The estimate has been done in two parts:- firstly, with all grants and subsidies remaining at their 1953 level and secondly, with all revenue from such sources removed. The 1953 lamb crop year was selected because it was the most recent



of the three and, more important, because the opening and closing valuations of stock and crop were relatively constant; their being a rise of only £62.

Average of Twelve Farms  
1953 Lamb Crop Year

	Per Farm
Number of Ewes	500 (approx.)
Size of Farm	1637 acres
Lamb Marking Percentage	73%
Profit	£853
Surplus	£600
Revenue from Grants and Subsidies	£427
"    "    Sheep Sales	£991
"    "    Wool    "	£696
Number of Sheep Sold	297
Weight of Wool    "	2885 lbs.
Average Value of Sheep Sold	67/- per head
Wool price per lb.	56 <sup>3</sup> / <sub>4</sub> d.

Estimate 1.

Assuming for the 1953 lamb crop year that:-

- (a) the trading expenditure, (as detailed in Table 46), the "depreciation", and the change in stock and crop valuation, were as before (See Table 44).
- (b) all items of trading revenue, including grants and subsidies, were the same with the exception of sheep and wool.
- (c) the numbers of sheep sold and the weight of wool sold remained constant.

then an estimate can be made of how a fall in price of the sheep and wool would affect the Surplus.

(The Surplus is the balance of the Profit remaining after deducting a charge for the value of the estimated amount of manual work done by farmer and wife).

Although it is unlikely that the prices of the joint products, mutton and wool, would fall in the same proportion, for simplicity an equal percentage fall in both has been assumed. This has the advantage of maintaining the same proportions of revenue derived from sheep and wool as in 1953 (viz. 3:2 approx.).

The initial stage of the estimation was to find the percentage fall in sheep and wool prices which would eliminate the Surplus - i.e. leave no return beyond the equivalent of wages for manual work of farmer and wife.

Original Surplus per Farm	£600
36% fall in sheep revenue	= £352
36% " " wool    "	= <u>248</u>
Total fall	£600

Since the numbers of sheep sold and the weight of wool sold were assumed to be the same as in 1953, a 36% fall in revenue would be brought about if the per unit price of the products fell by 36% from their 1953 level. This would mean a fall in the price of wool of approximately 1/8d per lb. and a fall in the overall per head average of sheep of 24/- approximately.

Had such a level of prices prevailed in 1953, the Profit for the average farm would have just equalled the estimated value of the manual work done by the farmer and his wife.

The main reason why such considerable theoretical falls in the price of sheep and wool could be absorbed, before the average farm ceased to recompense the farmer for the value of the unpaid manual work put into it, was the volume of grant and subsidy revenue. In the next estimate where the

revenue from all grants and subsidies has been omitted, a less favourable financial picture emerges.

Estimate 2.

It is recognised that if certain grants and subsidies were not available, the expenditure on some items might be restricted or not incurred at all. For example, if no marginal land grant were available, the level of expenditure on seeds and manures might be lower; if no grants existed for schemes of draining, bracken cutting etc., such improvement schemes might not be tackled.

However, since the amount of such expenditure is unknown and, in any case, would be only a small percentage of the farm's total outgoings, the expenditure in the calculation has been unaltered from the actual figures for 1953, although all grants and subsidies have been removed from revenue. This gives the hypothetical situation of the average hill farm in the sample carrying out exactly the same policy as in 1953 but receiving no assistance in the form of grants or subsidies for so doing.

Assuming for the 1953 lamb crop year that:-

- (a) the trading expenditure (as detailed in Table 46), the "depreciation" and the change in stock and crop valuation, were exactly as before
- (b) The revenue remained constant except for sheep and wool and
- (c) all revenue from grants and subsidies was omitted
- (d) the numbers of sheep sold and the weight of wool sold remained constant

then sheep and wool prices could each fall only 10% approximately before the average Surplus would be almost eliminated.

	<u>Per Farm</u>
Original Surplus	£600
Surplus if no grant and subsidy revenue	173
10% fall in sheep revenue = £99	
10% " " wool " = £70	169

Thus in 1953, if no subsidies or grants had been received, a fall of approximately 6d per lb. in the wool price and a fall of approximately 7/- in the overall average price of sheep would have eliminated the Surplus.

A comparison of the two estimates shows the very important part played by subsidies and grants in the economy of this type of farm.

Using the 1953 figures as a base:-

- (a) On the same level of grant and subsidy revenue, to eliminate the average surplus and leave only a return for manual work would have required a fall of 36% in both sheep and wool prices, equivalent to approximately 1/8d per lb. of wool and 24/- per sheep sold.
- (b) Assuming that no grant or subsidy revenue was received, a fall of 10% in both sheep and wool prices would have eliminated the average surplus - a price fall equivalent to only 6d. per lb. in wool and 7/- per head in sheep.

It must be emphasised that 1953 was a very good hill farming year.

If a similar estimate omitting grant and subsidy revenue is made for the 1951 production year, the price of sheep sold would have had to be some 12% higher than it actually was, if the average farmer was to be recompensed for the value of his own and his wife's manual work - and that, in a year when the wool price was at a record high level. Because of this, no change was assumed in the wool price in the estimate.

In 1952, without subsidies and grants, the average Surplus per farm would have fallen to £104. A fall of 7% in sheep revenue and 7% in wool revenue in that year would have reduced this Surplus to nil.

If no grants or subsidies were available, it is clear that, even in a very good hill farming year, the amount by which sheep and wool prices could fall before the average farmer in this area would only be earning the value of his manual work is not great. It must be acknowledged, however, that all the foregoing is based on the average figures over twelve farms achieving a wide range of profitability, with naturally, the more profitable less vulnerable to unfavourable changes in revenue. The approximate estimates are, however, of value as indicators of the degree of revenue change which would markedly cut returns on the more profitable units and bring the less profitable farms to a very low level of return.

#### SOME GENERAL IMPRESSIONS

The examination, separately and in detail, of so many aspects of the farms surveyed tends to blur the overall picture of the area. In this connection some broad impressions may be useful.

With a few exceptions, the district is one of small to medium-sized farms, staffed mainly by family labour. The majority of the farms are tenanted but where estates are "breaking up", the number of owner-occupied farms is on the increase. In some instances amalgamation of farms into larger management units is taking place.

Although sheep are the foundation of the economy on all the farms surveyed, cattle are relatively more important in the area than on hill sheep farms in Scotland generally. The Blackface is, and probably always will be, the predominant breed of sheep; with cattle, there was no predominant pure breed. There was a gradual transition from dairy type to beef type store production.

The period of time covered by the survey, from October, 1950 to November, 1953, included one of the poorest and one of the best lamb crop years in the district in recent times.

It would seem from the physical and financial data available, that the area is at least as good as, and in some ways better than any other hill farming district in the West Highlands.

Although over the past 15 years the prosperity of hill sheep farms has improved considerably compared with the years of depression before the war, in many instances the degree of improvement has not been such that adequate capital reserves could be accumulated for any future large scale improvement schemes.

As the section on the condition of land and buildings indicates (Page 6), a considerable amount of rehabilitation is needed on many farms in the district.

Although state-aid amounting to 50% of the cost of such work is available under the 1946 Hill Farming Act, only five, out of forty-one units visited in 1951, were making use of the assistance offered by this legislation. At the time of writing a further three units have improvement schemes under consideration. Of these eight farms, four were owner-occupied; two were estate farms in hand and two were tenanted.

In the case of most tenanted farms, landlord and tenant must obviously co-operate in the sharing of the cost of a large scale scheme. The low level of return from the ownership of such land has handicapped the landlord. It may be that the landlord or tenant (or both) cannot find sufficient capital to embark on a scheme no matter how necessary or desirable this may

be. Also where the landlord has several tenanted farms on his estate, he may be able to share in a scheme for a few farms but not have sufficient resources to cover all the farms. Another difficulty is the comprehensive requirements of schemes if they are to qualify for a grant under the Hill Farming Act. Sufficient landlord and tenant's capital may be available to do the necessary fencing, draining, etc. but not enough to renovate the steadings. Several farmers mentioned the difficulty of finding the gross amount of money required at the outset, even although 50% of it would be eventually recovered in grants.

The rather disturbing question arises of what will eventually happen on those farms which are at present in need of renovation and where capital cannot be found to carry it out. The amount of state-aid for such improvement is not unlimited. If improvement cannot be carried out even when such aid is available, how much more difficult it would be if no grant were available. The problem is all the more pertinent in view of the present restrictions on credit.

With the spread of afforestation in the district, the pattern of the countryside is slowly changing and will, in the future, be very different from the position at the time of the survey. The problems of the successful integration of sheep farming and forestry are very pertinent to this area.

This question of the condition of the land and the buildings is linked up with the competition from the forestry industry. The decision whether or not capital is to be employed - to maintain or increase productivity - in the renovation of a larger part of the area, must be made within a reasonable time. The alternative is that, even with steady productivity (but perhaps falling prices and a lower level of Government assistance), forestry may become an even more effective competitor for the use of the land.

The area presents other economic and social problems:- the future of relatively small units; the dependence on the family for labour in a district where hired shepherds are scarce; the need for more intensive use of the scarce lowground and other frequently publicised problems common to West Highland farming.

APPENDIX TABLE

Death and Loss in Ewe Hogs from Start of Wintering to Following November. (Seasons 1950-51 and 1951-52).

	Method of Wintering Hogs															
	<u>All Hogs at Home</u>				<u>All Hogs Away</u>				<u>Part Home and Part Away</u>				<u>Total All Hogs</u>			
	<u>1950-51</u>		<u>1951-52</u>		<u>1950-51</u>		<u>1951-52</u>		<u>1950-51</u>		<u>1951-52</u>		<u>1950-51</u>		<u>1951-52</u>	
Number of Units	26		22		7		7		7		5		40		34	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Hogs at October	3183	100.0	2163	100.0	3333	100.0	2388	100.0	1644	100.0	867	100.0	8160	100.0	5418	100.0
Hogs at Clipping	2752	86.5	1915	88.5	3081	92.4	2274	95.2	1422	86.5	828	95.5	7255	88.9	5017	92.6
Available as Gimmers, Nov.	2586	81.3	1793	82.9	2996	89.9	2226	93.2	1281	77.9	792	91.3	6863	84.1	4811	88.8
Difference, Oct. - Nov.	597	18.7	370	17.1	337	10.1	162	6.8	363	22.1	75	8.7	1297	15.9	607	11.2
Of which Sales	124	3.9	96	4.4	50	1.5	34	1.4	105	6.4	23	2.7	279	3.4	153	2.8
Death and Loss:-																
October - Clipping	431	13.5	248	11.5	252	7.6	114	4.8	222	13.5	39	4.5	905	11.1	401	7.4
Clipping - November	42	1.3	26	1.2	35	1.0	14	.6	36	2.2	13	1.5	113	1.4	53	1.0
Total Death and Loss	<u>473</u>	<u>14.8</u>	<u>274</u>	<u>12.7</u>	<u>287</u>	<u>8.6</u>	<u>128</u>	<u>5.2</u>	<u>258</u>	<u>15.7</u>	<u>52</u>	<u>6.0</u>	<u>1018</u>	<u>12.5</u>	<u>454</u>	<u>8.4</u>

In the "Percentage" columns, the number of hogs at the beginning of each October - either kept at home or sent off to wintering - is taken as 100%.