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HILL FARMING RESEARCH ORGANISATION

FARM RECORDS AND SUMMARY OF FLOCK RECORDS

1979

C O N T E N T S

	<u>Page No.</u>
I. <u>FARM REPORTS</u>	
A. GLENSAUGH	1
B. LEPHINMORE	7
C. SOURHOPE	13
D. HOUSE O' MUIR	22
E. RED DEER	26
II. <u>SUMMARY OF FLOCK RECORDS FOR 1978/79</u>	29

## I. FARM REPORTS - 1979

### A. GLENSAUGH

#### WEATHER

November and December were both fairly open, so tupping was completed in favourable weather. The first snow storm came at the end of December. January and February were both stormy, with heavy snow falling every few days to replace any that had thawed. The ground was clear for about two weeks in early March before the snow returned accompanied by high winds. This lasted for about a fortnight and was replaced by sleet and rain. By mid-April, it had turned drier and May was a good month with a few hot days near the end. June was fairly dry and warm but July and August were cold and wet. There was a brief spell of fine weather in early September but the end of the month was characterised by gales, torrential rain and floods. October and November were fairly cold and saw a fair amount of rain, but fortunately, no snow!

#### SHEEPSTOCKS

All the hefts came to the tup in good condition and wintered remarkably well, in spite of the very stormy conditions. Lambing started earlier than usual (in mid-March) with the "H-Greyfaces", a flock of 170 ewes which were bought in at the end of February. The weather during their lambing was about the worst of the winter and emergency provision had to be made to bring them inside. Even so lamb losses were very high. The main flock of Greyfaces had a synchronised lambing in the first week of April which was constant rain, sleet and snow. Again, the weather conditions took their toll and lamb mortality was high. The remainder of the flocks lambed from mid-April in generally more favourable weather.

The weather in late June and early July was dry so that clipping was completed in good time. The wool crop realised a total of £5,105.41.

In general, lamb growth was similar to last year and weaning weights for the two years were roughly comparable.

Sheep health has generally been good although Jaagsiekte continues to be a problem being responsible for nine deaths over the year. Most of these have been Greyfaces but isolated cases have occurred on all three Finella hefts. Pregnancy toxæmia was a major problem among the "H-Greyfaces".

The winter and spring feeding costs are shown in Table A. These are higher than the previous year due to higher inputs through storm conditions and also a rise in the unit cost of feeds.

TABLE A

Winter Feeding

Flock	Hay		Concentrates		Total cost/hd
	Dates fed	Total/hd	Dates fed	Total/hd	
Cairn	26 Nov-28 April	63.4kg	30 Dec-31 May	46.28kg	£ 9.48
Birnie	18 Dec-28 April	59.35kg	30 Dec-31 May	47.64kg	£ 9.40
W. Finella	30 Dec-21 April	54.54kg	1 Mar-25 May	34.75kg	£ 8.58*
M. Finella	28 Dec-11 May	59.78kg	1 Mar-25 May	34.67kg	£ 8.91*
E. Finella	22 Dec- 6 May	59.72kg	1 Mar- 8 June	52.45kg	£11.04*
Greyfaces	21 Dec-11 May	115.85kg	1 Dec- 6 June	85.47kg	£17.44
H. Greyfaces	27 Feb-29 May	10.03kg	28 Feb-31 May	78.61kg	£10.24
<u>Hoggs</u>					
Cairn	26 Nov- 3 April	55.19kg	24 Nov-12 April	24.78kg	£ 6.35
Birnie	26 Nov- 3 April	55.19kg	24 Nov-12 April	24.78kg	£ 6.35
W. Finella	21 Dec-21 April	54.68kg	18 Dec-20 April	28.05kg	£ 6.72
M. Finella	21 Dec-21 April	54.68kg	18 Dec-20 April	28.05kg	£ 6.72
E. Finella	21 Dec-21 April	54.68kg	18 Dec-20 April	28.05kg	£ 6.72

Costed at:- Concentrate £122.70/tonne  
 Hay 60.00/tonne  
 Rumevite 3.59/pack  
 Colborn 3.94/pack

\* Finella ewe feeding costs include cost of feed blocks as follows:-

W. Finella 30 Dec-28 Feb 30 Rumevite + 8 Colborn  
 M. Finella 28 Dec-28 Feb 30 Rumevite + 11 Colborn  
 E. Finella 28 Dec-28 Feb 30 Rumevite + 14 Colborn

Lamb Mortality was higher than last year overall but this varied from heft to heft. Birnie losses were up due to the higher proportion of twins, many of which were too small to be viable. The Greyfaces were affected by the atrocious weather conditions during their synchronised lambing. The exceptionally high mortality in the "H-Greyfaces" was due to a combination of stormy weather, low birthweight, large number of twins and triplets, and lack of milk.

TABLE B

Lamb Mortality

Flock	Born Alive	Birth to marking	Dead		
			Marking to weaning	Total Number	%
Cairn	209	15	4	19	9.09%
Birnie	285	32	6	38	13.3%
M. Finella	199	15	3	18	9.04%
W. Finella	192	6	5	11	5.7%
E. Finella	191	22	0	22	11.5%
Greyfaces	353	31	13	44	12.46%
H. Greyfaces	293	83	10	93	31.74%
Total	1722	204	41	245	14.23%

Lamb Disposal

All lambs were sold store in August and September and prices were down on last year. Numbers sold and heft of origin are shown with prices realised in Table C.

TABLE C

Lamb Sale Prices 1979 - By Heft

Heft	Breed	No. Sold	Av. Price	Range
Cairn	BF	109	£14.58	£ 5.50 - £15.50
Birnie	BF	163	£12.83	£ 5.00 - £15.50
West Finella	BF	24	£15.06	£ 8.25 - £17.10
	BL x BF and TEX x BF	46	£18.04	£ 5.00 - £25.95
	Dorset x's	99	£21.75	£20.10 - £26.50
	All Breeds	169	£19.76	£ 5.00 - £26.50
Mid Finella	BF	29	£15.11	£ 8.25 - £17.10
	BL x BF and TEX x BF	32	£19.95	£15.10 - £25.95
	Dorset x's	65	£22.16	£20.10 - £26.50
	All Breeds	126	£19.98	£ 8.25 - £26.50
East Finella	NCC	33	£22.03	£ 9.00 - £23.90
	BF x NCC	64	£19.25	£ 9.00 - £24.90
	All Breeds	97	£20.22	£ 9.00 - £24.90
Greyface Systems	Dorset x's	309	£21.75	£ 5.00 - £32.07
H. Greyfaces	Suffolk x's	199	£23.46	£ 9.00 - £26.70
All Hefts	All Breeds	1177	£19.51	£ 5.00 - £32.07

The price, both the range and the average for each breed is shown in Table D.

TABLE D

Lamb Sale Prices - By Breed

Breed	No. Sold	Av. Price	Range
BF	350	£15.77	£5 - £17.10
Crosses	78	£16.82	£5 - £25.95
Dorset x's	473	£21.51	£5 - £32.07
Suffolk x's	199	£23.46	£9 - £26.70
NCC	33	£22.08	£9 - £23.90
BF x NCC	64	£19.25	£9 - £24.90

Cast and culled ewes from all hefts were sold at the following prices:-

TABLE D(2)

Breed	No.	Average	Range
BF	150	£16.44	£1.67 - £20.00*
GF	92	£15.10	£4.00 - £20.00*
NCC	32	£20.00*	£15.00 - £20.00*

\* All draft ewes sold to the H.Q. Research Account were sold off grass in early December.

CATTLE

The spring born calves were weaned on 24th September. Many of the calves, particularly those bought in suffered gut damage during the outbreak of scour in the cattle shed in February and March and were small when weaned. The calves were housed immediately and fed on silage, oats and urea. The weaning weights of the calves are shown in Table E.

TABLE E

Weaning weights of calves (kg)  
on 24th September 1979, numbers in brackets

Breeding	Heifers	Bullocks
Charolais x Blue Grey	198.8(5)	183.4(3)
Charolais x Hereford-Friesian	196.9(12)	220.9(8)
*Friesian	173.0(3)	170.0(30)
*Ayrshire	-	223.0(1)
*Hereford x Ayrshire	-	165.5(2)

\* Bought in calves

STORE CATTLE

As reported last year the entire calf crop was housed and wintered on silage/oats/urea and were sold during January, February and March as detailed in Table F. The prices obtained merely reflect the quality of the animals sold rather than market fluctuations.

TABLE FStore Cattle Sales

Store Cattle	Price Per Kilo L.W. (Pence)		
	Sale on 6.1.79	Sale on 17.2.79	Sale on 31.3.79
<u>Charolais Crosses</u>			
Bullocks	86	81	78
Heifers	80	83	76
<u>Aberdeen Angus Crosses</u>			
Bullocks	-	-	78
Heifers	-	-	76
<u>Friesian</u>			
Bullocks	-	81	78
Heifers	-	-	76
<u>Ayrshire</u>			
Bullocks	77	81	-

CROPS

Some 50 tonnes of hay and 400 tonnes of silage were made on the farm. A further 170 tonnes of hay and some 100 tonnes of straw were purchased locally.

MUIRBURN

Wet weather prevented muirburn this year.

Old Steading

The cattle courts conversion was completed with Lodon units but the provision of new entrances at the north and south ends has been abandoned meantime.

New Steading Building

The first stage of the building was completed and was in use in March. The second stage, the provision of vermin free storage for feedingstuffs will now be abandoned.

Water Services

A new 3" water main has now been laid to serve the farm cottages and is currently under test before connections are made.

Portakabin

The office block was moved from the site overlying the 15" water main to a site behind the Colt office/lab. building.

Afforestation

The areas replanted were 'beaten up' in the spring and three new areas amounting to 4 acres previously tree clad were planted up.

Boys House

The work on this house was finally completed in the Autumn of this year and the house is now in good order.

STAFF

Mrs. Kathleen Cargill was appointed to the new part-time post of Clerical Assistant/Typist and took up her appointment of 29th January, 1979. Mr. John Senior has been stationed at Hartwood since 28th May, 1979. The following students were employed during the summer months and were resident on the station: Lennie Bateman, Jane Boulton, Susan Oswald, Melanie Reader, David Kyle, John Hughes and Julian Acton.

STAFF TRAINING

(a) Fencing - Mr. Thomson, Mr. R. Smith and Mr. K. Adams attended a two day course organised by the A.T.B. on high tensile fencing.

(b) Mr. K. Adams attended a one day A.T.B. course on reversible plough techniques.

(c) Mr. K. Adams attended a one day course on cattle handling organised by the A.T.B.



B. LEPPINMOREWEATHER

The year opened with a heavy fall of snow and January was very cold with frequent snow falls and hard frost continuing through to mid-February. A gradual thaw was followed in March by a very wet spell with gale force winds at times and sleet and snow on high ground; the second half of the month was cold with occasional snow and sleet showers and apart from a warm dry spell at the beginning of lambing this pattern was maintained to mid-May. Summer passed all too quickly in the last week of May and the first fortnight of June. Thereafter apart from a warm sunny spell in the last week of August, cool wet conditions prevailed until the end of September. October, although mainly wet, was a better month with good grass growth. November and the first half of December saw almost continuous rainfall, although overall amounts were not much above average; the year ended well with a calm sunny period with hard frost at night.

Precipitation 1979

<u>Month</u>	<u>mm</u>	
January	173.0	
February	45.7	
March	205.7	
April	87.9	
May	63.2	
June	70.3	
July	144.3	
August	161.5	
September	165.1	
October	221.2	
November	306.3	
December	197.6	
	<hr/>	
	1841.9	(72.52 inches)
	<hr/>	
1978	1767.4	(69.58 inches)
	<hr/>	

SHEEP

Heavy snowfalls with total ground cover throughout January necessitated hand feeding of all hirsels. Midhill ewes were offered hay from 5th January at 1 lb. per head per day, supplemented by Rumovite blocks from 10th January. From 5th February partial snow clearance below 800 ft. allowed grazing in P1 and P2 with Rumovite block supplementation. 4.57 tonnes of hay were fed on the hill and 2.85 tonnes were fed to lean ewes drawn off through the winter. Concentrate feeding began on the hill on 10th March and the gimmers were fed separately in Hunt's bog from 13th March. Feeding began at 75 gas per day rising to 510 gas per day of a proprietary cob by lambing. Due to ewe condition and grass shortage concentrate feeding continued after lambing, particularly to ewes and gimmers bearing twins.

Hoggs were housed from 9th November, 1978 until 9th April, 1979, returning to the hill on 11th April.

Total Feed Consumption per head

	<u>Ewes and Gimmers</u>	<u>Hoggs</u>
	<u>kg</u>	<u>kg</u>
Hay	24.3	101.2
Ewe Cobs	26.1	-
Ewe Pencils	-	16.8
Rumevite	4.7	-
Cost/Head	£5.25	£3.29

Low End Mid-Pregnancy Nutrition Trial

Experimental feeding began on 29th December, 1978 on the hill but became impossible due to the heavy snowfalls on 1st and 2nd January. Feeding resumed in the paddocks adjacent to the Low-End handling pens and hay was offered in addition to concentrates throughout January, February and the first week of March. By the end of January conditions were so severe that all ewes were brought into the 'common' grazings and remained there until 7th March. Overall feed costs averaged £7 per ewe with an individual group range from £5.40 to £9 per ewe.

Hoggs were housed on 23rd November and returned to the South hill on 20th April at a feed cost of £8.16 per head.

Barnacarry

The ewe stock was gathered in from the hill to Lochan park on 10th January and Rumevite blocks offered. Partial snow clearance allowed a return to the hill on 16th January, but heavy snow on the 26th January necessitated a return to the hill parks and the offer of hay for a ten day period. Rumevite blocks were made available until 14th May.

Hoggs were housed from 7th November until 12th April when they returned to the hill.

Total Feed Consumption per Head

	<u>Ewes and Gimmers</u>	<u>Hoggs</u>
	<u>kg</u>	<u>kg</u>
Hay	6.90	105.0
Ewe Pencils	-	17.3
Rumevite	14.8	-
Cost/Head	£2.54	£8.58

Hay costed at £63.25 per tonne  
Concentrate costed at £116.63 per tonne

Lamb quality was poor at weaning as a consequence of the hard winter, late spring and wet, cold summer. An 'open', although wet autumn saw reasonable ewe recovery and the flock came to tupping in fair condition. The Midhill had more lean ewes than was desirable. The overall weaning percentage was 84. Figures for previous years were:-

<u>Year</u>	<u>£</u>
1978	86
1977	80
1976	88
1975	85
1974	87
1973	97
1972	97

### Lamb Sales

Seventy-nine wedder lambs were sold at Stirling on 5th September averaging £8.55 per head and 85 ewe lambs at £9.50 per head. Forty-one wedder lambs were sold at Paisley on 10th October averaging £8.40 and 49 ewe lambs made £7.20 per head; a further 31 ewe and wedder lambs averaged £2.60. Two hundred and fifty-eight top and second draw lambs were consigned to Bush for fattening on rape and grass. To date 166 have been sold fat averaging £19.95 per head with an average carcass weight of 13.8 kg; a further 40 were sold store at £15.50 per head. Forty-one Low End lambs which had been subject to TOH infusion were sent to Bush for slaughter. Twenty-five lambs were retained for the experimental wedder pool. The majority of the cast and draft ewes were initially consigned to experiment. Forty-four ewes were sold at Paisley on 10th October making £11 per head. Twenty-eight ewes were sold at Stirling on 19th December, 11 at £11.40 per head and 17 at £6.10 per head. Two cast gimmers made £17 each, 48 cast ewes have been retained for nutrition trials under hill conditions and a further 62 consigned to Glensnaugh.

### HILL CATTLE

Winter feeding of the in-bye herd began on 16th October, 1978 and continued until 14th May. Winter rations were based on silage and straw with a total of 2 cwts. hay and 2 cwts. concentrates per head at a cost of £74 per cow. The calves were creep fed from early November, weaned on 25th February and housed for the remainder of the winter on a ration of 20 lbs. silage, 2½ lbs. hay, 2½ lbs. concentrates at an overall cost of £41 per calf.

As a matter of policy no July/August calves were born in 1979 and both the in-bye and hill herds comprising 15 cows and heifers will in future calve in March/April.

Winter feeding of Barnacarry hill herd began on 28th November and finished on 14th May when the herd returned to the hill. Concentrates were offered on the hill at 3 kgs per head per day until 30th May. Initially hay and concentrates were fed in the Lochan park and the 70 acre forest area at Feorline, the herd coming down to the farm precincts at the beginning of February when silage and potatoes were introduced. Total feed costs were £89 per cow.

Of the 15 cows and heifers put to the bull, 1 cow and 2 heifers proved eild. Two heifers required assistance at calving and both calves, one of which weighed 41 kg were born dead.

Five bullock calves averaging 210 kg were sold at Stirling on 19th December at an average of £128.50 equivalent to £31 per live cwt. Five heifer calves averaging 197 kg realised £118 per head, equivalent to 60p per live kg or £30 per cwt.

Calf Weaning Weights (Spring Born)

	<u>1978</u>		<u>1979</u>	
	<u>No.</u>	<u>25th Oct.</u> <u>kg</u>	<u>No.</u>	<u>22nd Oct.</u> <u>kg</u>
Heifers	4	158.0	5	192.0
Bullocks	6	189.0	5	202.0

Thirty-one calves comprising the 1978 spring and autumn calf crop were consigned to Hartwood at the beginning of May. Their intended sale in September was postponed due to the presence of ring worm and treatment was successfully effected on their return to the newly acquired Leachd Grazings.

<u>Sale Date</u>	<u>Bullocks</u>	<u>Heifers</u>	<u>Price/Head</u>
19th October	8		£ 260
	4		212
	8		175
		3	142
10th November	1		238
	1		171
	1		137
		1	164
<hr/>			
Total	18	4	
Retained		9	

Three two year old Luing x heifers surplus to requirements made £268 at Dalnally on 20th October and 3 aged cows averaged £237. Eight aged cows were consigned to Dr. A. Russel for experimental work.

Luing Scottish Soldier purchased in October 1975, was sold through the F.M.C. in May at a net price of £485 and Benhar Journalist was bought in February at Oban for 600 guineas.

One 1½ year old heifer died through accident in December.

Cattle numbers at December 1979:-

	<u>Lephinmore</u>	<u>Barnacarry</u>
Cows	8	10
Calved Heifers	3	3
In-Calf Heifers	4	2
	<hr/>	<hr/>
	15	15

Stock Heifers Retained

8

ARABLE GROUND

Commencing on 18th June a first cut of silage was taken from Fields 2, 3 and 4 and a second cut in August from Fields 2 and 3. Approximately 145 tonnes of good quality silage was made. Fields 2 and 3 were sprayed with 2 pints/acre Asulox to control dockens.

The sheep and cattle litter from the wintering shed was spread on Fields 5 North and 7 at the end of May and ploughed in. In mid-July both fields received  $1\frac{1}{2}$  pints/acre Asulox and 5 pints/acre Porselect (24DB/MCPA). Due to the very wet conditions with strong growth, both fields were further treated with Gramoxone ten days before re-seeding on 3rd August with a perennial ryegrass/Timothy/Meadow Fescue/Clover mixture at 36 lbs/acre. 2 cwts/acre compound fertiliser was applied at seeding.

Mixture to sow 2.45 hectares:-

%	Perennial Ryegrass:
4.76	Certified Aberystwyth S.24
7.14	Certified Premo
5.95	Certified Cropper
3.57	Certified Barstella
8.33	Certified Barlenma
7.14	Certified Compas
13.10	Certified Barpastra Tetraploid
4.76	Certified Springfield
4.76	Certified Grasslands Manawa Hybrid Ryegrass
	Timothy
8.33	Certified Kampe II
4.17	Certified Erecta R. v. P.
2.38	Certified Teith
	Meadow Fescue
8.34	Certified Rossa
7.14	Certified Contessa
3.58	Certified Altaswede Late Flowering Red Clover
1.19	Certified Essex Broad Red Clover
0.60	Certified Kent Wild White Clover
4.76	Certified Grasslands Huia White Clover

Hill Ground and In-bye

The 20 acre re-seed on Low-End was given  $2\frac{1}{2}$  cwts/acre compound fertiliser (20-10-10) on 9th May and 2 cwts/acre applied to selected areas of the adjacent 17 acre re-seed on 17th May. Little response was obtained in the latter area due to the severe winter kill, and re-seeding with a Perennial ryegrass/clover mixture was carried out on 9th August after spraying with a 24DB/MCPA weedkiller. The area was harrowed prior to sowing but results are disappointing due to the very wet conditions over the summer and autumn and the persistence of the plant water blinks (*Montia fontana*) which has colonised much of the area. 2 cwts/acre compound (22-11-11) was applied at sowing.

Seeds Mixture (7 hectares)

<u>kgs</u>	
119	Certified Perennial Ryegrass Early Dutch Grenie
59.5	Certified Perennial Ryegrass Dutch Caprice
59.5	Certified Perennial Ryegrass Springfield Diploid
7.0	Certified Wild White Kent Clover
14.0	Certified White Huia Clover

249.0

Field 8 Mid subject in recent years to an increasing rush problem was 'topped' at the end of July and subsequently sprayed with Forselect (24DB/MCPA).

#### Leachd Grazings

Approximately 80 acres of rough grazings was rented from the Leachd village graziers on an extended lease. Fifty acres were fenced in August and the area will provide grazing for young stock and the pool of experimental wedders.

#### Heather Burning

Due to adverse weather conditions no burning was possible.

#### FENCING

The Forestry plantation/Barnacarry farm march was partially rewired by farm labour using Weldmesh provided by the Forestry Commission as was the march between the Feorline forestry plantation area and the Lochan park. A section of the Barnacarry/Midhill march fence on the Glendaruel water shed is again in need of repair and may require total replacement within the next five years.

#### BUILDINGS AND ROADS

No major works have been carried out during the year. Modifications have been made to the sheep shed to accommodate 30 breeding cows prior to and during calving.

C. SOURHOPEWEATHER

November and the first week of December 1978 were fairly dry with a very cold spell at the end of November. The rest of December was wet and cold with 3" rain over Christmas, this turning to snow with strong winds just before the new year. There was 14" of snow and drifts of up to 20' on the hills on New Year's Day. Further snowfall continued at intervals to the end of March with the ground being snow covered continuously until mid-April. Even as lambing commenced there was no respite from the cold weather and it was not until the later part of May that any growth of grass was to be seen. Thus after the worst winter for heavy and prolonged snowfall since 1963, the Borders experienced the worst spring in living memory with May proving one of the coldest of the present century. Thereafter the weather remained unsettled until the beginning of July when there was a fortnight of dry fairly warm weather, then a return to unsettled conditions. September and October were mainly cold and wet with the first snow falling earlier than usual at the end of the first week in November. It was followed by very heavy rain which gave the highest November rainfall since 1969. The weather then became unseasonably mild with strong south westerly winds for the remainder of the month.

Rainfall 1978-79

	<u>Month</u>	<u>Rainfall</u> (mm)
<u>1978</u>	November	52.5
	December	249.1
<u>1979</u>	January	59.3
	February	45.5
	March	173.2
	April	86.4
	May	102.4
	June	41.1
	July	60.1
	August	75.8
	September	33.5
	October	74.1
		<hr/> 1053.0 <hr/>

SHEEP

It will be recalled from the 1978 farm report that the sheep stock came to the tup in good body condition, with the weather remaining favourable for the first thirty days of tugging. There followed, however, a spell of continuous rain with cold east winds culminating at the turn of the year in severe blizzard conditions, resulting in a marked fall off in body condition. The Banks heft of sheep suffered nine deaths as a direct result of that snow, which in comparison with some neighbouring farmers, was a relatively small death toll.

Storm feeding of hay therefore was required before the turn of the year, with feedblocks being introduced at this time also. As further snowfall and drifting prevented access to hill grazings for the ewes, sugar beet pulp nuts were introduced early in the new year. A long, hard winter ensued, with further snowfalls right through till the beginning of April. This necessitated the feeding of sugar beet pulp cubes continuously with a switch over to higher protein cobs in early March, as the beet pulp supplied were exhausted. This heavy feeding contrasted unfavourably with that of the previous winter, when storm feeding of hay sufficed through until the end of January with feedblocks and concentrate feeding beginning early February.

Feed inputs were, as a result, substantially higher than those of 1977/78. A total of 77.1 kg dry matter (hay, sugar beet pulp nuts, concentrates and feed blocks combined) was fed on average to all outwintered ewes at a cost of £7.00 per head, compared with 54.1 kg at a cost of £4.34 in 1977/78. With the average feed costs for 1568 outwintered ewes (and gimmers) at £7.00, the range for individual hefts was from £7.77 to £5.91. The average feed cost of all outwintered ewe hoggs was £5.23 per head compared with £3.27 the previous year.

The Rigg and Gairs ewe stock was again inwintered, all ewe hoggs being housed on 8th January. Owing to the inclement weather at the time, the Rigg ewes were housed on 9th January but the Gairs ewes remained outside until the 19th January, this being the earliest opportunity to house them with their skins dry. A total of 123.5 kg dry matter on average was fed to the ewes at a cost of £8.51 per head, compared with 99.3 kg at a cost of £6.12 in 1977/78. For the inwintered ewe hoggs feed costs were £5.08 per head, compared with £3.79 for 1977/78.

Some feed data for both inwintered and outwintered sheep is shown in the following table, the feed items being costed as follows: (1977/78 prices in parenthesis) - Hay £43/tonne (£45/tonne); Sugar beet pulp cubes £85.76/tonne (£69.70/tonne); Concentrates\* £115.06/tonne (£105.20/tonne); Grass nuts £94.75/tonne (£109.30/tonne); Ewe and lamb food £131.74/tonne (£132/tonne); Rolled barley £103/tonne (£88.40/tonne); Stockade feed blocks £142.53/tonne (£124/tonne); Colborn feed blocks £163.67/tonne (£168/tonne). Total expenditure on feed for all outwintered sheep, including ewes, gimmers, ewe hoggs, wethers and tups, expressed per outwintered ewe to the tup was £9.80, compared with £6.35 for the previous year.

\*Concentrates fed to outwintered ewes in cob form, to inwintered ewes in pencil form.

#### Hogg Feed Data

	Hay (kg)	Ewe and Lamb Food (kg)	Feed Blocks (kg)	Grass Nuts (kg)	Sugar Beet Pulp Cubes (kg)	Concen- trates (kg)	Average Cost per Hogg
Outwintered Hoggs	22.3	0.9	0.5	17.7	17.8	7.4	£5.23 (£3.27)*
Inwintered Hoggs	42.3	1.2	-	2.0	18.6	11.9	£5.03 (£3.79)*

Total Weight DM Fed: Outwintered 66.6 kg  
Inwintered 76.0 kg

\* 1977-78 costs



Ewe Feed Data

	Period	Hay (kg)	Sugar Beet Pulp Cubes (kg)	Grass Nuts (kg)	Concentrates (kg)	Stockade Feed Blocks (kg)	Colborn Feed Blocks (kg)	Av. Cost per Ewe
Outwintered Ewes and Gimmers	Storm Feed (i.e. to 17/3 incl.)	15.4	21.2	-	5.5	1.2	3.1	£3.79 (£2.06)*
	Pre-lambing Feed (i.e. 18/3 to 17/4 incl.)	4.0	-	-	10.5	0.5	1.1	£1.65 (£1.46)*
	Post-Lambing Feed (i.e. from 18/4, incl. that fed to Twins)	2.6	-	-	10.3	0.7	1.0	£1.56 (£0.82)*
	Total	22.0	21.2	-	26.3	2.4	5.2	£7.00 (£4.34)*
Inwintered Ewes and Gimmers	Pre-lambing Feed (i.e. to 17/4 incl.)	60.6	21.7	-	13.1	-	-	£5.94 (£5.27)*
	Post-lambing Feed (i.e. from 18/4 incl. that fed to twins)	9.2	0.2	1.3	16.2	0.3	0.9	£2.57 (£0.85)*
	Total	69.8	21.9	1.3	29.3	0.3	0.9	£8.51 (£6.12)*

Total Weight DM Fed: Outwintered 77.1 kg  
Inwintered 123.5 kg

\* 1977-78 costs

Due to the prevailing storm conditions in January, the only ewes to be weighed during this month were those on the Near End Hairnøy Law and the inwintered ewes from Rigg and Gairs. These ewes had suffered a sharp reduction in bodyweight and body condition at this time and indications were that the entire ewe flock had suffered a similar set-back. Despite the continued bad weather and this initial check, however, the ewe flock responded to the winter feeding programme and entered the lambing fields in good condition. Adverse weather conditions continued right up to lambing time. This led to the Project II ewes being lambed in the inwintering sheds for the first time, an idea which had been considered in previous years.

Grass growth was very slow in the spring and excessive post lambing weight loss was averted by continued feeding of concentrates to twin nursing ewes until well into June. Thereafter, bodyweight recuperation of all nursing sheep was good with the exception of the Alderhope ewes which were slow to recover and lagged behind the previous year's recuperation right up to pre-tupping November 1979. Condition of the rest of the ewes at pre-tupping 1979 was as good or better than pre-tupping the previous year with the exception of the Near End Hairney Law ewes which appeared to receive a check during October.

Marking weights of lambs, on average, were not so good as in the previous year, this being largely due to the twin lamb weights which, with the exception of the Auchope and Park Law twin lambs, were well below the previous year's twin lamb weights. At weaning time, however, the average weaning weights of all lambs from each heft of sheep showed a rise on the previous year of between 0.4% and 4.7% with the exception of the Rigg and Alderhope hefts which showed a fall of 1.1% and 2.8% respectively.

The weaning percentages for South Country Cheviot, North Country Cheviot (including NCC x SCC) and Blackface ewes were 103.2, 113.7 and 118.2 respectively, to give an overall weaning percentage of 114.6 compared with 104.5 last year. It is of interest to note that, notwithstanding the worst winter for 15 years, and a non-existent spring, this weaning percentage of 114.6 is the highest ever recorded for Sourhope in the 25 years the station has been part of the Hill Farming Research Organisation.

Both ewe and hogg fleece weights were marginally lighter than for the previous year resulting in the total weight of wool graded from Sourhope showing a fall of 4.0% to 5,281 kg, the average price realised being £1.05 per kg.

All ewes were worm drenched in autumn, and thereafter all outwintered ewes were re-dosed prior to lambing. All twin nursing ewes and lambs were dosed mid-May with twin lambs alone being dosed again in mid-June and mid-July. With the exception of the Near End Hairney Law heft, no single nursing ewes were dosed at marking time. All single lambs were worm drenched in the period late June - early July with Near End Hairney Law single lambs receiving the earlier worm drench in May. Inwintered ewes were given a worm drench at housing.

The hogg age and 3-shear ewes continued to receive a cobalt bullet. In addition all twin lambs received a cobalt chloride drench in July except in the case of the Alderhope twins where it was considered that this may affect the results of the copper deficiency trials.

Whereas all lambs had been vaccinated with 5 ml of a multi vaccine against the clostridial diseases at the milk clip in 1978, with the 2 ml booster 6 weeks later, this anti-clostridial vaccination programme was delayed until weaning this year and the initial dose reduced to 2 ml except in the case of ewe lambs to be retained as stock replacements which received the full 5 ml. All lambs were therefore protected against the clostridial diseases.

The problem of induced copper deficiency which affects those Blackface lambs grazing the Alderhope reseeds, and which has been referred to in previous farm reports, has been the subject of further intensive investigation in 1979, the results of these studies being reported elsewhere (Annual Report).

### Disposal of Lambs

The bulk of the lamb crop was sold through the store market with Cheviot lambs averaging £0.718 per kg liveweight (top price £0.796) and Blackface lambs averaging £0.533 per kg liveweight (top price £0.594). A total of 645 North Country Cheviot lambs (and NCC x SCC) averaged £20.49 per head (£0.732 per kg liveweight) compared with £20.95 the previous year, 192 South Country Cheviot lambs averaged £18.66 per head (£0.671 per kg liveweight) compared with £19.12 the previous year, and 299 Blackface lambs averaged £17.08 per head (£0.533 per kg liveweight) compared with £18.00 in 1978. In addition 101 Cheviot x Blackface lambs averaged £17.17 per head (£0.629 per kg liveweight) compared with £18.92 last year.

3.2 hectares of rape were grown at Sourhope this year which enabled the fattening of a proportion of the Blackface lambs. In addition to this, the decision was made to utilise the hogg inwintering facilities to fatten a further proportion of the Blackface lambs, a decision brought about by the depressed state of the store market with respect to Blackface lambs. To date, therefore, 293 Blackface lambs have been sold fat at an average price of £21.48 per head (£1.40 per kg dressed carcass weight). 249 Blackface lambs remain on fattening rations at time of writing - indoor fattening ration consists of 2 parts whole barley, 2 parts lamb pencils and 1 part sugar beet pulp cubes with a little hay fed as roughage (115 gms/hd/day).

The overall average for 1530 lambs sold to date is £19.57 which compares with an overall sale average of £19.29 in 1978.

Details of the disposal of the 1979 lamb crop are as follows:

Ewe lambs (home-bred) retained as stock replacements	554
Wether lambs retained as wether stock replacements	33
Tup lambs for breeding	3
Lambs sold store	1237
Lambs sold fat	293
Lambs as yet unsold	288
	<hr/>
Total	2408

Due to the requirements of certain research projects within the Organisation for draft ewes, the majority of the North Country Cheviot (including NCC x SCC) and Blackface draft ewes were not sold through the market but retained. Draft ewes surplus to these requirements and all SCC draft ewes were, therefore, sold fat or for further feeding. Comparisons with the previous year's prices are thereby irrelevant except in the case of SCC draft ewes sold fat which averaged out at £14.13 for 65 compared with an average of £16.51 last year. The rest of the draft ewes averaged £10.71 for 95 ewes sold. Twenty-nine draft ewes remain to be sold.

### Death Rate

The overall death rate of the sheep stock in the twelve months since November 1978 was 4.1% with the death rate of ewes, gimmers and hoggs being 4.8%, 3.4% and 2.4% respectively. The overall death rate for 1978 was 4.9%.

### Sheep Stock Autumn 1979

Despite a wet autumn, all breeding sheep have come to the tup in good condition with the exception of the Near End Hairney Law ewes which got a slight check in October. These have access to large areas of reseeded ground during tugging, however, and should pick up again. The weather during the tugging period has remained open to date.

CATTLE

Fifty-one suckler cows were taken through the winter, with, in addition, three cast cows which were sold in early February. Straw, hay, Promax liquid feed and concentrate cobs were introduced in mid December and silage in mid January. On average each cow received 4.74 tonnes silage, 388 kg hay, 531 kg feeding straw, 28.9 litres of Promax 36, 180 kg of magnesium fortified hill cow cobs and 222 kg of potatoes. The cost per cow of all purchased feed, i.e. excluding silage, was £60.88 compared with £50.70 for 1978.

Semen quality tests run on the new bull which was purchased in February 1978 and which were repeated in 1979 were found to be unsatisfactory as were the continued tests run on the old Sourhope bull. A young Hereford bull of known stock-getting qualities was purchased locally, therefore, and used to cover all the cows after the original two bulls had run with the cows for the first mating cycle. A decision has yet to be made on the retention or otherwise of the two original bulls.

It will be remembered from the 1978 report that a borrowed bull of proven breeding record was used to cover all cows in 1978. Of the 51 cows put to the bull in 1978, five cows failed to calve. This level of fertility would still appear to be unacceptable despite the use of the third bull.

One cow died about six weeks after giving birth to twins, and two single calves died in the spring. Forty-five calves were, therefore, reared from the 51 cows put to the bull.

The suckler herd was managed in the usual way, i.e. as "grazing tools" on the Development Project areas. Creep feed was offered to all calves over the last 60 days to weaning. Some calf performance data for 1979 is shown in the following table.

Sex	Nos.	Average Birth Weight (kg)	Average Weaning Weight (kg)	Average Liveweight Gain Birth - Weaning (kg)	Average Daily Liveweight Gain (kg)
Bullock	24	40.9	283.7	242.5	1.02
Heifer	23	38.7	273.1	234.5	1.00
All calves	47	39.8	278.5	238.6	1.01

Forty Hereford "x" calves were sold at the October sales to average £216.85, a rise of £24.08 on the previous year. Price and weight data is shown in the following table.

	Number sold		Weight (kg)		Price/head		Price p/kg	
	1979	1978	1979	1978	1979	1978	1979	1978
Hereford "x" bullocks	20	26	276	277	£ 237.90	£ 220.92	86.2	79.6
Hereford "x" heifers	20	23	264	255	195.80	160.95	74.2	63.0
Overall	40	49	277	267	216.85	192.77	80.3	72.2

N.B. Hawick Auction Mart sales weights used. Three bullock and two heifer Hereford "x" calves are being overwintered.

#### MUIRBURN

No burning was possible in the spring of 1979.

#### CROPPING

A decision was taken in late May to conserve only the minimum quantity of grass as hay or silage, for two reasons. With more than 600 ewes nursing twins, the great demands on the inbye grazing for these ewes, coincided with very little early grass because of the late spring, thus no early grass could be rested. In addition, as a result of the very hard winter the 5.7 hectares of grass comprising the Park Law Meadow and Banks fields had suffered extensive winter kill to the point where both fields had to be reseeded. This decision to utilise the bulk of the inbye grass such as was available for grazing, and not for conservation as silage for the suckler herd fitted in well with the needs of the newly acquired Hartwood Farm at Shotts, Lanarkshire, where there was an abundance of grass available for conservation with a shortage of stock to utilise the conserved product, in the coming winter. The Sourhope suckler herd would be away wintered at Hartwood.

In fact only 27 cows have been sent for wintering to Hartwood, 21 cows involved in a vaccination programme being wintered at the Moredun Institute.

Only surplus grass was conserved, a total of 63 tonnes of silage and 6 tonnes of hay being made. The Park Law Meadow was ploughed out and directly reseeded in July, the Banks field being sown to rape. In addition 1.4 ha of ground on the wether paddock (Far-end Park Law) which had been limed and given a dressing of phosphate in 1978, was sown out to rape.

In early September 8.1 ha of Auchope Big Park was top dressed with 2.5 tonnes/ha of Ground Magnesium Limestone, and given 625 kg of Phossac/ha.

#### FENCING

Considerable repairs have been carried out to fencing, much of it being necessitated as the result of damage caused by drifted snow. Damage was particularly severe to parts of the High Tension fencing surrounding the enclosures E1 and E2 in Project II, on the Gairs hill, and to the traditional fence dividing the Rigg and Gairs hefts.

BRACKEN SPRAYING

Reference is made to bracken spraying in the section headed Development work.

BUILDINGS

A covered silage pit 60' x 40' has been erected, it being intended that the building will also provide much needed straw storage facilities above the silage. The new silage pit complies fully with the requirements of the local River Board who have been showing increasing concern about the possibility of silage effluent from the open silage pit in use up until now, gaining access to the river.

A shepherd's accommodation unit, adjacent to the hostel has been completed.

FARM ROAD

A major earth slip occurred in late March which necessitated re-alignment of the farm road over a length of some 70 metres; elsewhere fairly considerable surface damage as a result of the winter snowfall required attention. Repairs to the farm road have now been satisfactorily completed.

DEVELOPMENT WORK

Progress has been maintained in the Development Projects.

Project I

An additional 1.6 ha of hill ground within Paddock I was reseeded in early June, using the paraquat-rotavation technique, and a further area of the same size was oversown with  $2\frac{1}{4}$  kg/ha of clover seed.

The 4.5 ha of Paddock I which had been reseeded the previous year was successfully sprayed with MCPB/MCPA to control a bad infestation of boar thistles, and all ground reseeded prior to 1979 received a top dressing of 250 kg/ha of compound fertiliser (20:10:10) in early May.

In August 1979, 13.4 ha of ground within Paddock 2 was given 6.34 tonnes of Ground Magnesium Limestone/ha and 943 kg of Phossac (20%  $P_2O_5$ )/ha, the intention being to reseed the more accessible parts of this area over the next two years. To this end 3.4 ha of this ground, selected for reseeded in the spring of 1980, and lying to the north end of Paddock 2 was resprayed with Asulox to kill off a regrowth of bracken which was becoming increasingly evident after having been effectively suppressed as the result of an earlier spraying in autumn 1974.

The weight of lamb weaned per ewe mated at 28.9 kg in 1979, comparing favourably as it does with the figure of 26.5 kg per ewe mated in 1978, has only been attained once previously and that in the "drought" year of 1976. It is interesting to compare the performance in the two years. Whilst weaning percentage in 1979 at 113.3 was almost 5.0% higher than the previous highest weaning percentage of 108.5 recorded in 1976, the average weaning weight of all lambs in the earlier year was 1.1 kg heavier than in 1979. When one considers the almost complete absence of any spring growth this year with lambs getting off to a slow start, and the disappointing summer weather which followed, the failure of lambs to more fully express their growth potential in 1979 is not surprising.

## Project II

The breed change over from a South Country Cheviot to a Blackface ewe stock has now been completed.

Thirty of the draft age of South Country Cheviot ewes from the Gairs have been retained on the station, and in November 79 put to a North Country Cheviot hill tup, to produce NCC x SCC tup lambs for use in Project I.

The policy of permitting no cattle grazing on Rigg and Gairs, first initiated in 1978, has been continued in 1979; in this respect it is of interest to note that tussocks of *Deschampsia Caespitosa* have become much more in evidence on the reseeded Gairs paddock E2 over the past two years since cattle grazing has been discontinued. This grass is readily grazed and controlled by cattle, but this is not the case where sheep grazing alone is practised.

## Project III

The copper studies associated with the reseeds of Project III have continued and are reported elsewhere.

This report cannot be concluded without paying tribute to the tremendous efforts made by all members of the Sourhope staff in coping with the exceptionally severe weather experienced in the past winter and spring, efforts which ultimately resulted in a record lamb crop being produced.

D. HOUSE O' MUIRWEATHER

The early winter of 1978-79 followed the pattern of the preceding ones and with the exception of February, was wet and cold. The late winter was bad with extended periods of snow cover lasting well into spring. June and July were reasonably good months with less rain than in previous years. From then on the weather deteriorated and it has been one of the wettest autumns for many years.

RAINFALL 1978-79

	<u>Month</u>	<u>Rainfall (mm)</u>
1978	December	97.7
1979	January	67.5
	February	19.0
	March	147.0
	April	70.9
	May	57.3
	June	12.4
	July	23.1
	August	76.5
	September	44.4
	October	110.3
	November	133.9
	<u>Total</u>	<u>859.6 mm (33.86 ins)</u>

The ten year average is 805 mm.

SHEEP

In all 481 ewes went to the ram in 1978. All ewes mated were in good condition despite wet weather during the pre-mating period. Throughout the mating period the weather continued very wet. Regardless of this mating went well and this was borne out by the lambing figures. Six hundred and fifty-four lambs marked against 561 in the previous year. As in the present year the spring of 1979 (February excepted) was wet, cold, snowy and long lasting. Feeding costs of all stock were high. Concentrate consumed by the ewes rose by 3 kg/head and hay by about the same.

Concentrate: 36 kg/head at £130/tonne £4.68)  
 Hay : 42 kg/head at £60 /tonne £2.52) £7.20

The ewe hogs were wintered away until January and then brought home to Glencorse to be trained to eat concentrate. The cost of concentrate and hay was approximately £3.00 per head.

The wool clip was down some 5% on the previous year due to a greater number of broken fleeces.

Disposal of lambs and cast ewes

A total of 672 lambs were marked (654 ex. regular stock and 18 ex. ewes bought from research account) and of these 662 were weaned. No problems were experienced with "Swayback" in 1979.

The lambs sold to date (12/12/79) are as follows:-



Sold store	155
Sold fat	206
Sold M.A.F.F. (Lasswade)	18
Sold Rowett Res. Inst. Aberdeen	64
Retained for stock replacements	133
On hand 20/12/79	78
Deaths since weaning	8
	<hr/>
	662
	<hr/>

Cwing to the extremely poor cast ewe trade all ewes were fattened and sold for slaughter, except for 9 younger ewes required by the research programme. One hundred and eight ewes were cast or culled.

Prices obtained for store lambs

BF wedder lambs	£20.40
BF ewe lambs top	£24.50
bottom	£20.00
average	£22.62
Down cross lambs	£24.30

Price for fat lambs

The average price for lambs sold fat and already paid for was £21.38.

Prices attained for cast ewes

Breeding ewes to research account	-	£18.00
Cast ewes (including 35 over age)	-	£11.50

CATTLE

The calves born in 1978 were weaned at the end of October. The strongest calves, 7 in number were sold in December and the balance over-wintered and all but 2 sold as grass stirks.

Prices attained were as follows:-

Date of Sale	Number	Sex	Average Price Per Head
12/12/79	3	F	£240.00
12/12/79	4	M	£264.50
4/ 4/79	3	F	£258.00
4/ 4/79	2	M	£306.00
21/ 4/79	3	F	£251.00
21/ 4/79	3	M	£300.00
12/ 5/79	2	F	£251.00
12/ 5/79	2	M	£300.00
2/ 6/79	6	F	£260.30

This gives an average price of £267.17 for 28 sold compared with £204.60 for 25 sold in 1978 - an increase of £62.50 per head.

One small heifer stirk was summered and is still on hand. One very small bullock stirk was also retained but died in August. This animal was never 100% fit and was generally thriftless and about half the size and weight it should have been for its age. P.M. revealed no specific cause of death.

Fifteen cows were sent to Glensaugh at the beginning of 1979 to help out with numbers in the spring calving herd there.

Eighteen cows were retained and because of a requirement for a Charolais bull at Hartwood, were moved there, together with the bull, to be mated and returned to House o' Muir after the mating period was over. One of these cows had lost a calf with "Hairball" and the dam developed mastitis and was sold fat.

The 17 remaining cows were pregnancy diagnosed in October and found to be in calf.

During 1979 six in calf Fries./Here. heifers were purchased from the East of Scotland College of Agriculture. These were back-end calvers and only 5 proved to be in calf. The eild one has been taken back by E.S.C.A. and will be replaced. The remaining 5 calved satisfactorily to the A.A. bull and are now running with the Charolais bull.

In addition to the above, 6 Blue-Grey bulling heifers were purchased and they are now running with a hired A.A. bull.

#### BUILDINGS

No major building work was carried out in 1979. Expenditure of buildings being confined to general maintenance.

#### FENCING

1000 yards of new fencing have been erected to enclose approximately 20 acres of old inbye grassland opposite the old sheep pens at Turnhouse. A further 400 yards of new fencing have been erected at Glencorse mains to make the field stockproof.

#### MUIRBURN

No burning was carried out in 1979.

#### SHELTER BELTS

No further planting has been carried out by E.C.R.E. this year.

#### LAND IMPROVEMENT

By erecting the 1000 yard of new fencing mentioned previously, an area of some 20 acres has been enclosed for use in controlling the grazing, mating, and lambing. This area was open to the hill until this work was carried out. No cultivations were undertaken on this area but surface treatment in the form of  $2\frac{1}{2}$  tonnes lime/acre, 6 cwt. 29% phosphate/acre,  $2\frac{1}{2}$  cwt., 29-5.5 compound/acre and an overall spray to kill thistles was carried out.

#### WATER SUPPLY

A proper piped water supply as opposed to a rather dirty open ditch has been provided at Glencorse mains.

#### CROPPING

As is normal no cultivations were carried out on the farm but an area of 21 acres were shut off from stock at the end of April 1979 and cut for hay at the end of June and beginning of July.

All work was done on contract including cutting, turning, windrowing, baling, building bales in the field, and then driving the bales to House o' Muir steading. Some 44 tonne of hay were secured in good order at a total cost of £564.00, a cost per tonne of £12.80.

On present hay costs of at least £65.00 per tonne this has resulted in a saving of some £2,300 less £350 for fertiliser.

#### ADDITIONAL LAND

No additional land was allocated to HFRO by the estate in 1979.

E. RED DEER FARMWEATHER

The sunny autumn of 1978 was followed by a long cold winter. The deer farm had total snow cover, except for a slight thaw in March, from early January until the beginning of April, at which time some fences were still out of sight under drifts. The summer was generally cold and wet, with day after day of mist in August and September and continuing during the rut in October.

WINTERING

The condition of hinds varied considerably between individuals at the beginning of the 1978 rut and 41 of the poorest were put on the reseeds with stags until November where they noticeably improved. Hay feeding started for all outwintered stock on January 1st and continued until April 16th. Over this period 33 tons of hay were fed, an average of 1.5 kg/head/day. This was four times as much hay fed the previous winter and was reflected in the good condition and weight of hinds in March compared with the year before. Concentrate feed at 0.5 kg/head/day started as usual on May 1st and continued until July 7th for late-calving hinds on Greenshields. Hinds put on the reseeds to calve at the beginning of June were given a reduced ration of 25 kg/head/day.

CALVING

Calving started early, the first calf being born on 26th May but spread on into July with the last calf being born in August. 115 hinds were calved on the reseeds, the majority of the remainder calving in Greenshields.

Of the 176 hinds to the stag, 8 were yeld. Average birth weights were up .07 kg on the previous year, calves were strong and healthy. Few undersize calves with associated deaths were recorded. We attribute this to the improved winter nutrition of the hinds.

Calf Growth

As mentioned above, birth weights were up on last year, males averaging 7.3 kg and females 7.1 kg. Weaning weights reflected the advantage of a good start in life - see Table 4.

Calf Mortality

Mortalities were down on the previous year with an overall rate of 9% prior to weaning. There were fewer perinatal losses. Percentage losses after the first few days in life were similar to that in previous years.

Calves were again housed at weaning but by providing them with more space, fighting was diminished and no losses directly attributable to injuries occurred. However, 3 calves died of clostridial disease with black leg type lesions probably triggered by bruising.

Disposal of Calves

16 females to R.R.I.  
 10 A/R females retained for stock replacement  
 4 " stags " "  
 53 females on farm (naturally reared calves)  
 51 stags for inwintering experiment (naturally reared calves)  
 11 calves on hill (still to be weaned)

1978 Calves Retained on Farm

Of 21 hind calves retained, 3 were sold in the spring, the remaining 18 summered on reseeded with stag calves and were put to the stag this autumn. They are a very varied group with weights ranging from 45 kg to 68 kg. Overall growth has been lower than hoped, and only a small proportion can be expected to calve next year.

Inwintering Experiment

Fifty stag calves were penned in 4 groups on different concentrate levels (250, 500, 750, 1000 gr.), plus ad lib hay. On turn out at the end of April there was a 12 kg spread between the highest and lowest group. Calves spent the summer together on the reseeded and, like the hind calves, checked in late July and August. After being treated for worms slight improvement was noticed. Blood samples revealed very low cobalt levels: this will be investigated next year. The majority of these calves were slaughtered in early October. Sixteen are being retained for study of second year growth rates. Results have yet to be analysed but compensatory growth has occurred, the low group being only 6 kg lighter than the high in September. This year's stag calf crop is being kept for a similar inwintering experiment.

Venison Sales

Price offered for a carcass in the skin was 74 p./lb. Nine young stags and 6 castrates were slaughtered in early September and 29 yearling stags from the inwintering experiment were slaughtered in October.

Calf Rearing

Calves were artificially reared at Glensauigh for Deer Farm stock replacements, for the R.R.I., H.I.D.B. at Rahoy and For Fasque Estates in all some 80 calves. There were 9 deaths the majority attributable to digestive upsets, post mortems revealed milk in the rumen and solids in the abomasum suggesting dys-function of the oesophageal groove.

Milk Samples

Dr. MacDougall again took samples of milk from weaned hinds.

Reseeded

The 2.5 hectares of Mid Shank reseeded last year has established well and has been very productive. Some winter kill occurred on East Shank where snow was blown off. The wet summer suited the hill pastures and the good growth of the vegetation was reflected in the improved body weights of the hinds and calves in September.

### Fences

Considerable repairs had to be made after last winter's snow to the reseed perimeter fence and Nether Goyle perimeter fence, parts of which were completely buried by snowdrifts. One new fence has been erected, dividing Greenshields from Slochd. The old fence in the burn of Greenshields was being washed out constantly and is now dismantled.

Only Greenshields and the reseeds are anything like stock proof. The Upper farm is now managed as one unit, Goyle and Birnie run together, and the new area, Gaerlie, is moderately proof against fence crawling. Within these three areas total control is impossible: 15% of the hinds are sufficiently skilled crawlers to move freely between them. Wires on the old perimeter fence around Birnie and part of Goyle are badly rusted. Few escapes occur only because the hinds are hefted to the farm. On several occasions during calving hinds appeared walking the fences on the outside trying to get in, having previously escaped into the forest to calve.

### Electric Fencing

The four wire - all live - fence erected on the upper farm has been 100% successful. The fence was erected to separate those animals which had been in contact with the animal which died from malignant catarrhal fever from the other stock on the farm. The wires are spaced from ground level at 320 mm, 320 mm, 350 mm and 380 mm. A corridor some 5 metres wide was established and was effective throughout the summer months. The fence was powered by a Gallagher battery unit.

### Slaughter Facility

The new building was used for the first time for the annual September slaughter. It worked well, but will require one or two modifications. Another pulley running on a separate track alongside the present one would allow a much better flow of animals through the system. The hooks for hanging the carcasses will require to be modified in order to work efficiently and safely.

### Staff

Miss Lesley Stokes, B.A. resigned on 30th November. She will continue to work with red deer on New Zealand deer farms.

Miss Lesley Cranna, B.Sc., M.Sc. was appointed to fill the vacancy as Recorder of the Red Deer Project, and took up her appointment on the 29th October.

### Visitors

As usual a large number of people visited the project, rather less than previous years and composed mainly of professionals and students and people about to start a deer farming venture.

II. SUMMARY OF FLOCK RECORDS 1978/79A. GLENSAUGHTABLE 1Reconciliation of Ewe Numbers 1978/79

Flock	Breed	Ewes + Gimmers Nov. 1978	Cast + Cull	Deaths		Gimmers Brought in 1979	Ewes + Gimmers Nov. 1979	Hoggs Born 1979
				No.	%			
Cairn Birmie	BF	187	55	10	5.35	56	178	72
	BF	209	58	11	5.26	58	198	68
	Total	396	113	21	5.30	114	376	140
East Finella	NCC	161	32	5	3.10	55	179	35
	EF x NCC	-	-	-	-	-	-	35
	Total	161	32	5	3.10	55	179	70
Mid Finella	BF	80	19	7	8.75	28	82	26 <sup>+</sup>
	TEX x BF	32	8	3	9.40	11	32	10
	BL x BF	32	4	0	0	11	39	8
	Total	144	31	10	6.94	50	153	44
West Finella	BF	7	18	5	6.67	23	7	27 <sup>+</sup>
	TEX x BF	35	7	3	8.57	10	35	11
	BL x BF	32	3	2	6.25	3	35	9
	Total	138	28	10	7.25	41	141	47
Greyface Systems "H. Greyfaces"	GF	224	68	18	8.03	85	225	
	GF	*170	75	13	7.65		82	
New Systems Flock	Total						305	
Grand Total		1063 *1233	347	77	6.24	345	1154	301

\* Brought in Feb. 1979

+ Includes 20 Purchased

TABLE 2

## Weaning Percentages and Lamb Liveweights

Flock	Ewe Breed	Ewes to Tup	Lambs Weaned			Weaning Wts.	
			1979		1978 %	Singles	Twins
			No.	%			
Cairn	BF	187	190	101.6	86.4	30.02	26.69
Birnie	BF	209	247	118.2	88.7	27.28	24.02
East Finella	NCC	161	177	109.9	109.9	28.20	24.48
Mid Finella	BF	80	88	110.0	130.0	30.02	26.15
	Texel x BF	32	43	134.4	148.5	32.22	28.22
	BL x BF	32	50	156.2	141.2	33.25	28.49
	Total	144	181	125.7	137.2	31.36	27.30
West Finella	BF	71	78	109.8	127.8	29.85	25.31
	Texel x BF	35	46	131.4	140.5	31.65	26.50
	BL x BF	31	57	183.8	131.5	30.36	25.59
	Total	137	181	132.1	132.0	30.43	25.71
Greyfaces	BL x BF	223	309	138.56	157.6	30.25	29.95
H. Greyfaces	BL x BF	*170	200	117.6	-	32.87	31.26

\* 170 Bought in February 1979

TABLE 3

## Liveweight (kg) of Sheep - November 1978 and 1979

Flock	Breed	Ewes		Gimmers		Hoggs	
		1978	1979	1978	1979	1978	1979
Cairn	BF	55.5	58.45	49.9	52.95	32.2	34.38
Birnie	BF	58.8	58.22	52.7	55.33	35.4	35.60
East Finella	NCC	70.5	65.09	61.3	58.17	36.8	36.01
	BF x NCC	-	-	-	-	-	35.18
Mid Finella	BF	66.6	71.66	57.5	61.62	35.0	31.92
	Texel x BF	67.3	70.31	56.3	62.36	33.9	35.35
	BL x BF	70.2	73.57	63.0	66.54	35.5	36.81
West Finella	BF	59.0	63.07	53.1	54.35	32.5	28.81
	Texel x BF	64.2	66.40	52.2	54.80	31.7	33.09
	BL x BF	65.4	69.85	58.0	54.69	30.7	32.83
Greyfaces	BL x BF	68.5	65.13	66.3	77.86	-	-



B. LEPHIMORETABLE 1Reconciliation of Ewe Numbers 1978-79

Hirsel	Ewes and Gimmers Nov.1978	Cast	Deaths*	Gimmers brought in	Hoggs born 1979	Ewes and Gimmers Nov.1979
Barnacarry/ Feorline	259	46	19 (10)	79	61	273
Mid-Hill	444	88	33 (4)	124	125	447
Low-End	362	64	28 (8)	90	94	360

\* Includes Black Loss (in brackets)

TABLE 2Weaning Percentage 1979

Hirsel	Ewes and Gimmers to Tup	Lambs Weaned %			Weaning Weights	
		Total	1979	1978	Singles kg	Twins kg
Barnacarry/Feorline	259	184	71.0	82.8	24.6	25.5
Mid-Hill	444	407	91.7	92.1	23.3	22.3
Low-End	362	306	84.5	80.2	24.6	21.7

TABLE 3Weights of Ewes, Gimmers, Hoggs (kg) 1978-79

Hirsel	Ewes		Gimmers		Hoggs	
	Nov.1978	Nov.1979	Nov.1978	Nov.1979	Nov.1978	Nov.1979
Barnacarry/Feorline	47.6	50.1	42.3	45.1	28.5	27.8
Mid-Hill	51.5	49.5	45.8	43.4	26.5	24.3
Low-End	51.3	49.0	44.1	43.1	26.9	26.3

## C. SOURHOPE

TABLE 1Reconciliation of Ewe Numbers 1978/79

Heft	Ewes and Gimmers Nov.1978	Draft & Cast Ewes	Deaths	Gimmers Brought in	Hoggs Nov.1979	Ewes and Gimmers Nov.1979
<u>S.C.C.</u>						
Fasset	194	42	16	49	57	185
Rigg	40	38	2	-	-	-
Gairs	45	44	1	-	-	-
Total S.C.C.	279	124	19	49	57	185
<u>S.C.C. x N.C.C.</u> N.E.H.L./Auchope	622*	111	37	157	179	631
<u>N.C.C.</u> Park Law	152	31	3	30	38	148
<u>Blackface</u>						
Rigg	231	20	6	59	65	264
Gairs	230	10	8	59	65	271
Alderhope	266	41	14	58	65	269
Banks	337	57	20	80	85	340
Total B.F.	1064	128	48	256	280	1144
FLOCK TOTAL	2117	394	107	492	554	2108

\* Three extra N.E.H.L. owes appeared in January so this figure does not agree with last year's Farm Report

TABLE 2

Weaning Percentages and Lamb Liveweights 1978/79

Heft	Ewes to Tup	Lambs Weaned			Weaning Weights	
		Total No.	Percentage		Singles (kg)	Twins (kg)
			1978	1979		
Rigg S.C.C.	40	49	106.5	122.5	22.3	22.5
Gairs S.C.C.	45	51	115.3	113.3	27.6	22.4
Fasset S.C.C.	194	188	96.1	96.9	-	-
Total S.C.C.	279	288	103.7	103.2	25.1	22.5
N.E.H.L./Auchope SCC x NCC	622	705	105.1	113.3	26.3	24.5
Park Law N.C.C.	152	175	106.6	115.1	28.9	23.4
Total N.C.C.(+ SCC x NCC)	774	880	105.4	113.7	26.8	24.3
Alderhope B.F.	266	306	97.3	115.0	27.7	26.4
Banks B.F.	337	374	105.0	110.9	-	-
Rigg B.F.	231	279	105.2	120.8	27.4	25.9
Gairs B.F.	230	300	110.1	130.4	31.5	27.5
Total B.F.	1064	1259	104.1	118.2	28.6	26.7
FARM TOTAL	2117	2427	104.5	114.6		

TABLE 3

Weights of Ewes, Gimmers and Hogs

HEFT	EWES		GIMMERS		HOGGS	
	November 1978	November 1979	November 1978	November 1979	November 1978	April 1979
Rigg B.F.	56.2	58.0	51.1	53.0	34.5	37.5
Gairs B.F.	56.6	59.4	50.5	53.2	34.5	38.0
Alderhope B.F.	59.2	57.6	55.1	54.1	36.3	36.3
N.E.H.L./Auchope S.C.C. x N.C.C.	61.0	59.8	52.8	52.9	34.7	34.5
Park Law N.C.C.	60.3	59.6	53.3	54.7	33.5	36.2

TABLE 4

Wether Stock November 1979

Year of Birth	1974	1975	1976	1977	1978	1979
S.C.C.	24	23	27	26	31	33

D. HOUSE O' MUIRTABLE 1Reconciliation of Ewe Numbers 1978-79

Ewes and Gimmers November 1978	Cast Ewes Culled	Deaths	Ewes and Gimmers Brought In	Ewes and Gimmers November 1979
481	108	19*	146	500

\*Thirty-five over age ewes were kept for breeding 1978-79 to help numbers out of the 19 deaths above 8 were in this group (Pneumonia and Jaagsiekte).

TABLE 2Weaning Percentages

Group	Ewes to Ram November 1978	Lambs Weaned			
		1979		1978	
		Number	Percentage	Number	Percentage
Normal Hill Stock	376	483	128.5	352	144.3
Lactation Group BF and BF x EF	80	133	166.3	106	143.2
Long term copper study	25	28	112.0	15	57.7
Late Lambing Group	NIL	NIL	NIL	78	65.0
All Groups	481	644	133.9	551	118.8

E. RED DEER FARMSUMMARY OF HERD RECORDSTABLE 1Reconciliation of Stock Numbers : 1978-79

STOCK	No. at 6.10.78	ADDITIONS				REDUCTIONS			No. at 1.11.79
		Age Transfer		Calves Born	Purchases	Deaths	Sales	Age Transfer	
		Stags	Hinds						
Mature Stags	13	-	-	-	-	-	1	-	12
Mature Hinds	181	-	-	-	-	4(2)	-	-	177
Prickets	0	18	-	-	-	-	9	-	9
Jinnocks	0	-	1	-	-	-	-	-	1
Young Stags	20(1)	52	-	-	-	1	35	18	18
Young Hinds	3	-	18	-	-	-	2	1	18
Stag Calves	53	-	-	76	-	15	1	52	61*
Hind Calves	26	-	-	92	-	8	24	18	68*
Haviers	6	-	-	-	-	-	6	-	0
	302	70	19	168	-	28	78	89	364

1. 2 Discovered winter 78/79 previously written off.
  2. 4 Hinds not seen for 2 years. Escaped.
- \* Calf numbers include 11 calves on hill 1.11.79.

TABLE 2Reproductive Performance of Herd

Herd	Hinds to stag	No. of calves born	No. of calves born dead	A/R	A/R died	Calves with hinds died birth to weaning	No. of calves weaned	% weaned
Main Farm (Hinds born 1970,71,72,73)	88	81	1	21	3	4	73'	83
Upper Farm (Hinds born 1974,75)	80*	79	3	6	2	6	62'	85
Spare Hinds	8	8	1	-	-	-	7'	87.5

- \* Excludes 1 hind not recorded.  
' Include 11 estimated on hill 1.11.79.

TABLE 3

Liveweights of Breeding Hinds (Nos. in Brackets)

Hinds Born	Weight Sept. 1978	Weight March 1979	Weight Sept. 1979
<u>MAIN</u> <u>FARM</u>			
1970	79.8(5)	78(4)	84(5)
1971	77.0(41)	77.3(40)	83.1(42)
1972	77.2(19)	77.5(21)	82.8(22)
1973	71.8(16)	71.4(19)	75.4(16)
<u>UPPER</u> <u>FARM</u>			
1974(1)	68.3(16)	71.6(17)	76.3(16)
1974(2)	72.3(26)	74.8(26)	79.8(25)
1975(1)	72.3(16)	74.5(14)	76.5(18)
1975(2)	68.9(15)	72.8(16)	76.4(15)

- (1) Home-bred stock naturally reared.  
 (2) Bought-in-stock artificially reared.

TABLE 4

Weaning Weights of Calves (Nos. in Brackets)\*

Sex	Sept. 1978	Sept. 1979
Stag Calves	29.8 (49)	36.4 (53)
Hind Calves	27.3 (24)	35.1 (62)

\* Excludes 11 calves on hill and artificially reared calves.