SCOTTISH HILL FARMING*

By THE RT. HON. SIMON RAMSAY, M.C.,
16TH EARL OF DALHOUSIE

WHEN the last War broke out and the German submarine fleet blockaded this Island, everything that was imported was paid for in blood. Imports were restricted to the barest necessities, including those of food. As the blockade intensified, it became clear that the products of home farming must be vastly increased or we would face starvation. Thus it was that the largest and oldest of our industries was set on its feet. Nor did the end of the War also end the need for producing home grown food. On the contrary, it left Britain at so great a financial disadvantage compared to other countries that she was forced to continue the restriction upon her food imports. This state of affairs has persisted more or less unchanged until to-day.

So it is that we in Scotland have had some fourteen years in which to put our farms in order. This included increasing soil fertility so as to carry more stock and to grow larger and better crops, and, where conditions permitted, actual land development. As far as the old established low ground arable farms are concerned, there was nothing very much to be done by way of development. In fact in this type of farm, development has played very little part, and only a considerable intensification of stocking and cropping has been possible. There is no doubt, to give them their due, that these more favoured farms with their reserves of fertility and their easily managed fields have, by increased production, successfully borne the main burden of the country's demands. It is, however, to the poorer farms of the hills that the student of development must turn for interest. It is about these farms that this article is written.

In discussing land development for the Scottish Highlands, it is as well to remind ourselves briefly of conditions there before the Industrial Revolution began to draw the population from the Glens, as this will give some kind of background to the study of the work being done to-day. Besides, some of what we now pride ourselves in calling development might be described better, in many cases, by the word re-development.

It is difficult to get a very accurate picture of life in the Highlands in those times, times say up to a little more than a

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hundred years ago. There are few written records on this subject, and most information comes from actual remains on the ground. No traveller in the Highlands can have failed to notice the innumerable tumble-down walls. There are walls of all kinds, stock enclosures of all shapes and sizes, lime kilns, whisky stills, and human dwellings. There are long walls, short walls; but every wall is of uncut stone. One thing is sure, whatever we do to-day, we will not leave a record of this kind to posterity, if for one reason only, we could not do so if we tried, for dry-stone dyking is virtually a lost art.

As well as the walls, the traveller will have noticed the old ridge and furrow meadows, usually areas of not more than one or two acres and often occupying a favoured site on the lower slopes. The ridges are mostly eight to ten yards from crest to crest and represent, no doubt, the earliest kind of land drainage. No one generation was responsible for creating the ridge and furrow systems. Doubtless much of the work was carried out in very early times, and in many cases ridge and furrow work is associated with the monasteries.

At all events, there is plenty of evidence that not so long ago the Scottish hills and glens supported a large population compared with what we see to-day. For instance one area of about 15,000 acres of hill and perhaps 200 acres of permanent grass and arable, which a hundred and fifty years ago was populated by ninety souls, to-day has nine living on it. Another of about 5,000 acres of hill grazing and 200 of natural pasture on a glen floor formerly maintained three families. To-day no-one lives there except a shepherd in the summer.

The farmer of those days certainly had the advantage of man power. To-day we have machinery, manures, improved stock, scientific knowledge and the help of the State. Things unheard of then, but there can be little doubt that this considerable man power advantage did enable our forbears to give detailed care and attention to the work they undertook. Just the kind of care modern costs prohibit. There is a not uncommon, and to be hoped temporary, fashion which tends to gloss over the work of the early hill farmers, and to suggest that it is of small significance to-day. There is no doubt, however, that the heritage these hardy and persevering men have left us is very considerable. They laid the foundations of our sheep and cattle stocks, and created the best of our hill pastures. Time has certainly enabled those who followed to improve the stock; but the pastures in many cases have been allowed to

deteriorate. Bracken and rushes have gradually crept in on much of the old ridge and furrow ground, and although, as we shall see, much work is now being done to improve grazing, many of these areas still remain to be restored.

Besides the national need for increased production, there is another factor that makes it so necessary to put our hill farms in order. It is that by doing so we are making one of the greatest contributions we can to solving what is now loosely known as the Highland problem. To improve the living conditions and revenue of hill farms and crofts of all kinds and sizes is one of the things that can be done to attract people back to the glens, and to prevent others from leaving them. Naturally no-one imagines that the Highlands will again see the weight of population of former days. For whatever improvements take place, the ground there is not rich enough to support so many under modern living standards. At the same time it is well worth providing a livelihood for as many families as possible, if for no other reason than the fact that the Highland environment, like none other, can bring peace and happiness to the restless soul of man.

Although, as part of the national war effort, production of hill farms was greatly increased in war time, it was not until 1946 that the British Government showed their determination to increase further the production of meat from these areas, and the first British Hill Farming Act was passed through Parliament. This Act arose out of a Report by the Committee on Hill Sheep Farming in Scotland and the provisions of this Act were based on the recommendations of that Committee.

The type of land to be improved, in the Act's own words, was limited to "Mountain and Heath land which is suitable for use for the maintenance of sheep of a hardy kind or which by improvement could be made so suitable." The emphasis in the Act was primarily on hill sheep and hill sheep land, and cattle were considered as complementary to sheep grazing from the point of view of their benefit to sheep stocks by eating down the roughness to many grazings, thus making these more suitable for sheep grazing.

In 1951 the emphasis was changed to include hill cattle by the passing of the Livestock Rearing Act 1951. This Act extended the provisions of the Hill Farming Act by defining the eligible land as follows:—

> "Land situated in an area consisting predominantly of mountains, hills or heath, being land which is, or by improvement could be made,

suitable for use for the breeding, rearing or maintenance of sheep or cattle, but not for the carrying on, to any material extent, of dairy farming, the production, to any material extent, of fat sheep or fat cattle, or the production of crops in quality materially greater than that necessary to feed the number of sheep or cattle capable of being maintained on the land."

Thus the scope of the scheme was widened to include not only the purely hill grazing; but also the upland marginal farms adjoining the hills and mountains, which were primarily suitable, in view of their location, for the rearing of store cattle and sheep. This involved the inclusion of areas of arable land, traditionally cropped in rotation of crops, for the production of hay, straw, turnips and other fodder crops, designed essentially for winter keep. Certain minor changes were made in the eligible improvements which could rank for grant aid, but in the main these remained the same as originally laid down by the Hill Farming Act.

The two main provisions of the Act were first that grants of 50% of the approved cost of all eligible items are payable on completion of each item of improvement, and secondly, that to be eligible a scheme should include all items of improvement which are necessary to make the farm, after completion of the scheme, a fully productive one.

There are a total of twenty-three separate types of improvements which are included in the Act. These are as follows and may be divided into two separate categories:—

A. Improvements designed to bring the fixed equipment of the farms to a sound tenantable condition:—
   1. Erection, alteration, enlargement or reconditioning of farm buildings.
   2. Erection, alteration, enlargement or reconditioning of farm houses.
   3. Erection, improvement or reconditioning of farm cottages.
   4. Making or improvement of roads or bridges, etc.
   5. Making or improvement of water supplies for farm or domestic purposes.
   6. Supply of electricity.
   7. Provision or improvement of dipping facilities.
   8. Provision or improvement of pens, etc. for sheltering, gathering, marking, dipping, etc.
   9. Provision or improvement of silos.
   10. Making of permanent fences.
   11. Restoration or improvement of permanent fences, etc.

12. Provision of cattle or sheep grids.

B. Improvements designed to increase the production of cattle and sheep from the holding:—

13. Drainage—Hill, Tile, etc.
14. Reclaiming of waste land.
15. Establishment of shelter belts.
16. Liming of land.
17. Application of artificial manures to land.
18. Laying down of permanent pasture.
19. Reseeding and regeneration of grazings, etc.
20. Removal of bracken, whins, gorse, etc.
21. Heather burning or muirburn.
22. Provision of implements, etc.
23. Pest destruction.

An applicant desiring to rehabilitate an old derelict grazing or to equip completely a hitherto undeveloped area of, say, deer forest may include works under all of the above schedules where these are applicable to his purpose, and he may elect to develop his property over any reasonable period of time—say years, if he so desires to programme his expenditure.

The following is a typical hill land improvement scheme. Imagine an area in, say, the hills of Perthshire or Angus on the slopes of the Grampian Mountains, rising from the bottom of a Glen at 750′ above sea level to about 3,500′ at the top, and including two or more hills. There might be 150 acres of poor arable land, with a further 100 acres of permanent pasture below the hill dyke, and 4,000 acres of rough grazing rising from 1,000′ to 3,500′.

The arable land will be typical of many of our Glen floors and lower hill slopes, varying from a medium loam in the best fields to a thin stony loam in the higher arable fields. Normally such land is deficient in both lime and phosphates and produces relatively poor crops of oats, hay and turnips. The permanent pasture may be of the agrostis fescue type with only struggling plants of clover. Here lime and phosphate deficiencies are usually evident in the appearance of the herbage, particularly in the absence of cocksfoot, rye grass, white clover and meadow grasses.

The rough grazings may or may not be fenced on the march; but usually the boundary fence commences at the lower areas, and the further out boundary is unfenced on the high tops. It is on the rough grazings that the greatest variations of the herbages takes place. Usually the lower slopes near the low

hill dyke have areas of mineral soil, carrying white or green herbage of the fescue agrostis type, which are fairly productive of a green bite for stock during the summer, but which are bleached white by the winter rains and frost. These green areas may be mixed with strips of heather on the harder or even the peatier areas, but the heather areas become increasingly predominant from the 1,000′ to 1,500′ levels. Above 1,500′ to 2,000′ the heather becomes increasingly dwarfed and eventually gives way to white molinia and nardus herbage.

The management and production of a ewe stock of, say, 900 ewes under such conditions is, therefore, dependant on one vital consideration—the production of winter keep growing naturally on the hill. Fencing, however, particularly the fencing of an area of hill where the herbage can be encouraged to produce its maximum growth during the summer and which can be reserved for winter grazing, is a prime consideration. This will entail the fencing of, say, 600 acres of the lower hill to farm a hill lambing and wintering ground. Inside this enclosure the heather will be burned on a very short rotation, perhaps over five to six years, to keep it always vigorous and fresh. This is well worthwhile, since young vigorous heather recovers very quickly, even in one season, because of the abundance of fertile seed it leaves behind in the soil or peat. Only young heather will produce sufficient seedlings to make this possible, and old ten year heather will usually regenerate itself from the root, a process taking more than twice as long as regeneration from seed.

The white areas may be limed and manured with phosphate manures to stimulate the growth of the more productive grasses. Seeds may even be harrowed into the soil, thus producing a bigger bulk of leafage. All the wet areas and bogs within the lambing ground will be carefully drained out and in a few years time the herbage within the area will be greatly changed and become much more productive.

On the hill proper, drainage will produce drier and safer areas for sheep. The heather will be burned on a rotation from anything from five to ten years until a continuity of vigorous, blooming and seed producing heather has been established. This burning should be carried out in such a way as to insure that there is plenty of heather in various stages of growth, and that the patches burned are in regular small strips throughout the hill to promote uniform grazing. In this way, there will be produced on the 1,000′ to 1,500′ level

an abundance of green shoots which are so vital for green winter food for sheep.

Areas of draw moss or the lesser cotton grass, usually damp, will be very lightly drained to preserve this very valuable plant which is so useful in early spring.

Above the heather on the molinia and nardus grazings very little other than occasional burnings can benefit this type of pasture, which is productive of keep for short periods in summer only; but the dangerous peat bogs may be drained making this area safer for stock. The grazing of this type of pasture with Highland cattle will, of course, reduce its coarseness and make the herbage palatable for sheep for much longer periods, and it is here that these beautiful and hardy cattle may be found for long periods in mid-summer.

The creation of a larger and more productive low hill, separately fenced, will have a vital influence on a sheep stock; for it will promote several changes in management designed to influence the lamb and wool crops. In October the ewes can be brought down and given a ten days' run on this fresh keep, which has been very lightly grazed all summer, and this beneficial change before bringing the ewes to the tup will do much to insure a full crop of lambs. After a short period, the ewes will be turned out to the hill again with the tups and will only come down for keep in severe storms, so that the area may be preserved as clean ground for lambing.

The area of permanent pasture could doubtless all be reseeded and sown out with more productive grasses and clovers after generous treatment with lime and phosphates, thus creating that essential reserve of productive keep for a winter storm and additional clean lambing ground. This area will be grazed during summer by the tups and the cows and calves which are wintered on the arable crops of hay, turnips and straw, although grass silage is now taking an increasingly prominent part in replacing the more costly turnip crop. It is, therefore, on the permanent pasture, where the ewes can be brought to a more sheltered situation, that hand-feeding may be given in the event of a severe storm.

When lambing time comes round, the ewes can be gathered into the enclosed low hill and lambed there on clean ground and the value of an early fresh bite of grass at this time on which to graze the ewes after lambing cannot be over-emphasised, for fresh keep is so necessary to promote a flow of milk for the young lamb.

It is at this time that the improved low hill and the reseeded permanent pasture pay handsome dividends in producing plenty of milk on the ewe and thriving, vigorous lambs, for much of the disease and unthriftiness in our hill flocks is caused by nothing more than malnutrition. A week or so after lambing the ewes and lambs, now strong enough, will be gradually herded out on to the hill grazing on which fresh growths are now appearing, all the fresher for the absence of the flock during lambing. Ewes with twins, or the weaker and thinner ewes, will be grazed down on the lower hill and permanent pasture; the remainder of the flock will not be allowed on the low hill until tupping time comes round again.

Thus, as a result of the improvements, made financially possible by the provisions of the Hill Farming and Livestock Rearing Acts, some spectacular increases in production have even now been recorded on the hill farms. On one farm, originally carrying a flock of 400 ewes with a lambing percentage not much over 75% to 80%, the ewe stock has been increased to 500 with a lambing percentage of 120%. This has been due to the gradual formation of a lambing ground adequate in size, and the reseeding of some 80 acres to very productive first-class pasture with generous applications of lime and manures. In this case the lamb crop has increased in ten years from 320 to over 600; and the saleable surplus of lambs from 220 to 480—more than 100%. Apart from this, the size and condition of the lambs has been greatly improved.

The arable land will, of course, simultaneously receive attention. As a result of a soil analysis the lime and phosphate deficiencies will be made good and a proper system of manuring introduced and practised. Seed oats will be changed more frequently, and more productive grass seeds mixtures grown. Thus yields will tend upwards enabling more cattle to be successfully wintered and making more dung, and so an improving cycle of increased fertility will be set in motion until the stocking and cropping has reached saturation.

The stocking of an increased cattle stock will enable the improved low hill and the improved permanent pasture to be properly but not too heavily grazed for the production of that desirable winter keep for the ewes. Thus both the arable and the hill will be made complementary to each other.

So much for the production end of the scheme. The fixed equipment will doubtless receive due attention. The road may be resurfaced and made passable for vans, etc; the

byres converted into reeds to make the labour of feeding easier and more productive; piped supplies of water brought from hill springs to the farmhouse, cottages and steading; the cottages renovated and possibly enlarged to provide bathrooms and inside sanitation with hot and cold water. Electricity may be introduced to all housing and buildings, and all the fixed equipment brought to a tenantable and serviceable condition.

Under the Hill Farming Acts, out of the total of some £4,850,000 of approved expenditure, it is interesting to note that nearly £2,100,000 or 43.8% has been spent on farm buildings, houses and cottages. Such proportion as has already been spent has proved thoroughly worthwhile and has gone far to help in the achievement of the original object.

Generally speaking there is no doubt that this expenditure is to prove a valuable national investment as well as being a boon to all occupied in hill farming. In addition it is to be hoped that the people of this country will, as a result, continue to enjoy an ever increasing supply of home grown beef and mutton.