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HILL FARMING RESEARCH ORGANISATION

FARM REPORTS AND SUMMARY OF FLOCK RECORDS

1977

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I. FARM REPORTS - 1977

A. GLENSLAUGH

WEATHER

The autumn of 1976 was generally wet with occasional rainstorms which caused considerable damage to Loch Saugh spillway and to hill roads. Snowfalls occurred in November and continued intermittently throughout the winter months. Consequently the ground was rarely free from snow cover until late March 1977. Cold inclement weather persisted during the lambing period. The summer months were cool with adequate rainfall to ensure a relatively continuous growth of grass and crops. Wet conditions extended into autumn which was notably free from frosts. A heavy snowfall with drifting was experienced in late November but most of December was comparatively mild.

SHEEP

All breeding flocks including the Cheviots on East Finella were involved in the various projects and sheep management was according to research schedules. The ewes were generally in poorer condition following the 1976 drought. This was counteracted on Mid and West Finella by providing Runevite Feed Blocks during the period 25th September until 10th January. Winter feeding of hill sheep started in late November to early December and continued on nearly all hefts until mid-May. Supplementary feeding of all sheep did not cease until 27th May. The Table shows that exceptionally large quantities of hay and concentrates were fed during this period. However, despite the high input of food, the ewes were in only moderate condition at lambing. The Cairn and Birnie ewes were poor at lambing time and had not responded so well to the high food input.

Lambing took place during the period early March to mid May under adverse weather conditions. Lambing results varied considerably according to flock. Compared with 1976 there were substantial reductions on Cairn (32%); Birnie (34%); East Finella (22%) and late lambing Greyface flock (38%). On the other hand there were improvements on Mid Finella (16%); West Finella (27%) and early lambing Greyface flock (16%). Most of the reductions are associated with fewer lambs born alive and high mortality soon after birth.

Ewe and hogg deaths were reasonably low, averaging around 5% for the farm. No serious disease problems were encountered during the year, though there was an incidence of pneumonia in Mid and West Finella ewes in autumn 1977.

The Cairn and Birnie hogs were again wintered indoors but were not housed until 11th January 1977. Finella hogs were outwintered as usual. All hogs made satisfactory progress during the winter and during summer.

Lamb growth was equal to or slightly above that of 1976 and all sheep made very good liveweight increases by November. At the pre-mating weighing the ewes and gimmers were respectively 5.76 and 6.50 kg heavier than in 1976; the hogs showed a mean increase of 4.5 kg. Some of the increased ewe mean live-weight could be attributed to a greater number of dry ewes and also the degree of culling which took place on some hefts.

Winter Feeding

Flock	Hay		Concentrates		Total cost per head
	Period	Total per head (kg)	Period	Total per head (kg)	
<u>Ewes</u>					£
Cairn	4 Dec - 6 May	68.5	10 Jan - 13 May	31.4	7.53
Birnie	4 Dec - 6 May	58.5	10 Jan - 13 May	25.6	6.30
East Finella	13 Dec - 5 May	70.3	10 Jan - 13 May	40.4	8.63
Mid Finella	4 Dec - 5 May	72.6	19 Feb - 26 May	24.7	7.04
West Finella	4 Dec - 5 May	72.6	19 Feb - 13 May	23.0	6.85
<u>Greyface:</u>					
Early lambing	29 Nov - 5 May	127.0	19 Jan - 27 May	127.2	21.56
Late lambing	29 Nov - 5 May	124.3	4 Feb - 27 May	84.5	16.71
<u>Hoggs</u>					
Finella	15 Dec - 30 Apr	29.5	22 Dec - 6 May	51.8	10.60
All flocks	Plus 11 acres of Kale @ £50 acre				
Cairn) in	26 Nov - 9 May	87.0	3 Nov - 9 May	40.0	9.58
Birnie) wintered	26 Nov - 9 May	79.4	3 Nov - 9 May	38.5	8.97

Costed at: Hay @ £60 ton; Concentrates @ £112 ton; Kale @ £50 acre.

Lamb Mortality

Flock	Born alive	Dead			
		Birth to marking	Marking to weaning	Total number	%
Cairn	177	37	8	45	25.42
Birnie	211	23	4	27	12.79
Mid Finella	210	12	4	16	7.62
West Finella	209	10	4	14	6.70
East Finella	199	34	10	44	22.11
<u>Greyface</u>					
Early lambing	199	9	3	12	6.03
Late lambing	154	12	0	12	7.79
TOTAL	1359	137	33	170	12.51

Lamb Disposal

Two hundred and twenty-one ewe lambs were retained for flock maintenance.

All classes of lambs met a buoyant trade and very satisfactory prices were realised. The principal prices were:-

Dorset x lambs from Greyface flocks and the crossbred ewes on
Mid and West Finella:

40 sold fat £21.13 per head
473 " store £22.64 per head
55 Cheviot store £21.11 per head
88 top B.F. store £18.10 per head
117 medium B.F. lambs sold fat off rape averaged £16.61 per head.

CATTLE

The cattle herd was housed on 9th September 1976 in preparation for the 1977 experiment. This experiment was concerned with groups of lean and fat cows having body condition scores $1\frac{1}{2}$ to 2 and 3 to $3\frac{1}{2}$ respectively at 12 weeks prepartum. Nutritional treatments were then applied to supply 70% or 115% of maternal maintenance during the remainder of pregnancy. These levels of nutrition produced very lean cows in the lean groups and six Hereford x Friesian cows were withdrawn from the experiment as being in too poor condition to endure further under-nutrition. No Blue Grey cows were withdrawn for this reason.

The remaining cows all calved without undue trouble and calf birth weights from all groups of cows were similar and satisfactory (40 kg). After calving and until turnout the cows were fed either for maintenance plus $\frac{1}{2}$ gallon or M + 2 gallons milk. These levels of nutrition produced differences in mean milk yield and calf growth. However, after turn out to graze high quality pasture on 23 May the milk production and calf growth of all groups of cows increased substantially. Consequently there was little difference in mean calf liveweights when the experiment terminated at the end of August. During the grazing phase the experimental cows were grazed in two groups through a paddock system. They were organised as Leader and Follower groups so that the Leader group was always offered a substantially greater quantity of herbage. Estimates of herbage intake of cows were made.

The rebreeding of the cows, calved heifers and bulling heifers was organised so that there were three bulling groups of cows at Glensaugh each with a Charolais bull. The bulling heifers with the A. Angus bull were transferred to House o' Muir for the breeding period then returned to Glensaugh.

Twenty heifer calves from the 1976 crop and over-wintered, were sold in March 1977 at an average price of £195.55.

Twenty-four 6-months old calves were sold in September 1977 at an average of £167.50 and the remaining 60 put in the cattle court after weaning in October 1977.

Six second calf Hereford x Friesian cows were transferred from House o' Muir to Glensaugh to augment numbers for experiments.

The following purchases were made:-

6 in-calf Hereford x Friesian heifers; 7 in-calf Blue Grey heifers;
6 Hereford x Friesian bulling heifers; 7 Blue Grey bulling heifers;
1 young Charolais bull.

	<u>Acres</u>
Rape	9
Hay	24
Sown to grass	18

In addition approximately 200 tons of grass silage was made from 8 acres plus cutting surplus grass from various experimental grazing plots.

MUIRBURN

Apart from a small area on Mid Finella heather burning was impossible due to the weather prevailing during the burning season.

FENCING

Further progress has been made during the year to renew or upgrade fences and all internal fences on the farm are now stock proof. The major fence works which have been completed are the march fence separating the Cairn heft from Fettercairn Estates; this was in collaboration with Fettercairn Estates and Grampian Regional Council. The internal fences around lower Redstones, Cairn and Birnie fields are now stock proof.

BUILDING MAINTENANCE AND ALTERATIONS

The following works are now complete:-

1. Major dung handling and drainage scheme to cope with effluent from the cattle shed and stock yards.
2. The redesign of roadways at the farm entrance and within the farm steading to provide easy access for vehicles, vehicle parking space etc. The roadways are tar-sealed and additional main drains installed.
3. Major improvements to drains within cattle shed and to the roof. Provision of snow boards and crawling boards for safety.
4. Major repairs to Loch Saugh spillway with suitable reinforcements against further damage.
5. Houses No. 1 and 1A were modernised internally and No. 1A suitably equipped to provide self-catering accommodation for four single persons.

The upper flat (No. 8) is now also equipped to provide accommodation for a further four persons.

6. The pathway around the Portacabin office has been widened and a safety hand rail provided.
7. The roof, gutters and down pipes have been repaired on the Old Steading building.
8. Garages for houses No. 1 and 2 have been erected using timber salvaged from other buildings.

A new farm cottage (No. 6) is nearing completion and should be ready for occupation early 1978.

HILL ROADS

The severe winter and heavy rainstorms damaged several of the hill roads and tracks. These have been repaired and an additional drainage scheme was completed at the foot of the Greyface road in collaboration with Grampian Regional Council.

The access road to East Finella hill was improved.

B. LEPHINMOREWEATHER

January was mainly cold with snow on the tops. February continued cold and wet with snow above 1,000 feet during the first half; the second half was dry with cold east winds and frost. March was mainly mild and wet, but cold with east winds in the last ten days. The first half of April continued cold with strong winds varying from east to north - thereafter the month was very wet and cold giving the worst lambing conditions for many years. The second half of May brought a marked improvement with a much needed warm sunny spell. The summer, for the third successive year, was above average and by the end of July both the domestic and field water supplies were at a critical level relieved only by a wet first week in August. Autumn was very wet with good grass growth. Weather throughout tugging was the best for many years.

Rainfall 1977

<u>Month</u>	<u>Rainfall</u> (mm)
January	185.7
February	169.2
March	206.2
April	154.2
May	56.1
June	57.4
July	88.6
August	109.5
September	210.3
October	221.7
November	266.7
December	115.1
Total	1840.7 (72.47 inches)
1976	1698.4 (66.87 inches)

SHEEP

Midhill ewes were again very lean at lambing. Runevite blocks were offered from 10th January until early March when concentrate feed was introduced. Barnacarry ewes again came through the winter in relatively good condition and were offered feed blocks from 16th February until after lambing. Low-End ewes were hill wintered in three groups as part of the newly initiated mid-pregnancy nutrition experiment. Weaning weights were up slightly on the previous year, but lamb growth particularly on the Midhill in the post clipping period was again less than satisfactory. Due to the poor performance on the Low-End the overall farm weaning percentage was down to 80, but this relatively low figure was amply compensated for by the experimental data obtained. Figures for previous years were:-

<u>Year</u>	<u>%</u>
1976	88
1975	85
1974	87
1973	97
1972	97
1971	96
1970	82

Ewe winter feed costs were:-

Barnacarry	£2.18
Midhill	3.33
Low-End	3.85

Lamb Sales

Seventy-nine top wedder lambs mainly from Low-End were sold at Stirling on 24th August at £15.90 per head; 71 ewe lambs averaged £12.47; 149 'second' lambs were consigned to grass at Bush and subsequently sold store in the Biggar market averaging £16.27 per head. Approximately 220 lambs were held over on 8 acres of rape with a run-off on three acres of grass and on 17th September at Dalnally 31 wedder lambs averaged £18.20 to a top of £20.70. Three riggings averaged £14.20 and 3 ewe lambs £16.80 per head; 58 ewe and wedder lambs were sold at Paisley on 12th October and averaged £12.70. At Dalnally on 5th November, 26 wedder lambs realised £13.50; 35 ewe and wedder lambs made £10.85 and 16 ewe lambs realised £10 per head. At Stirling on 23rd November, 20 ewe and wedder lambs were sold at £11.50 per head. At Paisley on 12th December, 3 fat lambs (15 kg d.w.) realised £19 per head and 24 ewe and wedder lambs made £10.20 per head.

Thirty-nine correct draft ewes were sold at Stirling on 3rd October at £16 per head; 69 feeding ewes sold at Stirling on 5th October averaged £11.65; 35 feeding ewes sold at Paisley on 12th October averaged £13.30 and 3 clean gimmers realised £12.50 per head. At Stirling on 23rd November 8 feeding ewes were sold averaging £17 and 8 gimmers at £18 per head. On 12th December at Paisley 2 gimmers were sold at £13.80 and 5 feeding ewes at £15.20; 20 wedder lambs were retained for experimental purposes along with 15 shott ewe and wedder lambs.

Hogg Wintering

Hoggs from all three hirsels were wintered at home. Low-End hoggs were taken from the hill on 19th October and housed from 29th October 1976 until 15th April, returning to the south end of the hill on 19th April. A total of $2\frac{1}{4}$ cwt hay and $40\frac{1}{2}$ lb concentrates were fed at a cost of £6.59 per hogg. Midhill hoggs were housed from 28th October until 7th April when they returned to the hill. A total of approximately 2 cwt hay and 39 lb concentrates were fed at a cost of £6.31 per hogg. Barnacarry hoggs were gathered from the hill on 1st November and housed from 8th November until 5th April when they were put out to Barnacarry croft and returned to Fearline on 12th April. Feeding stopped on 5th April. A total of approximately 2 cwt hay and 36 lb concentrates were fed at a cost of £5.87 per head.

Hay valued at £41 per ton; concentrates at £112 per ton.

HILL CATTLE

Winter feeding began on 18th October and continued until 7th May. A total of 23 cwt hay, 7 cwt straw, 12 cwt potatoes and $2\frac{1}{2}$ cwt concentrates was fed at a cost of £75 per head. Total supplement to the calves during the winter was 7 cwt hay, $1\frac{3}{4}$ cwt concentrates, 1 cwt grass nuts at a cost of £27.65 per calf.

Hay valued at £41 per ton; Straw £23 per ton;
Potatoes £10 per ton; Concentrates £110 per ton;
Grass nuts £74 per ton.

Eleven bullock calves were sold in September at Dalnally averaging £165 per head to a top of £211; 4 heifer calves averaged £165 to a top of £235 for a Simmental cross and £170 for a homebred heifer; 5 heifer calves are being over-wintered for addition to the Barnacarry stock.

Of the 22 cows and heifers due to calve in August 1977, all proved in calf with one set of twins, giving 23 calves being reared.

Six Luining heifers were purchased in March to form the nucleus of the Barnacarry suckler herd which with the addition of home bred cows and heifers now stands at 10 to be increased next year to 15 with home bred replacements.

Calf Weaning Weights

	<u>1976 (1 yr old)</u>			<u>1977 (1 yr old)</u>		
	No.	Date	Wt.(kg)	No.	Date	Wt.(kg)
Heifers	5	Oct.	314	8	Sept.	301
Bullocks	5	Aug.	303	7	Sept.	300

Hill Cows: August-September calvers

<u>Age</u>	<u>No.</u>	<u>Oct. 1976</u> <u>Wt. kg</u>	<u>Oct. 1977</u> <u>Wt. kg</u>
10	2	522	500
9	1	576	485
8	10	504	448
5	3	502	439
4	3	427	371
3	3	378	372

Numbers at December 1977

	<u>Lephinmore</u>	<u>Barnacarry</u>
Cows	19	3
Calved heifers	3	-
In-calf heifers	-	7
Heifer stirks	7	-

ARABLE GROUND

Field 4 was rotavated in June and sown out with a mixture of rape and Italian ryegrass on 29th June. This was the first rape grown since 1961 due to the prevalence at that time of Finger and Toe disease and although present again this year the crop was not materially affected and, in conjunction with 3 acres of permanent grass in Field 5 North, sustained 220 lambs throughout the autumn. While none was sold fat good liveweight increases were obtained which were reflected in increased average prices at sales; in addition there was the important aspect of partial immunity from the vagaries of a fluctuating store market, although in 1977 this was less than usual.

Treatment

1 - 10 June	Spread 2 yr stock of litter from sheep shed estimated 10 tons/acre
18 - 19 June	Rotavated
27 - 28 June	Disced. 5 cwt basic slag/acre (14% P ₂ O ₅)
29 June	18 lb/acre rape and Italian mixture 1½ cwt/acre compound fertiliser (24:4:15).
Grazing from 8 September until 20 December in four sections.	

Fields 5 South and 2 were cut for hay on 15th June. A light cut was taken from Field 3 on 9th July. A total of 26 tons was made of which approximately 11 tons were barn dried at a cost of £5.80 per ton (electricity only) of which approximately $1\frac{1}{2}$ tons were sold to Bush HQ for experimental purposes. Advantage was taken of a dry spell at the beginning of July and Fields 8 East, 'Lab.' and 'Tup Park' (10 acres Low End common grazing) were sprayed with MCPA to control the invading rush and thistle. The remainder of the in-bye fields were as usual 'topped' where possible using either hay mower or swipe.

Heather Burning

March 1977 was again wet and no heather burning was possible.

HILL GROUND

The 17 and 20 acre paddocks on the Low-End hirsell were given 3 cwt/acre of a compound fertiliser in mid-May and as a result the area maintained the hill cow herd from early June to early July plus the weaned calves in August, in addition to the normal ewe and lamb stocks. The continuation of this policy and the consequent reduction of grazing pressure on the arable ground could result in almost total self sufficiency of the suckler herd. Further applications of $1\frac{1}{2}$ cwt/acre compound (24:4:15) were given at the end of August to both paddocks and to approximately 6 acres of re-seed in Midhill PII (15:15:21). Spreading was done by farm machinery and labour.

FENCING

Approximately 750 yards of $12\frac{1}{2}$ g high tensile fencing was erected on the Midhill along a line stretching from the Garrine plantation through the base line of the triangular shelter belt to meet the top eastern corner of PII. This area will be used to contain the Midhill gimmers prior to lambing, thus reducing the overgrazing of PII which has occurred over a number of years.

A paddock was formed on the Low-End hirsell by drawing a rylock fence between the 'dry' and 'wet' site grazing plots and the perimeter fence of PII giving a lambing area for the 'hill' group of Low-End ewes.

Repairs were carried out to the Midhill/Barnacarry fences on the Glendaruel march but it is likely that partial or total replacement of the line wires and strainers may be required over the next five years.

Approximately 450 yards of the Forestry fence contiguous with the Lochan paddock on Barnacarry/Foorline hirsell required to be re-netted to prevent both cattle access to the plantation and ewe hogg access to the paddock from the plantation during wintering. Entry from Barnacarry hill to the new sheep fank was secured by erecting approximately 200 yards of rylock fencing a chain's width from the existing plantation fence.

The 'Lab.' field perimeter fence was partially replaced using rylock.

BUILDINGS

Alterations were carried out to the cattle byre to provide separate work and washroom facilities. The building was also bird proofed to comply with Home Office regulations. This work was again carried out by farm labour.

SOURHOPEWEATHER

The weather pattern of the winter months from tupping through to the onset of lambing was generally unfavourable, with above average rainfall and cold east winds. An initial snowfall in early December was short-lived, but the much heavier snowfall which occurred on 10th January, accompanied by strong winds which caused considerable drifting, persisted for some two weeks. Thereafter, no further snowfall of note occurred. Cold, wet weather continued through much of lambing and on into May, followed by a very wet June, after which a six week spell of dry, hot, sunny weather brought a welcome relief. Late summer and autumn weather has been mixed, but in the absence of the cold winds and low temperatures of last autumn, grass growth has persisted through to the turn of the year.

Overall annual rainfall for 1976-77 at 982.9 mm (38.7") was much higher than in any of the previous four years, and indeed it is nine years (1967-68) since a higher rainfall was experienced.

Rainfall 1976-77

	<u>Month</u>	<u>Rainfall</u> (mm)
<u>1976</u>	November	26.6
	December	117.0
<u>1977</u>	January	121.9
	February	110.0
	March	109.3
	April	66.3
	May	77.0
	June	129.5
	July	19.9
	August	105.7
	September	43.6
	October	56.1
	Total	<u>982.9</u> (38.7 inches)

SHEEP

It will be recalled that in the 1976 farm report, attention was drawn to the fact that the hill sheep stock were, in general, in poorer body condition as they were joined with the tup in November 1976, than in previous years. This was attributed to the shortage of standing herbage needed to bring the ewes into condition before tupping, a shortage occasioned by the unparalleled drought conditions of the preceding summer months.

With the subsequent unfavourable weather experienced throughout the whole of the winter months of 1976-77, placing additional stress on ewes in less than optimum condition at the outset of winter, then sustained winter feeding proved to be necessary. Feeding started early with two hefts of ewes being put on feed (self-feed blocks) as early as mid-December and all sheep being fed from early January, and was continued right through into lambing.

Feed inputs were necessarily high. A total of 62.7 kg dry matter (hay, whole oat cubes, concentrates and feed blocks combined) was fed on average to all outwintered ewes at a cost of £5.60 per head, compared with 28.4 kg at a cost of £2.35 in 1975-76. With the average feed cost for 1619 outwintered ewes (and gimmers) at £5.60, the range for the individual hefts was from £7.48 to £4.04. The average feed cost of all outwintered ewe hoggs was £3.28 per head, compared with £2.47 the previous year.

The Rigg and Gairs ewe stock was again inwintered, all ewe hoggs being housed on the 6th January. Rigg ewes were brought indoors on the 10th January with Gairs being housed the following day. A total of 104.2 kg dry matter on average was fed to the ewes at a cost of £6.75 per head, compared with 91.2 kg at a cost of £5.28 in 1975-76. For the inwintered ewe hoggs feed costs were £5.33 per head, compared with £3.67 for 1975-76.

Some feed data for both inwintered and outwintered sheep is shown in the following table, the feed items being costed as follows: (1975-76 prices in parentheses) - Hay £41 per tonne (£45/ton); Sugar-beet pulp cubes £88 per tonne (£68.90 per ton); Concentrates* £116.50 per tonne (£86.23 per ton); Grass nuts £79.40 per tonne (£77 per ton); Ewe and lamb food £114 per tonne (£93.50 per ton); "Whole-oat" cubes £97.75 per tonne; "Stockade" feed blocks £117 per tonne (£106.40 per ton); "Norbloc" feed blocks £151 per tonne (£137.32 per ton). Total expenditure on feed for all outwintered sheep, including ewes, gimmers, ewe hoggs, wethers and tups, expressed per outwintered ewe to the tup was £7.98 compared with £3.70 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)	Whole Oat Cubes (kg)	Norbloc Feed Blocks (kg)	Grass Nuts (kg)	Sugar Beet Pulp Cubes (kg)	Concentrates (kg)	Average Cost per Hogg
Outwintered hoggs	12.4	0.8	0.3	0.2	13.5	14.0	2.9	£3.28 (£2.47)*
Inwintered hoggs	38.1	0.8	0.4	-	3.5	22.4	11.9	£5.33 (£3.67)*

* 1975/76 costs

Ewe Feed Data

	Period	Hay (kg)	Sugar Beet Pulp Cubes (kg)	Whole Oat Cubes (kg)	Concentrates (kg)	Stockade Feed Blocks (kg)	Norbloc Feed Blocks (kg)	Average Cost per Ewe
Outwintered Ewes and Gimmers	Storn Feed (i.e. to 17/3 incl.)	13.2	-	13.1	5.1	2.5	2.6	£3.10 (£0.65)*
	Pre-lanbing Feed (i.e. 18/3 to 17/4 incl.)	5.9	-	-	10.6	0.5	1.1	£1.69 (£1.26)*
	Post-lanbing Feed (i.e. from 18/4, incl. that fed to twins)	1.9	-	-	5.9	0.2	-	£0.80 (£0.44)*
	Total	21.0	-	13.1	21.6	3.2	3.7	£5.60 (£2.35)*

Pre-lanbing /

Ewe Feed Data (cont'd)

	Period	Hay (kg)	Sugar Beet Pulp Cubes (kg)	Whole Oat Cubes (kg)	Concen- trates (kg)	Stockade Feed Blocks (kg)	Norbloc Feed Blocks (kg)	Average Cost per Ewe
Inwintered Ewes and Gimmers	Pre-lambing Feed (i.e. to 17/4 incl.)	60.5	20.8	-	13.1	-	-	£5.85 (£4.64)*
	Post-lambing Feed (i.e. from 18/4, incl. that fed to twins)	3.2	-	-	6.6	-	-	£0.90 (£0.64)*
	Total	63.7	20.8	-	19.7	-	-	£6.75 (£5.28)*

* 1975/76 costs

Bodyweight loss continued through tupping, but as feeding was introduced so further bodyweight loss was largely prevented and by the beginning of March the ewes were in good condition to respond to heavier pre-lamb feeding. Ewes entered the lambing fields in good condition and, although bodyweight loss over the lambing period was fairly severe, all ewe stocks made good bodyweight recuperation from the end of May on throughout the summer.

Marking weights of lambs, with the exception of those of the Rigg heft, were not so good as in the previous year, but thereafter good lamb growth rates were sustained through to weaning, to give weaning weights comparable to, or for some hefts, better than in 1976 (see Table 2).

The weaning percentages for South Country Cheviot, North Country Cheviot (including N.C.C. x S.C.C.) and Blackface ewes were 101.3, 103.8 and 108.5 respectively, to give an overall weaning percentage of 105.2 compared with 100.5 last year. The overall weaning percentage for 1977 is the highest ever recorded for Sourhope.

The weaning percentages for all hefts, with the possible exception of Fasset (95.22) and Park Law (92.2) were good, with those for both the inwintered Blackface and Cheviot ewes of the Rigg and Gairs hefts being particularly satisfactory.

With ewe fleece weights being on average 0.2 kg lighter than for the previous year, and hogg fleece weights 0.1 kg lighter, the total weight of wool graded from Sourhope was 5.9% less than for 1976, the average price realised being £1.03 per kg (46.8p per lb).

Worm drenching of the ewe stock followed much the same pattern as for last year, with all ewes being worm drenched in autumn prior to tupping. Thereafter all outwintered ewes were re-dosed just before lambing, and subsequently all twin bearing ewes and their lambs were dosed in mid-May and again in mid-June, with twin lambs only, getting a further dose in mid-July. As for last year, the unusual step of dosing all single nursing ewes at marking was followed, although it is not intended to make this a routine practice. All single lambs were dosed in the period late June - early July. Inwintered ewes were given a worm drench at housing (Panacur used).

The problem of 'induced copper deficiency' which affects those Blackface lambs grazing the Alderhope reseeds, and which was referred to in the 1976 station report, has been the subject of further intensive investigations in 1977. The results of these studies are reported elsewhere (Annual Report).

A study of the long term effectiveness of cobalt bullets on ewes of the Park Law heft continues. It is of interest to note as a preliminary finding that the administration of a cobalt bullet to a Park Law ewe hogg subsequently assures that at each subsequent year of age so far tested, the vitamin B₁₂ content of the blood serum has been almost double that of a ewe from the same heft, which as a ewe hogg was not so treated.

All stock ewe (and wether) hoggs on the station, other than those concerned in the Park Law trial, are given a cobalt bullet as a matter of routine. It is the intention to give a second bullet three years later, i.e. when the hoggs become 3 shear (2 crop).

Disposal of Lambs

The bulk of the lamb crop was sold through the store market with Cheviot lambs averaging £0.697 per kg liveweight (top price £0.762) and Blackface lambs averaging £0.603 per kg liveweight (top price £0.646). A total of 539 North Country Cheviot lambs (and N.C.C. x S.C.C.) averaged £18.60 per head (£15.77 in 1976), 538 South Country Cheviot lambs averaged £20.02 per head (£13.98 in 1976) and 521 Blackface lambs averaged £17.50 per head (£11.95 in 1976).

In addition to the above, 65 Blackface lambs have so far been sold fat off rape, at an average carcass weight and price per head of 17.6 kg and £21.95 respectively. Fifty-seven lambs remain to be sold. The overall average for all 1713 lambs sold to date is £18.84 which compares with an overall sale figure of £14.12 in 1976.

Details of the disposal of the 1977 lamb crop are as follows:-

Ewe lambs (home-bred) retained as stock replacements	472
Wether lambs retained as wether stock replacements	30
Tup lambs for breeding	4
Visectonised tup lambs	10
Lambs sold store	1648
Lambs sold fat	65
Lambs as yet unsold	57
	<hr/>
	2286
	<hr/>

In the autumn, outbreaks of pasteurilla haemolytica (pneumonia) occurred in lambs being held over for later sales, and accounted for twenty deaths. The condition, which is not normally experienced at Sourhope, responded to 4 ml of long acting penicillin, given intra-muscularly.

All South Country Cheviot draft ewes were again sold through the feeding or fat market, where they sold to a top of £18.00 and an average price of £14.81. North Country Cheviot (and N.C.C. x S.C.C.) draft ewes sold to a top of £24.50 and an average price of £20.80 per head. Blackface draft ewes sold to a top of £19.00 and an overall of £17.53. The overall average price for all draft ewes sold is £17.92, which compares favourably with the figure of £15.97 for 1976.

Death Rate

The overall death rate of the sheep stock in the twelve months since November 1976 was 3.6%, with the death rate of ewes, gimmers and hoggs being 4.1%, 3.7% and 2.0% respectively. Overall death rate for 1976 was 3.8%.

Sheep Stock Autumn 1977

The relatively mild autumn weather ensured continued grass growth, and with the possible exception of both the Gairs and the Rigg stock - where weaning was again delayed - the breeding stock have come to the tup in improved body condition, compared with last year. The weather over tupping has been good and sheep have held their condition well.

A total of 3001 sheep, including 48 draft Blackface ewes involved in copper investigations, will be overwintered this year at Sourhope.

CATTLE

With the policy of continued reduction in suckler cow numbers from a peak of 71 in June 1972, the opportunity was taken to cull 5 cild cows in late autumn 1976. Fifty nine suckler cows (including 1 in-calf heifer) were taken through the winter, with Pronax liquid feed being fed along with straw from late December. Silage was introduced in mid-January. On average each cow received 5.17 tonnes silage, 213 kg hay, 612 kg feeding straw, 73.6 litres of Pronax 36, 167 kg of magnesium fortified hill cow cobs, and 236 kg of potatoes. The cost per cow of all purchased feed, i.e. excluding silage, was £50.32 compared with £24.57 for 1976.

Reference was made in the 1976 farm report to the continuing problem of excessive numbers of cows failing to breed, pregnancy diagnosis in the autumn of 1976 having again revealed an unacceptably high level of barren cows. In addition to the 5 barren cows which were culled subsequent to the pregnancy test (and already referred to), a further seven cows proved not to be in calf, and thus only 52 calves were reared. It had been suggested in the previous year that inadequate phosphorus intake may have been a contributory factor. However the feeding of a high phosphorus mineral mixture to the suckler cows before and during the mating period in spring 1976, had obviously no effect on improving the conception rate in the herd.

Up to this point in time, attention had been concentrated on the suckler cow and her feeding, in part at least, because the appearance of an infertility problem where none had existed before, co-incided with the introduction of a proprietary molasses-based liquid feed containing urea fed in conjunction with straw. Nor did it seem likely that the two stock bulls, each from a different herd, bought in successive years at the Edinburgh bull sales as guaranteed "stock-getters", and each of which had left calves since their arrival at Sourhope, could both be of questionable fertility with regard to semen quality; and yet this would have to be the case since all cows were run for some period with each bull. Nevertheless in view of the unacceptable situation with respect to barrenness, routine screening of each bull with respect to semen quality was arranged in the early part of 1977. As a result of this examination, the Veterinary Investigation Officer concluded in his report that "the fertility of both bulls is in doubt and this could be responsible for the high number of barren cows". A second examination, made four weeks later, confirmed that both bulls were producing semen of very poor quality.

Arrangements were put in hand immediately to borrow an Accredited bull which had a proven record with respect to getting cows in calf, and the poorest of the two Sourhope stock bulls was laid off. All cows, which necessarily have to run in two herds over the later part of the bulling period, were covered for an adequate period by the "new" bull. It will be of interest to report on the ensuing 1978 calving; only 1 cow so far having been definitely diagnosed as barren, with suspected cystic ovaries.

The management of the suckler herd from April to the end of the year was again dictated by their use as "grazing tools" on the Development Project areas. Creep feed was offered to the calves over the last 60 days to weaning. Some calf performance data for 1977 is shown in the following table, all calves being

Hereford x.

Sex	Nos.	Average Birth Weight (kg)	Average Weaning Weight (kg)	Average Liveweight Gain Birth - Weaning (kg)	Average Daily Liveweight Gain (kg) (lbs)
Bullock	24	39.0	257.6	218.6	0.95 (2.10)
Heifer	24	34.5	245.0	210.5	0.83 (1.94)
All Calves	48	36.7	251.3	214.6	0.91 (2.01)

Forty-seven Hereford x calves were sold at the October sales to average £146.20, a fall of £11.10 over the average price of 1976. Price and weight data is shown in the following table:-

	Number sold		Weight (kg)		Price/head		Price p/kg.	
	1977	1976	1977	1976	1977	1976	1977	1976
Hereford "x" bullocks	24	36	256	234	£ 159.90	£ 171.36	62.5	73.0
Hereford "x" heifers	23	20	247	221	131.90	132.00	53.0	60.0
Overall	47	56	252	229	146.20	157.30	58.0	69.0

Four Friesian "set-on" bullock calves, and one small Hereford x heifer calf are being overwintered.

MUIRBURN

No burning was carried out in the spring of 1977.

CROPPING

A total of 13.4 hectares (33 acres) of grass was conserved as silage and 5.1 hectares (12.5 acres) as hay.

Six hectares of inbye permanent pasture were sprayed with M.C.P.A. on 17th June to control nettles, together with boar thistles and creeping thistles.

After a silage cut 2.5 hectares of 9-year old grass was sprayed with 4.5 litres per hectare of Paraquat on July 7th, and after rotavation was sown out to a rape, turnip and Italian ryegrass seeds mixture. Despite the late date of sowing, an excellent forage crop for autumn fattening of lambs and ewes was obtained.

BRACKEN SPRAYING

No bracken spraying was carried out in 1977.

BUILDINGS

The extensive alterations to the Sourhope hostel in progress from the autumn of 1976, are still continuing.

The new lease agreement negotiated with Roxburghe Estates, and which came into force in June 1976, transferred responsibility for the maintenance of all the original farm buildings to HFR0. Urgently needed repairs were immediately put in hand with the main granary and adjacent area being re-roofed. At the same time an internal floor was renewed, and these buildings are now in much improved condition.

The hill road from the main steading up the Fasset hill to the point where it branches to Auchope, which has been progressively disintegrating because of weight of traffic carried, has been surfaced with tar macadam and is now stabilised.

A much needed extension to the toilet facilities necessary when handling large numbers of visitors has been provided with the provision of a pre-fabricated unit.

The cedar shingle roof of the office building is in the course of being treated to preserve its condition.

DEVELOPMENT WORK

Progress has been maintained in the Development Projects.

A commitment has been made to a "phased" reseedling of the major part of the hill ground enclosed within the 18.2 hectares of paddock I in the Hairney Law-Auchope project, beginning in 1978. This enabled a preliminary comparison of reseedling techniques to be made in 1977, since no previous experience of reseedling hill areas with brown forest soils at Sourhope, was available. Reseedling was carried out in March and April, ploughing being compared with a herbicide treatment followed by rotavation. Both techniques gave an excellent sward establishment. Since the use of the rotavator on the ground in question is less demanding, it was decided that this technique will be adopted in establishing the large reseeds within paddock I, beginning in 1978. Accordingly 7.5 tonnes per hectare (3 tons/acre) of Ground Magnesium Limestone was spread on the 18.2 hectares of paddock I in the dry weather of August 1977. It had been hoped to apply 170 kg of P₂O₅ per hectare (150 units/acre) but the weather deteriorated before this could be put on, and it is yet to apply.

It will be recalled that in August 1976, paddock I was sprayed for bracken, and the suspicion was voiced in last year's report that the timing of the spraying operation may have been a little late because of the effect of the abnormal drought conditions of that year, on bracken vigour. There has been some regrowth of bracken in small patches in 1977, and whilst the spraying may not have been so successful as in previous Sourhope experience, nevertheless the resulting kill has been very satisfactory as a prelude to reseedling.

The weight of lamb weaned per ewe mated was only 28.3 kg in 1977 compared with 28.9 kg in 1976, but this must be considered highly satisfactory bearing in mind that pre-tupping weights in November 1976 were down on average by 4.4 kg over the previous autumn.

The breed changeover on Project II from South Country Cheviot to Blackface is continuing. In August 1977 the 12.0 hectares of enclosure E1 on the Gairs accessible to a tractor and spreader, were top-dressed with 860 kg of Phossac per hectare, thereby providing 170 kg of P₂O₅ per hectare. No further inputs were made to Project II.

The copper studies associated with the reseeds of Project III, are continuing, and are reported elsewhere.

D. HOUSE O' MUIRWEATHER

The winter of 1976-77 was one of the worst for a long time. Snow, rain and cold weather persisted throughout and feed costs for sheep and cattle were very much higher than in previous years. June was the wettest month of the year and this too had an adverse effect on stock. July, in contrast, was very dry and pastures were beginning to suffer when the rain returned in the second half of August and stayed throughout the autumn months. The rainfall for the year was 202.8 mm greater than in 1975-76 with a total of 928.5 mm.

Rainfall 1976-77

	<u>Month</u>	<u>Rainfall</u> (mm)
<u>1975</u>	December	58.6
<u>1976</u>	January	97.2
	February	76.7
	March	83.3
	April	40.6
	May	44.5
	June	121.8
	July	14.6
	August	117.2
	September	76.6
	October	100.0
	November	97.4
	Total	<u>928.5</u> (36.61 inches)

The 10 year average is just over 800 mm.

SHEEP

The hill ewes were in reasonable condition at mating time 1976 and tupping went well in the hill flock (379 in number). The 35 Blackface gimmers and 46 Blackface/East Friesland gimmers taken off the hill as part of the research programme were oestrus/synchronised and mated with Down rams. This was not so successful (perhaps due to some degree of selectivity on the part of the rams) and this is reflected in a poorer lambing percentage (see Table 2 at end of Report).

As was mentioned in the weather report 1977 was a poor spring and as a result feeding requirements on the hill ewes were greatly increased on 1976. Concentrate consumed, rose by 18 kg/head to a total of 28 kg/head and some 30 kg/head hay was also required. Concentrate cost £108 per tonne and hay averaged £50 per tonne: cost per head £5.52.

The ewe hoggs also required extra feed and, apart from a group of 20 from a low level nutritional plane, came through the winter reasonably well.

After the bad winter, the wool clip, although of greater cash value, was less per head in terms of weight.

No wethers were required for the HQ wether pool in 1977.

Disposal of lambs and cast ewes

A total of 456 lambs were marked and 4 deaths occurred between marking and weaning.

The 452 lambs weaned were disposed of as follows:-

Sold store	302
Sold fat	35
Retained as stock replacements	92
On hand 30/11/77	20
Deaths since weaning	3
	<hr/>
	452
	<hr/>

101 cast ewes were sold

Sold store (Lanark)	50
Sold HFR0 Research a/c	35
Incorrect and sold fat	16
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	101
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Prices obtained for store lambs

Blackface wether lambs (top)	£19.20
Blackface wether lambs (bottom)	18.00
Blackface wether lambs (average)	18.84
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Blackface ewe lambs (top)	£27.50
Blackface ewe lambs (bottom)	16.10
Blackface ewe lambs (average)	25.10
	<hr/>
Cross lambs (top)	£25.60
Cross lambs (bottom)	18.00
Cross lambs (average)	23.40
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Prices obtained for fat lambs

Only 35 have been sold fat and the average price was £17.48.

Prices obtained for cast ewes

The 101 ewes sold averaged £17.95.

CATTLE

The calves born in 1976 were sold during the spring and autumn of 1977 as grazing stirks and satisfactory prices were obtained.

Prices for Stirks sold

Date of Sale	Number	Sex	Price per Head
			£
16/ 2/77	5	M	177.00
9/ 3/77	5	F	155.00
23/ 3/77	5	M	172.00
9/11/77	4	M	185.50
9/11/77	1	F	195.00

Thirty-one cows and heifers were put to the bull in 1976 and 29 calves were born in 1977. One cow and one heifer were sold as non-breeders. To date only 5 calves have been sold at an average price of £162 and this price could not be considered satisfactory as it worked out at only £27 per cwt.

The balance will be carried over until spring time.

To help out the overall research programme in 1977, the House o' Muir Charollais bull was loaned to Glensaugh and some of the House o' Muir cows were taken to Glensaugh to form part of a bulling group. In exchange House o' Muir and Glensaugh heifers were mated at House o' Muir with the Glensaugh Aberdeen-Angus bull. At the end of the mating period the stock involved were returned to their respective farms.

BUILDINGS

The work started on the feeding passage has been completed and a concrete feeding apron has been laid in one section of the shed.

The remaining section of the old building above the barn has been reroofed in asbestos and at the date of the report is 90% completed.

The old roof over the cattle handling area and old cattle shed has been removed and the new "umbrella" type roof is to be erected by outside contract commencing on 9th January 1978.

The two loose boxes approved for fistulated animals have now been completed.

The new cottage for the shepherd is now completed and occupied. The access road is now complete.

Some painter work and general repairs have been carried out during the year.

FENCING AND DYKING

Approximately 1000 yards of new fencing has been erected and some patching of dykes carried out. This was all done by farm labour.

Four hundred and fifty yards of march fencing with the East of Scotland College of Agriculture has been renewed by ECRE labour and the cost shared.

MUIRBURN

The weather made it impossible to carry out muirburn in 1977.

LAND IMPROVEMENT AND RECLAMATION

No lining or phosphating was carried out in 1977.

The work on the 20 acre block of Nardus started in 1976 was taken a stage further in 1977. The area was again rotavated, a permanent grass seed mixture sown after a double rolling with Cambridge rollers and this was followed by a further rolling with the 4 ton flat roller. Three cwt compound fertiliser (20:10:10) was applied.

With the dry weather the grass seed was slow to germinate on the drier areas but by the end of September appeared reasonably satisfactory over the whole area and was grazed lightly with sheep.

The 21 acre area of old pasture which was directly drilled with rape in 1976 was rotavated twice and sown to a permanent grass mixture after treatment similar to the hill reseed. Apart from a few bare patches caused by the Grass Seed Broadcaster drive missing on the uneven ground, this reseed was very useful and valuable clean keep for the second and third draw lambs.

Additional Land

As a result of ECRE taking over Glencorse Mains from the outgoing tenant, this farm was split up between the various research bodies and HFRO share was a very useful 24 acre field.

E. RED DEER FARMWEATHER

The heavy rainfalls experienced in late September continued throughout October. By mid-October five fences had been breached by flood water, and the rutting groups in adjacent areas were mixed.

Thick hill fog accompanied heavy rain and persisted without a break until the middle of November. Observing the rut was difficult and frequently impossible.

On 4th December snow fell to a general depth of 12". The snow remained on the pastures until late March, and the seven foot perimeter fence on the north side of the Goyle remained buried throughout the period.

The spring and summer months were generally good, pasture growth, particularly heather, was the best for several years and by the autumn both the breeding stock and the pastures were in excellent condition.

THE 1976 RUT

The appalling weather throughout the rut had an adverse effect on rutting behaviour. The stags were unable to collect the hinds and maintain them in tight, compact groups as is normal. Instead, the hinds were spread out over the entire area foraging on wet bare pastures.

Results of the 1976 Rut

	GROUP	1.	2.	3.	4.	5.	TOTAL	%
<u>MAIN FARM</u>	<u>HINDS</u>	30	18	18	18	11	95	100
	<u>CONCEIVED</u>	29	15	11	17	3	75	78
	<u>BARREN</u>	1	3	7	1	8	20	21

Of the barren hinds:-

Nos. below 65 kg	0	0	0	0	3	3	14
Nos. below 60 kg	0	0	0	0	0	0	0

	GROUP	1.	2.	3.	4.	TOTAL	%
<u>UPPER FARM</u>	<u>HINDS</u>	26	23*(10)	16	19	84	100
	<u>CONCEIVED</u>	10	11	6	5	32	38
	<u>BARREN</u>	16	12	10	14	52	61

Of the barren hinds:-

Nos. below 65 kg	9	10	9	9	37	71
Nos. below 60 kg	2	7	6	4	19	36

* 10 hinds from this group escaped and were not recaptured until after the rut on 12/1/77. They were seen rutting with wild stags.

CALVING in June/July 1977

The calving was very late, most of the calves were born in the latter half of June and the first two weeks of July. On the Main Farm, of the 95 hinds put out to the stags only 75 produced calves and a lot of the calves were smaller than normal. On the Upper Farm only 32 calves were born to the 84 hinds put to the stags. A large number of calves were never found and may have been still-born. In many cases the only indication of calf-birth was the hollow sides of the hind and a very small (0.5 to 0.75) udder development. A large percentage of these hinds were too small to breed successfully.

Disposal of Calves

36 weaned female calves were sold to Highlands & Islands Development Board
 6 day old calves " " " the Rowett Research Institute
 6 weaned calves " HFRO - Bush.
 2 3 week old calves were given to the Forestry Commission - South Conservancy
 34 calves have been retained on the farm.

Calf Deaths - Hind Deaths

After weaning in the autumn of 1976, some 16 calves died in the space of a few days during severe weather. At the same time 4 hinds died in an adjacent paddock, all on the same night. The animals had died from hyperthermia during torrential rainstorms in almost freezing temperatures. The stress of weaning, loss of milk in the diet and the unfamiliarity of the concentrate supplement all contributed to the catastrophe.

VENISON SALES

At the start of the season the price offered ex-farm for a carcass in skin was 85 pence per pound. This price level dropped to 75 pence by the beginning of October. The current price for hind venison is 60 pence/lb. A total of 19 stags were sold to the trade via the local game dealer for export to European countries.

DEER LEAP

After consultation with members of staff of the Forestry Commission, a deer leap was built on the Upper Farm perimeter fence to allow animals which may escape from the farm, a means of re-entry. One wild stag entered the farm via the leap and was promptly shot - £50 from the proceeds of the sale of this animal will be given to the Forestry Commission as agreed.

WINTER SUPPLEMENTARY FEEDING

The winter of 1976/77 was the most severe for many years. Some 18 tons of hay was fed to the deer stock over the period 4/12/76 to 28/3/77 at a cost of £5.00 per animal.

SNOW TRAC

The heavy snowfalls in early December rendered the access road impassable to wheeled vehicles. The Macaulay Institute kindly gave us the use of their Snow-trac so that we could get fodder up to the deer. The hay had to be sledged for 3 miles, mostly uphill, until we took delivery of a second-hand machine from McLarty Ltd. of Crieff. This machine has proved to be extremely useful at other times of the year for transporting materials to the hill.

SLAUGHTER FACILITY

Unfortunately, owing to illness, which resulted in plans being lost by the contractors, the building has not yet been completed. Work is now in progress however, the building has been roofed, the floor laid and all that remains to be done is the manufacture of the killing crate and the hanging rails.

HAY BARN

The "Arcon" prefabricated building bought last year was erected on a three foot high side-wall base and should hold enough hay to feed all the stock for a 4/5 month period if required.

FENCE MAINTENANCE

Once again, wind and rain causing flooding, damaged fence-lines on both the Main and Upper farms. Some fences were washed out where they crossed streams, some were flattened by falling timber and others were rendered useless by the erosion of peat. All were repaired as required and are now stock proof.

UPPER FARM AFFORESTATION

Several thousand trees supplied by the Forestry Commission were used to "beat up" the experimental plantation in the spring. The establishment is considered by the Forestry Commission to be "very poor".

UPPER FARM RESEEDS

The pastures suffered badly in the drought of summer 1976 and the areas were resown with grass seed at a rate of 15 lbs/acre followed by a top dressing of 2 cwt Nitre Chalk and in the autumn an application of 5 cwt basic slag/acre.

Two new areas amounting to 10 acres were prepared for reseeding by swiping in the early spring. In August these areas were given 3 tons lime, $\frac{1}{2}$ ton basic slag and sown at 28 lbs grass seed mixture per acre. The grass has taken well and looks good.

STAGS FOR BREEDING

Two stag calves of the Galloway type were obtained from the Forestry Commission at New Galloway in exchange for two hind calves from Glensaugh. The stag calves were reared artificially along with another 8 Glensaugh stag calves which were taken at birth from selected hinds. These calves averaged 36.8 kg in early September.

H.I.D.B. - STAGS

Ten stags were sold to H.I.D.B. and sent to Rahoy in September. They are all home-bred and will be used at Rahoy to serve their hinds at the 1978 rut.

H.I.D.B. - CALF-REARING

Some 34 calves from Estates in the Eastern Grampians were collected and artificially reared at Glensaugh. Four calves died within 24 hours of arrival and 30 calves were successfully reared and sent to Rahoy on 17/8/77. The H.I.D.B. met all the costs involved.

BEHAVIOURAL STUDY RACE

A race some 22 metres long, 3 metres wide and 3 metres high was built in the spring and first used in June to determine the "tolerance towards human beings" of the deer of different upbringing, i.e. natural or artificial. There is a clear cut difference in the levels of tolerance achieved by the two classes of stock, and this of course affects their handling properties.

STOCKMAN

Mr. Callum Thomson was appointed deer stockman and took up his duties on 16th May.

VISITORS

Approximately the same numbers as last year, between 300-400 visited the Deer Farm.

VERMIN

Five fox cubs were killed on the farm during June.

II. SUMMARY OF FLOCK RECORDS 1976/77A. GLENSAUGHTABLE 1Reconciliation of Ewe Numbers

Flock	Breed	Ewes and Gimmers Nov. 1976	Cast and Cull	Deaths		Gimmers brought in 1977	Ewes and Gimmers Nov. 1977	Hoggs born 1977
				No.	%			
Cairn Birnie	BF	196	57	14	7.14	51	176	50*
	BF	225	54	11	4.88	55	215	58**
	Total	421	111	25	5.94	106	391	108
East Finella	NCC	150	33	7	4.66	61	171	47
Mid Finella	BF	77	27	3	3.90	23	70	23
	Tex x BF	35	13	0	0	11	33	18
	BL x BF	36	13	2	5.55	13	34	11
	Total	148	53	5	3.38	47	137	52
West Finella	BF	80	28	2	2.50	21	71	22
	Tex x BF	34	5	0	0	9	38	8
	BL x BF	34	4	1	2.94	10	39	9
	Total	148	37	3	2.03	40	148	39
Greyface	Flock	233	51	16	6.87	77 [♠]	243	-
Preg./Lact.	Greyfaces	-	-	-	-	-	95 [♠]	-
GRAND TOTAL		1100	285	56	5.09	331	1185	246

* Includes 12 purchased

** Includes 13 purchased

♠ Purchased 1977

♠ Additional experimental flock comprised of 30 ewes cast from Greyface Flock and 65 purchased from Research Account.

TABLE 2

Weaning Percentages and Lamb Liveweights

Flock	Breed	Ewes to tup 1976	Lambs Weaned			Weaning Weights (kg)	
			1977		1976	Single	Twin
			No.	%	%		
Cairn Birnie	BF	196	132	67.34	99.0	26.4	24.8
	BF	225	184	81.77	115.80	28.7	24.1
East Finella	NCC	150	155	104.02	126	31.59	28.65
Mid Finella	BF	77	92	119.49	114	31.47	26.74
	Texel x	35	47	134.28	125	33.39	29.82
	BL x	36	55	152.77	115	33.75	27.62
		148	194	131.08	115	32.43	27.69
West Finella	BF	80	95	118.75	100	30.86	27.00
	Texel x	34	50	147.05	90	34.43	28.36
	BL x	34	50	147.05	150	33.00	27.69
		148	195	131.75	105	31.07	27.56
<u>Greyface</u>							
Early lambing		122	185	151.64	136	36.68	28.95
Late lambing		110	142	129.09	168	36.54	32.89
		232	327	141.20	152	36.59	30.39

TABLE 3

Liveweight (kg) of sheep - November 1976 and 1977

Flock	Breed	Ewes		Gimmers		Hoggs	
		1976	1977	1976	1977	1976	1977
Cairn Birnie	BF	49.7	52.88	41.1	47.28	28.6	28.88
	BF	47.2	54.65	38.9	47.17	30.2	31.87
East Finella	NCC	67.9	69.69	57.2	62.90	33.1	40.17
Mid Finella	BF	59.9	65.79	54.22	63.43	34.8	36.65
	Texel x	59.9	66.34	57.00	61.90	34.3	36.86
	BL x	61.9	65.95	56.15	63.83	32.2	37.90
West Finella	BF	55.9	59.24	49.1	52.76	27.1	37.22
	Texel x	54.7	62.58	54.6	59.16	30.6	36.75
	BL x	56.4	62.96	54.6	64.59	33.5	38.33
Greyface flock		64.1	75.23	67.6	68.43	-	-
Preg./Lact. Greyfaced		-	75.10	-	-	-	-

TABLE 4

Cattle Stocks at December 1977

	<u>Hereford</u> <u>x</u> <u>Friesian</u>	<u>Blue</u> <u>Grey</u>
Cows in-calf to Charolais Bull	37	35
Eild Cows	-	-
Heifers with Hereford x calves at foot	-	7
Heifers in-calf to A. Angus bull	10	4
Bulling Heifers	6	7
	<u> </u>	<u> </u>
Totals	<u>53</u>	<u>53</u>

Other Cattle

Two Charolais bulls
One A. Angus bull
60 weaned calves

B. LEPHINMORE

TABLE 1

Reconciliation of Ewe Numbers 1976-77

Hirsel	Ewes and Gimmers Nov.1976	Cast	Deaths*	Transfer out	Gimmers brought in	Hoggs born 1977	Ewes and Gimmers Nov.1977
Barnacarry/ Feorline	251	43	15 (9)	-	63	77	256
Mid-Hill	452	81	24 (4)	-	107	125	454
Low-End	399 ^x	53	28 (9)	38 ^x	92 ^x	96	372 ^x

- * Includes Black loss (in brackets)
^x 399 includes 32 slaughter (ewes and gimmers)
 (16 slaughtered 25/3/77
^x 38 includes (13 " 27/5/77
 (9 " 18/11/77
^x 92 includes 6 for slaughter
^x 372 includes 14 " "

TABLE 2

Weaning Percentage 1977

Hirsel	Ewes and Gimmers to Tup	Lambs Weaned %			Weaning Weights	
		Total	1977	1976	Singles kg.	Twins kg.
Barnacarry/Feorline	251	188	74.9	76.5	24.50	29.67
Mid-Hill	452	420	92.9	91.3	25.20	21.53
Low-End	367 ^x	252	68.7	92.1	26.36	-

^x 367 does not include Slaughter ewes

TABLE 3

Weights of Ewes, Gimmers, Hoggs (kg) 1976-77

Hirsel	Ewes		Gimmers		Hoggs	
	Nov.1976	Nov.1977	Nov.1976	Nov.1977	Nov.1976	Nov.1977
Barnacarry/Feorline	48.8	47.0	42.8	40.6	26.8	26.8
Mid-Hill	50.5	51.3	45.6	44.6	26.7	25.1
Low-End	47.3	51.7	42.4	42.4	28.1	27.9

C. SOURHOPETABLE 1Reconciliation of Ewe Numbers 1976/77

Heft	Ewes and Ginners Nov. 1976	Draft and Cast Ewes	Deaths	Ginners brought in	Purchases Ewe Hoggs	Hoggs Nov. 1977	Ewes and Ginners Nov. 1977
<u>S.C.C.</u>							
Fasset	210	33	5	33	-	44	205
Rigg	152	54	5	-	-	-	93
Gairs	165	46	8	-	-	-	111
Total S.C.C.	527	133	13	33	-	44	409
<u>S.C.C. x N.C.C.</u>							
Hairney Law/Auchope	621	126	14	142	-	150	623
<u>N.C.C.</u>							
Park Law	163	52	7	42	-	40	151
<u>Blackface</u>							
Rigg	133	5	1	59	27	53	191
Gairs	132	2	3	72	13	75	199
Alderhope	272	54	19	60	-	63	259
Banks	348	72	10	71	-	79	337
Total B.F.	890	133	33	262	45	275	986
FLOCK TOTAL	2206	449	72	484	45	509	2169

TABLE 2Weaning Percentages and Lamb Liveweights 1976/77

Heft	Ewes to Tup	Lambs Weaned			Weaning Weights	
		Total No.	Percentage		Singles (kg)	Twins (kg)
			1976	1977		
Rigg S.C.C.	152	153	83.5	100.6	25.2	24.1
Gairs S.C.C.	165	131	101.3	109.7	23.5	26.0
Total	317	334	94.9	105.3	26.9	25.2
Fasset S.C.C.	210	200	86.2	95.2	-	-
Hairney Law/Auchope - S.C.C. x N.C.C.	621	664	103.5	106.9	27.0	25.5
Park Law N.C.C.	163	155	100.6	92.2	25.3	25.9
Alderhope B.F.	272	304	106.3	111.3	29.3	23.3
Banks B.F.	348	366	100.6	105.2	-	-
Rigg B.F.	133	152	93.5	110.1	30.0	27.1
Gairs B.F.	132	144	90.3	109.1	31.6	25.6
Total	890	966	101.5	103.5	30.1	27.7
S.C.C. Total	527	534	92.2	101.3		
N.C.C. (+ NCC x SCC) Total	789	819	106.9	103.3		
B.F. Total	890	966	101.5	103.5		
FARM TOTAL	2206	2319	100.5	105.2		

TABLE 3

Weights of Ewes, Gimmers and Hogs (kg)

HEFT		EWES		GIMMERS		HOGGS	
		November 1976	November 1977	November 1976	November 1977	November 1976	April 1977
Rigg S.C.C.	3,4 crop	54.9	55.2	-	-	-	-
Rigg B.F.	2 crop	-	56.1	-	-	-	-
Rigg B.F.	1 crop	52.6	52.3	43.5	51.3	30.9	35.0
Gairs S.C.C.	3,4 crop	57.2	56.3	-	-	-	-
Gairs B.F.	2 crop	-	56.7	-	-	-	-
Gairs B.F.	1 crop	55.5	52.0	43.5	51.0	32.9	36.4
Hairney Law/Auchope S.C.C. x N.C.C.	All ewes	55.2	59.9	46.7	50.4	34.8	34.9
Park Law N.C.C.	All ewes	56.3	59.3	50.4	43.9	31.1	31.3
Alderhope B.F.	All ewes	56.0	57.6	52.7	54.5	34.7	36.0

TABLE 4

Wether Stock at November 1977

Year of Birth	1972	1973	1974	1975	1976	1977
S.C.C.	32	27	29	23	30	30

TABLE 1

Reconciliation of Ewe Numbers 1975-76

Ewes and Gimmers Nov.1976	Cast Ewes Sold	Deaths	Gimmers brought in	Ewes and Gimmers Nov.1977
460	101	14	129*	474

* Includes 26 gimmers from Sourhope for research work.

TABLE 2

Weaning Percentage

Ewes to ran Nov. 1976	Lambs weaned		
	Number	Percentage 1977	Percentage 1976
379 regular hill stock	400	105.5	126.6
81 BF & BF x East Frieslands (Research programme)	53	65.4	-

E. RED DEER FARM
SUMMARY OF HERD RECORDS 1976/77

TABLE 1

Reconciliation of Stock Numbers 1976-77

Stock	No. at 1.10.76	Additions				Reductions			No. at 1.10.77
		Age Transfer		Calves Born	Purchased	Deaths	Sales	Age Transfer	
		Stags	Hinds						
Mature Stags	11	4	-	-	-	-	1	-	14
Mature Hinds	99	-	49	-	-	5	4	-	139
Prickets	6	4	-	-	-	1	3	4	2
Jinnocks	49	-	43	-	-	-	-	49	43
Young Stags	6	29	-	-	-	2	25	4	4
Young Hinds	44	-	3	-	-	1	-	43	3
Stag Calves	44	-	-	52	2	28	10	29	31
Hind Calves	6	-	-	55	-	15	40	3	3
Haviers	1	-	-	-	-	-	1	-	0
	266	37	95	107	2	52	84	132	239

TABLE 2

Reproductive Performance of Herd

Herd	Hinds to Stag	No. of Calves Born	No. of Calves born Dead	Calves Died Birth to Wean.	No. of Calves Weaned	% Weaned
Main Farm	95	75	0	7	68	71
Upper Farm	84	32	2	15	15	17

TABLE 3

Liveweights of Breeding Hinds (Nos. in brackets)

MAIN
FARM

Hinds Born	Weight (kg) Sept. 1976	Weight (kg) March 1977	Weight (kg) Sept. 1977
1970	81.00 (6)	83.2 (5)	83 (6)
1971	80.79 (43)	78.2 (44)	77.8 (41)
1972	77.33 (23)	74.5 (23)	77.7 (22)
1973	71.90 (20)	64.6 (22)	70.5 (21)
1974 (1)*	63.08 (10) [†]	58.9 (22)	65.6 (21)
1974 (2)	65.46 (26)	57.2 (26)	74.2 (26)
1975 (1)	63.05 (17)	53.9 (19)	71.7 (19)
1975 (2)	58.68 (16)	52.3 (16)	67.8 (16)

[†] 10 hinds from this group escaped from the farm on 20/9/76 and were recaptured on 12/1/77.

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

TABLE 4

Weaning Weights of Calves (kg) - Nos. in brackets.

Sex	Sept. 1976	Sept. 1977
Stag Calves	38.12 (47)	32.6 (29)
Hind Calves	33.17 (23)	29.8 (36)