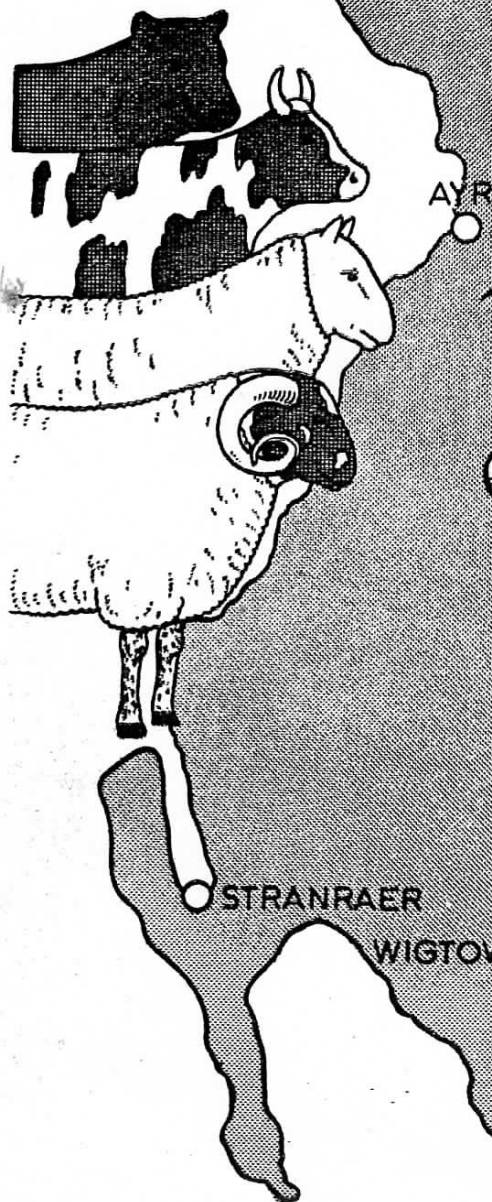


NOVEMBER

1962

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Journal
of the
South West
Scotland
Grassland
Society



DUMFRIES ○

○ CASTLE
DOUGLAS

○ STRANRAER

○ WIGTOWN

○ KIRKCUDBRIGHT

No. 1.

JOURNAL OF THE SOUTH WEST SCOTLAND

GRASSLAND SOCIETY

(AFFILIATED TO THE BRITISH GRASSLAND SOCIETY)

Vol. 1, No. 1, October 1962.

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Wigtownshire

F.R. EVANS, Penkiln, Garlieston, Tel. Garlieston 221.

T. MCFADZEAN, Brightside, Ardwell, Stranraer; Tel. Ardwell 47.

JOHN THORBURN, College Office, National Commercial Bank Buildings,
Bridge Street, Stranraer, Tel. Stranraer 200.

Co-opted Members

PROF. D.S. HENDRIE, Principal, West of Scotland Agricultural College,
6 Blythswood Square, Glasgow C.2. Tel. Glasgow
City 5211.

A.E. PARKINSON, Director of County Advisory Service, West of Scotland
Agricultural College, 6 Blythswood Square, Glasgow
C.2. Tel. Glasgow City 5211.

ALEX. REID, Diddup, Saltcoats, Ayrshire, Tel. Ardrossan-Saltcoats 639.

SOUTH WEST SCOTLAND GRASSLAND SOCIETY

List of Officials June 1962.

- CHAIRMAN - IAN JENNINGS, Shiel, New Galloway, Kirkcudbrightshire,
Tel. Dalry (Kirks.) 252.
- TREASURER - DR. M.E. CASTLE, Hannah Dairy Research Institute,
Kirkhill, Ayr, Tel. Prestwick 77292.
- SECRETARY - I.V. HUNT, Grassland Husbandry Department, West of
Scotland Agricultural College, Auchincruive, Ayr,
Tel. Annbank 234 (office), Prestwick 78288 (home).

MEMBERS OF COMMITTEE

Ayrshire

- DR. ROBT. LAIRD, College Office, 20 Miller Road, Ayr, Tel. Ayr 64627.
- R.W. MONTGOMERIE, Lessnessock, Ochiltree, Tel. Ochiltree 226.
- WM. YOUNG, Skerrington Mains, Hurlford, Kilmarnock, Tel. Kilmarnock 268.

Kirkcudbrightshire

- JAMES BIGGAR, Chapelton, Castle Douglas, Tel. Haugh of Urr 208.
- N.P. MACLAREN, The Leaths, Castle Douglas, Tel. Castle Douglas 2151.
- IAN W. MITCHELL, College Office, 82 King Street, Castle Douglas,
Tel. Castle Douglas 2743.

Dumfriesshire

- ALISTAIR CAMPBELL, College Office, 43 Whitesands, Dumfries, Tel.
Dumfries 4174.
- J.D. BALLANTYNE, Tinwald House, Dumfries, Tel. Amisfield 221.
- J.G. MARSHALL, Hardgrove, Carrutherstown, Dumfries, Tel. Carrutherstown
209.

Editorial Note

This first number of the Journal of the South West Scotland Grassland Society has largely been devoted to recording items concerned with its foundation.

Room will be found in future numbers for contributions of interest to members.

Samples of what might be suitable have been included in the hope that members will support the journal by their own contributions - suggestions for programmes, opinions, articles, criticisms, queries, poems, tales and anything will add to the interest of the journal.

The next number could contain:-

1. "Reviews of Present Day Research".

Contributions by members of staff of the Agricultural College and the Hannah Institute in which recent published scientific work is examined and printed not as a precis or abstract but as an interpretation or explanation of the importance of the authors conclusions.

The Secretary can lend copies of the original articles to members who might like further information. The reviews can also form the basis for discussion meetings of members arranged on a county basis.

2. "On Tour".

Members who are fortunate enough to spend some time abroad or in Britain on holiday or on business trips may care to provide accounts of the interesting things which they have seen.

3. "For and Against".

Hardly any action is possible on a farm which meets with universal approval. Farmers and others are invited to express their opinions for or against these controversial matters. What about the following for a start:-

'Topping Grassland'
'Arable Silage'
'Gang Mowing'
'Supplementary Feeding at Grass'
'Liming of Pastures'

'Dunging Grassland'
'Saving Liquid Manure'
'White Clover'
'Cocksfoot'
'Irish Ryegrass'
'Ayrshire Beef'.

4. "On Record".

Reports of the activities of the Society and individual members of lectures, discussions, competitions and the farm visits.

5. "Casebook".

From the very title of our Society, we are interested in grass because it is the basis of successful farming in the west. One of the easiest methods of progress is by following the examples set by some of our own members. Case histories of members farming activities are requested.

6. "Focal Centres".

There are probably many more than 100 colleges, institutions, experimental farms and similar institutions in Britain concerned with improving British agricultural production and efficiency. Members who have visited these places are invited to report on what is being done of interest to farmers in the South West of Scotland.

7. Articles on any subject by anybody, describing experiences, experiments, opinions, gadgets etc.

From the Editor, Scots Farmer, Vol. 1, 1763.

"I take not the least offence at inaccuracies in style and physical knowledge when I peruse the writings of downright yeomen and farmers. Such a plain practical author pays his little contingent to the republic of knowledge with a bit of untamped real bullion, whilst the vain glorious man of science throws down an heap of glittering counters, which are gold to the eye, but lead to the touchstone".

This is how it all began

6th - 8th December, 1961.

At and immediately after the Winter Meeting of the British Grassland Society, Dr. Castle and I.V. Hunt discussed the possibility of forming a Regional Grassland Society in the West of Scotland. From then until the 20th February discussions were held with Principal Hendrie, Dr. J.A.B. Smith and members of the County Advisory Service.

The following conclusions resulted from these meetings.

1. That if there was to be a Grassland Society, it should be as a result of a need shown by farmers and that its direction should largely be by farmers.
2. Both the West of Scotland Agricultural College and the Hannah Dairy Research Institute would give any technical assistance called for.
3. That the decision whether to form a Society be made at as big a meeting of farmers possible, brought about by staging a demonstration in the spring on some topic of interest. At this meeting a farmer, preferably Mr. Watt Taylor, Chairman of the North of Scotland Grassland Society, should be asked to speak on the subject of Regional Grassland Societies.

May 31st, 1962 was the first date selected but this proved unsuitable for Mr. Watt Taylor and the date was fixed at June 14th. A preliminary letter was sent to farmers who might be interested.

The following is a copy:-

THE WEST OF SCOTLAND AGRICULTURAL COLLEGE
THE HANNAH DAIRY RESEARCH INSTITUTE

Proposed Grassland Society
For the Counties of Ayr, Dumfries,
Kirkcudbright and Wigtown

Since the War years, Grassland Societies - designed to foster the improved production and utilisation of grass and usually affiliated to the British Grassland Society - have been set up in many parts of

England and Northern Ireland. Recently such a Society was formed in the North of Scotland and is already proving a most successful venture.

We, the undersigned, believe that the formation of a Grassland Society for the four south-western counties of Scotland would serve a useful purpose and we are circulating this letter to farmers in the area who are well known for their skill and enthusiasm in this important branch of farming. The Society, like its counterparts elsewhere in Britain, is intended primarily to be set up by and run for farmers; but we shall be happy to see that all possible assistance is given by the advisers and scientists of the two institutions in question. The normal practice for such Societies is to arrange a small number of discussion meetings in winter and one or more visits to farms in the summer; but the programme is a matter for the Society to settle and there is much scope for originality and variety.

As we would like to know if there is likely to be sufficient support to enable a Society to be formed, a grassland demonstration will be held at the College and the Institute on Thursday, 14th June, 1962. At the close of this demonstration, there will be a short indoor meeting at which further information will be given by the Chairman of the North of Scotland Grassland Society - Mr. A. Watt Taylor - who is himself a farmer with the highest reputation in grassland husbandry. Those present will then be invited to adopt a suitable constitution for the Society and to become its Founder Members.

Details of the programme and of the draft constitution will be circulated in due course. In the meantime, we shall be grateful if each recipient of this letter will discuss the proposal with his County Adviser and we hope that those interested will keep the date (14th June next) free.

The proposals seemed to be favourably received and plans went ahead for the demonstration which was to comprise two parts; silage — dealt with at the Hannah Dairy Research Institute and hay — at the West of Scotland Agricultural College Farm, Auchincruive.

When all plans were made, invitations were sent to a large number of farmers in the four southern counties, Ayrshire, Kirkcudbright, Wigtown and Dumfries. Copies of this literature are shown below.

The West of Scotland Agricultural College
The Hannah Dairy Research Institute

Proposed Grassland Society
For the Counties of Ayr, Dumfries,
Kirkcudbright and Wigtown

Since we last wrote to you arrangements have been completed for the Grassland Demonstration to be held at Auchincruive and The Hannah Dairy Research Institute on 14th June, 1962. We have pleasure in sending you the invitation programme and we seek your co-operation in asking you to complete and return the enclosed postcard. Please note that picnic lunches are available at 5s. per head.

As you know, it is proposed that the meeting at the close of the Demonstration should consider the formation of a local Grassland Society, and if sufficient interest is shown in this matter, those present will be invited to adopt a constitution for the Society and to become its Founder Members. We are, therefore, enclosing a copy of a draft constitution which, subject to amendments by the meeting, would be suitable for this purpose.

Both the above letters were signed on behalf of the College by D.S. Hendrie, A.E. Parkinson and I.V. Hunt and on behalf of the Hannah Dairy Research Institute by J.A.B. Smith and M.E. Castle.

The draft constitution suggested by the British Grassland Society was included with this correspondence and does not differ very much from the constitution finally adopted and printed elsewhere

in this journal. The chief alterations made were as follows:-

Clause 1. The name of the society was included.

Clause 4(iv). Originally this set a limit of 25% on non-farming members.

Clause 6. Instead of nine committee members it was decided to have twelve, three from each county. The number of meetings to be held per year left unfixed instead of a minimum of four as suggested in the draft minute.

PROGRAMME

THE HANNAH DAIRY RESEARCH INSTITUTE
KIRKSHILL - AYR

Assemble at the Farm Steading - The
Hannah Institute

10.00 am. Welcome Dr. J.A.B. Smith
10.15 am. Silage Making Dr. M.E. Castle & staff
12 noon Proceed to Auchincruive

THE WEST OF SCOTLAND AGRICULTURAL COLLEGE
AUCHINCROIVE - AYR

12.30 pm. Lunch

Assemble at Gibbseyard, Auchincruive

1.15-3.00 pm. Hay Making Mr. J.M. Thomson & staff
3.15-4.15 pm. Meeting (New Building, Chairman:
Auchincruive) Professor D.S. Hendrie
Speaker:
Mr. A. Watt Taylor
Chairman, North of Scotland
Grassland Society

Reply cards included with this literature were returned by 175 farmers and it was obviously going to be a successful meeting.

Originally, about 50 - 60 farmers were expected and arrangements to accommodate 100 were considered adequate. It was soon obvious that our ideas had to be altered. This involved moving students sitting examinations from one big room to two or three smaller ones.

The season played a few tricks with the arrangements for the demonstration. Most grass crops were backward, but a fine spell of weather before the demonstrations allowed both the Hannah and Auchincruive to get on with their hay and silage making, and it went against the grain to pull back on the work. The field of hay set aside for the Auchincruive part of the demonstration was whittled down to about an acre by June 14th.

SOUTH WEST SCOTLAND GRASSLAND SOCIETY
FOUNDATION DAY

The weather was not promising, especially for demonstrating the advantages of wilting grass before making hay or silage on what might well be a memorable day in the history of the agriculture of South West Scotland.

Sixty to seventy farmers were expected. By the previous day nearly two hundred had indicated their intention of joining. On the day itself about two hundred and fifty attended the demonstration on the morning and early afternoon, whilst slightly less than the number were able to sit through to the inaugural meeting and sign the roll as Foundation members. Dr. J.A.B. Smith welcomed the party to the morning's demonstration at the Hannah Dairy Research Institute where the theme was "Better Silage". Dr. Reid demonstrated crops of Combi, Tetrone and E.F.486 Italian Ryegrass and the effects of 2 and 4 cwt. of nitrogenous fertiliser on production. Mr. J. Watson showed the party how to wilt grass and pick it up neatly. Mr. Drysdale provided an interesting exhibit on Lucerne and dealt with grassland management. Dr. Castle and Mr. R.H. Alexander were at the silo dealing with filling and the feeding value of the product. A picnic lunch was provided at Auchincruive, The West of Scotland Agricultural College farm; this was followed by a description of the place of haymaking by barn drying in the College Farm policy.

Visitors were shown over the barn drier, the hay-making machinery and a fine crop of Timothy/Meadow Fescue, yielding four tons of made hay per acre, by Mr. James Thomson, Mr. Kenneth Hall, Mr. I.V. Hunt. An alternative system of drying hay using the Lister outfit was demonstrated by Mr. R.D. Mathews.

The inaugural meeting of the Grassland Society began at 3 o'clock with an outline of the objectives by the Chairman, Principal D.S. Hendrie. He introduced Mr. J. Watt Taylor, Chairman of the North of Scotland Grassland Society who described the working of their society and indicated the benefits obtained from such a Society. It could be a meeting place where farmer and scientist could hammer out their problems to advantage. Principal D.S. Hendrie was given ample evidence of the desire to form a Society and presented a draft constitution for discussion. The constitution as finally adopted is shown on pages 28 - 30 of this journal. Discussion centred mainly around the method suggested for paying subscription, some farmers objecting to payment by Bankers Order being made obligatory. After some discussion, the view that Bankers Orders were a much more convenient method of collecting subscriptions prevailed, the committee being asked to consider the matter and report back at the next Annual General Meeting. The clause on composition of the committee was also modified from the draft. The essence was that membership of the Society is open to any practising farmer in the counties of Ayrshire, Dumfriesshire, Kirkcudbright and Wigtown and to technical and commercial people with grassland interests, up to 25% of the total membership.

Mr. Ian Jennings, The Shiel, New Galloway was elected Chairman, Dr. Malcolm Castle, Treasurer and Mr. I.V. Hunt the Secretary. A committee was also elected as listed on pages 1 & 2.

Mr. Findlay, Rainton, Gatehouse and Mr. Alex. Smith, Gotterbie, Lockerbie, proposed and seconded the adoption of the Constitution and the Society came into being, a lusty child of around two hundred members.

RESEARCH REVIEW

Millions of words are written every year by agricultural scientists and experimenters in the scientific journals. The aim of this series of notes is to briefly comment and report on the latest findings. Copies of the original articles may be borrowed and queries about them raised either by letter via the Secretary or by a reader's query printed in future numbers of this Journal.

One word of caution should be uttered. Each abstract or review will be concerned with a single author's conclusions about his own experience. His conclusions may not apply to your own farm. One of the disconcerting features of the conclusions of agricultural scientists is that they are rarely unanimous. The abstracts will be numbered consecutively and correspondents need only mention this number.

The first 12 reviews are from the Journal of the British Grassland Society Vol 16 No 1 published in March 1961.

1. The effect on the soil of the components and management of a ley.
by Arthur Troughton, Welsh Plant Breeding Station, Aberystwyth.
pages 1-5

This article answers the following questions often put by farmers interested in using a ley to maintain the fertility of the soil:-

- a. Which grass gives the heaviest root crop? Many people think that cocksfoot is the most useful but Dr. Troughton shows that perennial ryegrass is better. The amounts are high, reaching 5 tons per acre in the top 3" of soil, a further 2½ tons in the 3-6" layer and about ½ ton from 6-9". It is obvious that grass roots lie very close to the surface.
- b. Which management gives most roots? Surprisingly enough, management did not have as big an effect as expected. The highest root content was obtained by grazing very hard in the Autumn. Less grazing in the spring and summer gave more root per acre than any other system of grazing or haying.

I.V.H.

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2. Farmers' reasons for not adopting controversial techniques in grassland farming.
by D. Sheppard, Central Office of Information.
pages 6-13

By analysing farmers replies to a survey covering 446 farms in England and Wales, Mr. Sheppard is able to give reasons why farmers who could, as far as an adviser sees, benefit from:

- a. keeping sheep on a dairy farm
- b. make hay on tripods
- c. make silage
- d. use controlled grazing or
- e. use fertilisers

actually does not take up these practises.

The reasons have nothing to do with the value of the technique, but merely an inborn dislike of 'new' ideas and a stubborn resistance to any practise that calls for a 'change'.

These are hard words, and it must be remembered that the conclusions are based on the views expressed by a majority of all farmers, not by a selected few obviously progressive farmers.

I.V.H.

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3. The productivity of land and feed used for livestock production in Britain compared with Belgium, Denmark and the Netherlands.
by T. Kempinski, Agricultural Economics Dept., Manchester University.
pages 14-22

How competitive is British livestock production? With different prices, different money values and subsidies operating a clear picture is not easily obtained. It seems however that in 1953/54, the years used for these calculations, British costs of production were about double those of the continental countries.

The reasons:

- a. Inefficient conversion of feed, especially imported concentrates. This was evident even in pig and poultry feeding where other feeds are not important.
- b. Low average milk yields quoted as 627 gallons per cow in Britain against for example 820 gallons in the Netherlands. For this reason alone, a British cow needs 12% more Starch Equivalent to produce a gallon of milk.
- c. British yields of wheat, barley and oats are lower than on the continent. yields of grass per acre are not so easily determined let alone compared, but adopting 'Grassland Recording' methods the continent would be marked as follows:
Netherlands 100%, Denmark 84%, Belgium 79% and Britain 65%.
A further article on this topic by Kempinski will be reviewed later.

I.V.H.

4. Intervariety variation in Rhodes Grass (*Chloris gayana*).
by E.M. Hutton, Division of Tropical Pastures, Brisbane, Australia.
pages 23-29

This article is of no interest in South West Scotland.

I.V.H.

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5. Studies in calf management. Part 3. The rearing of autumn born calves at pasture.
by D.T. Chambers and F.E. Alder, Grassland Research Institute, Hurley, near Maidenhead, Berkshire.
pages 30-36.

Autumn born cross calves from dairy herds are a glut. Can they be cheaply reared on grass over the winter? It is known that spring born calves can be reared at pasture but what about doing the same thing with poor quality winter grass. Each winter from 1956 to 1958 attempts have been made with a series of cheap supplementary feeds to accomplish this.

In all, 32 calves were reared outdoors with practically no shelter. 4 died but 3 of them from causes nothing to do with the outdoor grazing. They developed shaggy protective coats, and did not appear worried by the weather. Steady growth was maintained and subsequently, they did well on grass and fattened for slaughter without showing any ill effects. The various diets provided were:-

- (a) Before weaning. Multiple suckling indoors. Bucket fed indoors given milk substitute and calf meal plus hay. Bucket fed outdoors and given milk substitute, and hay but no calf meal. Early weaning indoors, with milk substitute, calf pencils and hay. Early weaning outdoors with the same feeds but having access to pasture. Feeding with calf pencils, calf meal, ground oats, low protein meal and high protein meal at this stage was of little benefit.
- (b) After weaning. The calves were all carried on grass and given a daily feed of 4 lb calf meal, or oat/barley mixture plus 3 lb hay and as much silage as they would take.

The trial successfully proved that it was possible to rear these calves cheaply. It will be realised that winter growth and weather conditions in Berkshire might be more favourable than in the South West of Scotland, where wetness and damage to the grass might make a difference.

I.V.H.

6. The effect of drill width on the seed production of leafy varieties of three grass species.
by H.M. Roberts, Welsh Plant Breeding Station, Aberystwyth,
pages 37-42

Cocksfoot gave higher yields of seed from drills 15-36" wide than from drills 6" wide, and the return from an extra 52 lb Nitrogen (= 3 cwt 15.5% 'Nitro-Chalk') was 29 lb seed.

Meadow fescue gave its best yields at 6-15" spacings, whilst 52 lb Nitrogen gave an extra 40 lb seed.

Timothy gave its best yield at 24" and its poorest at 36" or at 6". It also gave 40 lb of seed for an extra 52 lb Nitrogen.

The differences in yield between the best and poorest drill width was much larger than the extra yield which could be obtained by using the extra fertiliser. Although the seed production of these grasses is not practised in our area, it is an interesting sidelight that the highest yields of these seeds per acre does not necessarily come from thick swards, and that a change of management may give better rewards than merely the use of extra fertiliser. More nitrogenous fertiliser generally increases the stem and leaf weight considerably but has far less dramatic effects on the seed or grain yield.

I.V.H.

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7. The estimation of 'green dry matter' in a herbage sample by the methanol-soluble pigments.
by R.F. Hunter & Sheila A. Grant, Hill Farming Research Organisation,
Edinburgh.
pages 43-45

This is purely a technical problem concerned with trying to estimate available or desirable herbage on hill swards. It is assumed that among such natural herbage it is important to know how much is 'dead' and how much 'alive'. Hand separation of samples takes a long time and Dr. Hunter and his colleague make use of a chemical solvent to extract the green colour and then by estimating the density of this in the solvent is able to calculate what proportions of the original herbage were 'green' or 'dead'.

I.V.H.

3. Some economic aspects of the application of phosphate to permanent pastures in Ireland.
by M. Neenan, W.E. Murphy and A. Conway, Joinstown Castle, Wexford.
pages 46-53

A study of experiments carried out on 34 farms comparing 2, 3, 4 or 6 cwt superphosphate, with and without $1\frac{1}{2}$ cwt muriate of potash and 1 cwt sulphate of Ammonia showed that it was financially worthwhile to use superphosphate alone or in combination with the other fertilisers, since it could affect both quantity and quality of the herbage.

The results were variable from farm to farm and it was found that the best response to phosphate improvement by 30-50% was obtained if the herbage when analysed showed a low phosphate content. On the other hand on farms where the phosphate content of the herbage was satisfactory (0.35-0.40% in dry matter), little benefit was obtained.

Dr. Neenan and his colleagues may have produced a gem here. For many years now, there has been a tendency to decry the need for phosphatic fertiliser. Maybe if instead of soil analysis we used herbage analysis to determine its need and effect there might be a revision of ideas. On the other hand what happens in Ireland does not necessarily happen in Scotland.

I.V.H.

Studies of the growth of a Hyparrhenia-dominant grassland in Northern Rhodesia. Part 2. Fertiliser responses. Part 3. The effect of fire.
by N.R. Brockington, Ministry of African Agriculture, N. Rhodesia.
pages 54-64.

This article is of little interest to Scottish farmers.

I.V.H.

The effect of nitrogenous fertiliser on an established white clover sward.
by D.W. Cowling, Grassland Research Institute, Hurley, Near Maidenhead, Berkshire.
pages 65-68

Many farmers have noted that white clover tends to diminish when a grass/clover sward is heavily fertilised. The cause of this disappearance has been variously ascribed to shading by the grass,

killing of the clover etc. This experiment shows that up to 12 cwt/acre 'Nitro-Chalk' can be applied to a pure white clover sward without affecting the yield up or down. 6 or more cwt per acre causes a reduction in the root nodules of the white clover, the important organs responsible for white clovers ability to feed itself and the soil with available nitrogen. The author concludes that where heavy dressings of a nitrogenous fertiliser are given to grass/clover swards in conjunction with management to keep the clover in, the loss of nodules may make the clover useless in its true role of maintaining fertility. The author has published very many papers on this subject which will be reviewed in later numbers of this journal.

I.V.H.

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11. Differential survival of cultivars of Lolium, Dactylis and Phleum.
by Allen H. Charles, Welsh Plant Breeding Station, Aberystwyth.
pages 69-75

<u>Glossary</u>	Cultivar	=	Strain or variety
	Lolium	=	Ryegrass
	Dactylis	=	Cocksfoot
	Phleum	=	Timothy

What happens to the constituents of a seed mixture in a sward under various managements? That was the question, but before tackling it a method had to be devised to identify some indistinguishable varieties of grass. The following observations were the result.

- (a) The number of plants in a sward falls rapidly to about 10-20% of the sown seed.
- (b) The varieties do not fall at the same rate. Manuring, method of sowing and of using the sward have effects on the rate of death so that quite different swards can result from the same mixture by varying the management. Generally in mixtures of early (e.g. Irish) and late (e.g. S.23) varieties of perennial ryegrass, although the sward might be dominated by the early grass in the first years, eventually the S.23 would take over.

I.V.H.

12. Studies in the Digestibility of Herbage. Part 9. Herbage and Faecal Nitrogen as indicators of herbage organic matter digestibility. by D.J. Minson and C.D. Kemp, Grassland Research Institute, Hurley. pages 76-79

- (1) S.E. = 0.6886 CP + 47.971
(2) D = 59.7 + 5.20 N_H ± 6.17
(3) D = 69.5 + 6.23 N_H - 1.88 M ± 5.02

Dr. Minson, Frank Raymond and their colleagues have published many papers during the last 10 years on the valuation of herbage. All add to our knowledge of how to get more meat from grass, but their main value is in sharpening the tools of the research worker.

For many years, research workers have used Formula 1 above, first published in 1936 by Prof. S.J. Watson, now Principal of Edinburgh College of Agriculture. It suggests that there is a relationship between the crude protein (CP) content of herbage and its feeding value (S.E.). Principally as a result of the work of Raymond and his colleagues this formula has fallen into disrepute. The value of herbage these days is associated firstly with its digestibility, secondly with the energy which can be obtained from the digestible portion and thirdly, a long way behind, the protein content of the herbage. This article examines the results obtained from feeding a collection of 291 different samples of grass to sheep. The digestibility of the herbage, i.e. the weight of grass fed less the weight of dung produced, ranged from 48% to 85%. The grasses were grown from all months April to December and had nitrogen contents of 0.9% up to 5.0%.

Dr. Minson's second formula expresses the relationship between digestibility and nitrogen content. Generally, the digestibility increased with the nitrogen content, but it was found that this did not apply to early spring grass, which might even fall in digestibility with increasing nitrogen content.

The third formula includes the relationship of month of cut. If one knows the nitrogen content of the herbage and the month when the grass grew it is possible with this formula to calculate the digestibility, one of the really important aspects of feeding value. The formula is not however very accurate, and will apply only to certain seasons, and possibly only to the South of England where the grass samples originated. Dr. Minson concludes that the nitrogen content of the herbage is not the main factor controlling herbage digestibility and thus its feeding value.

I.V.H.

THE BRITISH GRASSLAND SOCIETY

by I.V. Hunt.

The British Grassland Society was born on Wednesday 20th June, 1945 at the beginning of a three day meeting involving a tour of the Grassland Improvement Station, Drayton Manor, Stratford-on-Avon, a tour of the Cotswald Sub-Station of the Grassland Improvement Station at Colesborne and calls at four farms on the famed Leicestershire fattening pastures.

The Society was started by the late Professor Sir George Stapledon and Dr. William Davies, now director of the Grassland Research Institute.

Its first membership list totalling 225 names contained 36 members from Scottish addresses, including one of our own committee members, Dr. Robert Laird, College Adviser for Ayrshire.

By the second meeting, the membership jumped considerably and nowadays touches the 1000 mark. Originally, the Society was intended to cater for scientists and advisers interested in grassland and as far as I know contained only one farmer member, Mr. F.H. Garner, who was a farmer for a short time after holding a number of scientific posts and before taking up his present post of Principal of the Royal Agricultural College, Cirencester. He was the President of the British Grassland Society in the past year 1961/62. John Rowsell, a Hampshire farmer was elected the new President last July for the year 1963/64.

Nowadays, the number of farmer members is considerably larger and it is as a direct result of the increase in farmer members of the British Grassland Society that the movement to form Regional Grassland Societies was begun.

The objectives of the Society are similar to those adopted in our own constitution. They are being achieved in a number of ways:-

- (a). By visits of 3 to 4 days to different parts of the country at the invitation of various members, the "Summer Meetings".

After the first summer meeting held in the midlands of England, there has been a summer meeting every year except when a meeting arranged in Reading had to be cancelled owing to Foot and Mouth disease.

A particularly successful meeting was held in 1954 in the West of Scotland when the College and the Hannah Institute were hosts. Some of those attending still remember the welcome they received here. In the early years, a second annual meeting took the form of a combination of conference and farm visits. Late this spring meeting became the Winter Conference, a one day affair

held during Smithfield Week in London. The summer meetings are enjoyed by all members, many of the winter meetings are more technical and include joint meetings with other scientific societies such as the Soil Science Society and the British Society for Animal Production. As a result of these meetings, members attending them have become better equipped as research workers, advisers or farmers.

- (b). The Journal of the British Grassland Society has been published four times a year since 1946, each number containing articles by all classes interested in grassland husbandry. The majority of the articles have been concerned with scientific aspects of grassland farming and of new techniques applicable to farming while a few have been just as concerned with the feeding value and efficiency of livestock management of the pastures.

During its short life, it has maintained a high standard which has gradually borne results in the reliance placed by scientists throughout the world on the material published in it. There are very few grassland research workers in the world who have not copies available for reference in their libraries.

- (c). International co-operation and exchanges of information.

The 4th International Grassland Congress was held in Britain in 1937 before the British Grassland Society was founded. The British Grassland Society was host to the 8th International Grassland Congress held in Reading in 1960 attended by delegates from nearly every country in the world. The British Grassland Society is to be host to a European Grassland Conference in September 1963.

- (d). Initiating the use of Grassland Recording as a means of comparing grassland management systems and the efficiency of management.

- (e). The Surrey Grassland Society, when it suggested that it might become affiliated to the British Grassland Society, was welcomed. Other similar societies were formed and each one was accepted as an affiliated member. Affiliation is not an empty word. There must be gain to both sides to make it worth while. The British Grassland Society sends copies of its Journal to the Regional Society, provides free of cost one speaker per year, allows delegate members of the regional societies to attend its meetings. The British Grassland Society gains by maintaining valuable farmer contacts.

The following is the latest available list of Regional Grassland Societies

<u>Name</u>	<u>Address of Secretary</u>	<u>Date</u> <u>Affilia</u>
Cumberland & Westmorland Grassland Society	P.R. Mitchell Esq., Hornby Hall, Whinfell, Penrith, Cumberland.	1961
Devon Grassland Society	P. Stewart Esq., c/o Dartington Hall Cattle Breeding Centre, Yarner, Totnes, Devon.	1961
Dorset Grassland Society	B.G. Hart Esq., Monksmead, Tarrant Monkton, Blandford Forum, Dorset.	1961
Durham Grassland Society	T. Doherty Esq., 139 Killingworth Drive, High Barnes, Sunderland.	1960
Essex Grassland Society	D.H.W. Thomson Esq., Millers Oak, Danbury, Chelmsford, Essex.	1960
Hampshire Grassland Society	C. Crichton Esq., c/o Hatch Warren, Cliddesden, Hampshire.	1961
Norfolk Grassland Society	J.M.H. Dewhurst Esq., Waters End, Ashill, Thetford, Norfolk.	1961
Northumberland Grassland Society	A. Walshe Esq., 25 Grenville Drive, Brunton Park, Newcastle-upon-Tyne.	1960

<u>Name</u>	<u>Address of Secretary</u>	<u>Date Affiliated</u>
North of Scotland Grassland Society	G.J. Copeman Esq., North of Scotland College of Agriculture, Grassland Department, 41 $\frac{1}{2}$ Union Street, Aberdeen, Scotland.	1961
Surrey Grassland Society	J. Pringle Esq., 104 High Street, Dorking, Surrey.	1954
Sussex Grassland Study Group Association	N.S. Strickland Esq., New Mill, Station Road, Hailsham, Sussex.	1960
Ulster Grassland Society	R.C. Angus Esq., Box 8, 7 Donegall Square East, Belfast, N. Ireland.	1960
Yorkshire Grassland Society	F.M. Baldwin Esq., 2 Cliftonfield, Shipton Road, York.	1960

Echo from the Past

Oeconomicus by Xenophon 450-355 B.C.

Ischomatus says to Socrates -

All other tradesmen are at great pains to conceal the chief parts of their arts : But if a farmer has either planted or sown his fields with skill and propriety, he is happy in having them inspected and when asked, he will conceal nothing of the manner by which he brought his works to such perfection.

Echoes From the Past

On the feeding qualities of natural and artificial grasses in different states of dryness.

Prof. James F.W. Johnston. Transactions of the Highland Society, 1843-45, p. 57-65.

"Much knowledge remains yet to be acquired in reference to the most economical mode of using green crops in food for cattle".

"The quantity of grass produced by a young plant or shoot, in a given number of days, is less when it first comes forth than after it is some way advanced towards maturity". This accounts for the higher outputs of grass when soiled or zero grazed against grazing. "A greater number of days feeding will be obtained from a pasture by moderate stocking, allowing some days rest than by a system of keeping the whole field close cropped".

"Animals which thrive on young shoots (of grass) can with difficulty sustain themselves on the more mature branches of the advancing summer".

"A method has lately been tried in Germany (silage making) which seems to preserve crops in their moist state equal to fresh cut grass".

"More frequent turning of hay and more rapid drying results in a more digestible hay".

Abstractors comment: Prof. Johnston could have lectured to a present day audience on this subject without modifying his views and indeed without being able to add very much more definite information. Prof. Johnston was Professor of Chemistry at Durham and was engaged by a farmer society called the Agricultural Chemistry Association of Scotland to be their own adviser and consultant. He analysed manures and fertilisers for members, analysed soils and advised on manuring, gave 53 lectures in halls, houses and outdoors in the field and during the course of a new activity called "Public breakfasts at which matters of interest could be discussed".

Echoes From the Past

Scots Farmer, Vol. 1, p. 4/5, 1763.

"A fet of gentlemen of a truly publick fpirit formed a society for the improvement of Agriculture. Many gentlemen applied to them for advice; and with juft liberality of fentiment, every perfon was made welcome to a participation of their beft fkill, and in confequence thereof, many laudable attempts towards improvement in this practical branch of fcience were made in different parts of the country".

On Tour

'Off the Grass'

by I.V. Hunt.

For some years, farmers, merchants and advisory organisations who are concerned in providing exhibits at Agricultural Shows throughout the counties have wondered whether these shows are serving their purpose, whether they are fulfilling their basic functions of presenting information to the farmer. The popularity of the National Grassland Demonstrations fostered by 'Shell' in Hampshire and last summer in Harrogate led to the 'Off the Grass' Show on the permanent show site of the Yorkshire Agricultural Society on September 18th and 19th, 1962. The main theme was the demonstration of the potentialities of grass using the shape of the customary Agricultural Show but stressing Education by Exhibition and Competition and cutting out Marketing. The fertiliser firms, the gadgeteers, the field merchants, the engineers, the seed experts were all there but instead of bodily refreshment they plied mental stimulants, instead of selling goods they sold ideas. The N.A.A.S., the local Agricultural College, the British Grassland Society were there, carrying out their customary functions at shows. The breed societies were also there but instead of being concerned with deciding which individual animal was the best of its kind, they presented the commercial case for their breed. There were competitions but all with accent on production. The beef and mutton breeds and crosses were judged on the hoof and in the carcass. Hay was judged on its feeding value.

Of the exhibits, the outstanding ones with a direct grass theme were by Messrs. Nitrovit Ltd., I.C.I. Ltd., Fertiliser Manufacturers Association; Shell Fertilisers, B.O.C.M. Ltd.; British Basic Slag; The Seed Trade Association and the machinery manufacturers, particularly those associated with hay and silage making. Some of the commercial educational exhibits were extremely good, telling their story in a more impressive and clear cut way than the N.A.A.S.

The attendances were well below expectations, partly because of the weather, partly because farmers in the area were still struggling to bring in their grain harvest but largely because the crowds still think they know all they need to about grass. The Farmers Weekly, the Yorkshire Agricultural Society and the exhibitors are to be congratulated for this effort which may not have brought in a big 'gate' but it will have created a very powerful ripple in the becalmed waters of British Agricultural Show Societies.

What impressed me most?

Well! the story of Oliver Barraclough, a dairy farmer on the poor pennine uplands with a Northerly aspect, who manages to net £45 per cow from 64 cows on 85 acres and is still doing it after 14 years. How he does it is a story that will keep for another occasion.

The 1962 Summer Meeting of the British Grassland Society

by John Frame.

The Grassland Societies of Surrey, Sussex and Hampshire joined forces to invite the Summer Meeting to pay them a visit. 200 members attended, visiting 3 farms each day and saw many examples of a wide variety of farming activities; intensive dairy farming, extensive sheep/beef farming, grass and clover seed production and large scale cereal production.

All the farms visited belonged to members of the Societies and were co-operating with local research centres in running experiments on grass varieties, manuring, the use of tall fescue for out-of-season grass growth and the use of chemicals (herbicides) to renovate old pasture.

All the dairy farmers visited were measuring the efficiency of their grassland farming by Grassland Recording. Their records were contributing to the investigation being conducted by the Grassland Research Institute and the Milk Marketing Board into evolving a simple foolproof method of measuring grassland use. This was of particular interest to me, since we at the Grassland Husbandry Department, Auchincruive have been evolving such a method for the past 6 years.

Two impressions stick. First, all the farms visited were being handled as purely business propositions. Unprofitable enterprises were discontinued. Second, there was no dabbling with this and that but a high degree of specialisation. For example, L.R. Bomford, Tufton Warren, Whitechurch, Hampshire had half of his 770 acre holding in barley for seed and the rest in grass for seed. He had full equipment for delivering the product in its final condition. Any grazing required was done by arrangement with a neighbour. Nothing could be simpler!

The new President Elect of the Society is John Rowsell, West Stoke Farm, Stoke Charity, near Winchester, a farmer seed grower. The next summer meeting will be held in South West Wales.

Grassland Dairy Farming in Holland

by A.D. Drysdale.

Anyone with an interest in grassland will be well rewarded by a visit to the Netherlands. In an area only four times that covered by our South West Scotland Grassland Society, are twelve million people - one of the most densely populated countries of the world. This small country maintains a thriving trade in agricultural produce with a great part of the total animal production being exported. Cattle production, especially milk and milk products, are the most important in this respect, with pig and poultry farming also of great importance and competing for second place.

The emphasis on dairy farming is due to a substantial part of the country being suitable only for permanent grass because of the low elevation, high water table and type of soil. It is interesting to note that in this thriving agriculture in the Netherlands there are only three breeds of cattle (all dual purpose), one breed of sheep and two breeds of pigs; the British figures are 22, 32 and 13 respectively. The average milk yields from these three breeds of cow are probably the highest in the world and yet this is a smallholding type of farming with the average farm between 30 acres with approximately 12 milking cows and only 22% of herds machine-milked. The current average milk yield of all recorded cows is 9,700 lb. and as 70% of all the cows are recorded this is a fair estimate of the national figure. Milk recording is officially cited as one of the main reasons for the high milk production. Artificial insemination is related to this as it is allowed to be used only on recorded farms, and in fact, 70% of all cows are now artificially inseminated. The emphasis is on good bulls, almost half of them being progeny tested.

Not only are milk yield and fat content used in the selection programme but for over 25% of all the cows the milk is now tested for protein, and for some cows speed of milking and individual quarter samples are also recorded. The information from recording has been a useful basis for the selection which has been carried out widely. This is shown, for example in the average fat content of the milk of all recorded Dutch Friesian cows which is now 3.91% while in the British Friesian it is 3.62%. Similarly the protein content is now expected to show an average annual increase of 0.02%.

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Meat production in the Netherlands is not so spectacular as milk production but the cattle population from these dual purpose breeds is big enough not only to produce all the beef and veal required by the 12 million people but also to provide a quantity for export.

This intensive production can be carried out on these small farms only because of the high levels of artificial fertilizer, especially nitrogen that are applied. The present application rates in the Netherlands are about 4½ times higher than on temporary pastures in Great Britain and over 10 times higher than on our permanent pastures. With the resultant large increases in yield from Dutch grassland, pastures have improved and methods of preservation of the grass crop have also improved with the result that at present 75% of all feedingstuffs consumed annually by the dairy herds are obtained from grassland.

This intensive grassland farming is, above everything else, the basis of Dutch agriculture. In Britain, at present, our grassland is largely under-developed, but if we are to be able to compete economically with Dutch agriculture in the future we shall have to make use of all the knowledge that is available about the science and practice of intensive grassland farming.

Focal Centres

The Hannah Dairy Research Institute

by Dr. J.A.B. Smith, Director.

The Hannah Dairy Research Institute is situated on the farm of Kirkhill, 3 miles inland from the town of Ayr on road A758 which leads from Ayr to Mauchline. It has seven departments each of which is responsible for research work on one or other of the following subjects, bacteriology, biochemistry, nutrition, physiology, technical chemistry, veterinary pathology and grass and dairy husbandry. The problems studied fall into three main groups. First there are those that are concerned with the intensive production of feedingstuffs, particularly of grass and its conservation products. Secondly there are the problems that are associated directly with the animals themselves, problems involving nutrition, the effect of climate, problems affecting the yield and composition of milk and work on the nature and control of mastitis. Thirdly, research is being done on the bacteriology of milk and milk products and on dried milk.

In the years 1940-49, when feedingstuffs were scarce, the object of the research work on the Institute farm was to establish methods whereby the dairy herd could be managed effectively with minimum use of imported feedingstuffs. Obviously with that object in view grass production was of vital importance, and for many years the Institute has done much research on the production and utilization of high quality grass and grassland conservation products. The work on grass production is done first on several series of well controlled experimental plots, and later the more promising results are applied on a farm scale. In summer, grazing experiments are done to determine the most efficient ways of managing pasture for grazing purposes, and in winter when the cows are housed research is done to determine the extent to which grassland products such as hay and silage can replace purchased feeds to maintain high yields of good quality milk.

In the year ended 31st March 1962 the farm which extends to 134 acres produced 49,300 gallons of milk which, when adjusted for purchased feeds, was equivalent to 388 gallons per acre. The average yield per cow in herd in that year was 916 gallons. The concentrate mixture used on the farm was 60% home-grown and the amount of it consumed was 16.5 cwt. per cow which was equivalent to 2.2 lb. per gallon of milk.

Recent results show that at the Institute farm the research work that is being done on grassland management and utilization is proving to be most rewarding in every way.

THE SOUTH WEST SCOTLAND GRASSLAND SOCIETY

Founded 1962.

CONSTITUTION AND RULES

1. NAME.

The Society shall be known as The South West Scotland Grassland Society.

2. ADDRESS.

Auchincruive, Ayr.

3. OBJECTS.

To further the knowledge of the management and utilisation of grassland in all its aspects and to provide members with opportunities for the interchange of ideas and experiences relating to the art of grassland husbandry.

4. MEMBERSHIP.

- (i) Membership of the Society shall (subject to paragraph IV of this Section) be open to those wishing to further the objects of the Society.
- (ii) Applications for memberships shall be sponsored by not less than two members of the Society. Election to membership shall be made by the Executive Committee.
- (iii) Those persons who were present at the Inaugural Meeting shall be ipso facto Foundation members.
- (iv) Not less than 75% of the total membership shall be practising farmers occupying holdings in the Counties of Ayrshire, Dumfriesshire, Kirkcudbrightshire and Wigtownshire.

5. SUBSCRIPTION.

There shall be an annual subscription of £1 payable on application for membership and thereafter by bankers order on 1st June each year. Any member who cancels his bankers order is deemed to have cancelled his membership.

6. MANAGEMENT.

The affairs of the Society shall be managed by an Executive Committee (five of whom shall constitute a quorum) consisting of the following persons:

- (i) The Chairman of the Society, who will be elected annually at the Annual General Meeting and will normally serve as Chairman for not more than two consecutive years.
- (ii) Twelve members (three of whom shall represent each of the counties mentioned in paragraph IV of Section 4 hereof) who will serve for a period of three years. Four of these members (one representing each county aforesaid) will retire annually and will not be eligible for re-election for a period of twelve months. Four members (one representing each county aforesaid) will be elected at each Annual General Meeting.
- (iii) The ex-Chairman of the Society shall automatically be a member of the Committee in the period following his term of office.
- (iv) The Honorary Secretary, who will be elected annually at the Annual General Meeting, will be a member of the Committee by virtue of office. He shall be reimbursed for all expenditure in the service of the Society.
- (v) The Honorary Treasurer, who will be elected annually at the Annual General Meeting will be a member of the Committee by virtue of office.
- (vi) The Committee has the power to co-opt not more than three additional members.

7. FINANCE.

Accounts shall be kept by the Treasurer of all money received and expended by the Society.

An Auditor, who shall not be a member of the Committee and who need not be a member of the Society, shall be appointed annually at the Annual General Meeting. A statement showing the financial position of the Society, examined and certified by the Auditor, shall be circulated to all members and laid before the Annual General Meeting.

All cheques on the Society's account shall be signed by the Treasurer and the Chairman or Secretary.

8. ANNUAL GENERAL MEETING.

The Society's Annual General Meeting shall be held in November each year, after not less than fourteen days' notice has been given to members.

9. AMENDMENTS TO THE CONSTITUTION.

This Constitution may be amended only by a general meeting at which at least two-thirds of those present are in favour. Notice of any proposed amendment, supported by the signatures of not less than five members must be given to the Secretary in time for inclusion in the convening notice, which will be sent out to members not less than fourteen days before the date of the meeting.

Adopted at Auchincruive
on the fourteenth day of
June 1962.

TAKE NOTICE

Since the inaugural meeting, the full Executive Committee has met twice, sub-committee once, mainly concerned with interpreting and modifying the constitution and preparing a programme of activities for the first year. The Chairman will include an account of these meetings in his report at the Annual General Meeting.

The following are the activities as planned.

1. MONDAY 12th NOVEMBER

AT CIVIC THEATRE

AYR.

2.30 - 5.30pm.

Programme:-

2.30 - 4 o'clock. Address by Mr. A.S. CRAY,

SOUTHDOWN FARM,

MEADSTEAD, ALTON, HAMPSHIRE,

Followed by discussion.

Mr. Cray farms widely in England, Wales and Scotland, has travelled in many countries and was President of the British Grassland Society in 1956/57.

At 4 o'clock there will be an interval for a cup of tea in Craigie Hall at the rear of the theatre.

4.30 - 5.30 pm. 1st Annual General Meeting.

Agenda:-

1. Chairman's report.
 2. Changes in Constitution.
 3. Programme of activities.
 4. Elections.
 5. Any other business.
2. Mr. J.S. Morrey, Devizes, Wiltshire will address the Society in early March. Fuller details will be provided at the Annual General Meeting.

3. A tour of Wigtownshire farms is being arranged by committee members of that county to take place during early April.
4. A proposal that the Society should organise a 2 - 3 day visit to some part of England or Wales is being examined. Any suggestions by members would be welcome.

MEMBERSHIP LIST

FARMER MEMBERS

Ayrshire

- ALMONT Farms Ltd., Pinwherry.
BUCHAN, A. Ladykirk Estate Office, Monkton.
CALDWELL, T. South Logan, Catrine.
CARRUTHERS, D.S. Woodside Farm Ltd., Dunlop.
COCHRANE, A. Nether Craig, Crosshouse, Kilmarnock.
COLLINS, W.J. Macmanniston, Dalrymple.
DALGLEISH, R. Fordhouse, Maybole.
DUNLOP, G. Warnockland, Fenwick.
DUNLOP, Q. Trees, Maybole.
GALL, J.M. Doonholm Farm, Ayr.
GLOVER, R.G. Laurieston, Dundonald.
GOLDIE, W. Barassie Farm, Troon.
GRAY, J.F. Park Farm, Kirkoswald.
GRAY, W. Park Farm, Kirkoswald.
HAMILTON, G. Coldcothill, Craigie, Kilmarnock.
HAMILTON, Lt.Cdr. J. Rozelle, Ayr.
HANNAH, J.J. Girvan Mains, Girvan.
HOGARTH, J. Glenduisk, Pinwherry.
HORNE, P.I.H. Sandhill Farm, Drongan.
HOWIE, A.L. Netherhouses, Dunlop.
HOWIE, J.M. Ashludie, Dunlop.
KENNEDY, B.B. Doonholm, Ayr.
KENNEDY, J.H. Baltersan Mains, Maybole.
KERR, J. Camsiscan, Craigie, Kilmarnock.
KERR, J. West Lochridge, Beith.
LAMONT, J. Cockenzie, Dalry.
LOGAN, J. W. Bankside, Kilbirnie.
LOGAN, T.R. Holehouse, Kilbirnie.
LOGAN, W. Lanfine Estate Office, Newmilns.
McCRONE, G. Blairston Mains, Alloway.
McCUBBIN, J.L. Garrockhill Farm, Drongan.

MacDONALD, J. Loreny, Kilmarnock.
McINTYRE, A. Craigalbert Farm, Ballantrae.
MEIKLE, A.F. Camregan, Girvan.
MILLER, J.W. West Gatehead, Kilmarnock.
MONTGOMERIE, A.W. Dunure Mains, Dunure.
MONTGOMERIE, R.W. Lessnessock, Ochiltree.
MORTON, W.L. Meiklewood, Kilmarnock.
PARKER, W. Meikle Laught, Saltcoats.
REID, A. Diddup, Saltcoats.
REID, G.C. Castlehill, Stevenston.
REID, J. D. Barrhill, Beith.
REID, R.W. East Middlebank, Dalry.
RENTOUL, P.M. Laigh Kilphin, Ballantrae.
RICHMOND, M. Shalloch Park, Girvan.
SLOAN, H. Cooper Hill, Cumnock.
SLOAN, J.H. Dormiston, Ayr.
SMITH, R.S. Corsonkell, Saltcoats.
STEPHEN, J.G. Glenlogan, Mauchline.
STEVENSON, R.H.U. Corseclays House, Ballantrae.
THOMSON, J. W.S.A.C., Auchincruive, Ayrshire.
WATSON, J.S. Creoch, Ochiltree, Cumnock.
WEIR, W. Wheatrig, Kilmaurs.
WELSH, J.L. Arness, Fenwick.
WILSON, J. Amlaid, Waterside, Fenwick.
WOODBURN, R. Boreland, Hollybush, Ayr.
YOUNG, W. Skerrington Mains, Hurlford.

Dumfriesshire

- BALLANTYNE, J.D. Tinwald House, Dumfries.
BELL, J. & D. Brydekirk Mains, Annan.
BORLAND, J.R. Auchencairn, Closeburn, Dumfries.
DUNCAN, Sir A.B. Gilchristland, Closeburn.
ELLIOT, W. Clenries, Sanguhar.
FITZSIMON, J. Sunnyhill, Holywood.
GASS, J.L. Townhead, Mouswald, Dumfries.
GORDON-DUFF-PENNINGTON, P.T. Kirkland Tynron, Dumfries.
GRIEG, J. Castlehill, Lochmaben.
HAMILTON, H. Cleuchhead, Thornhill.
HARDIE, G. Meinbank, Ecclefechan, Lockerbie.
HARTLEY, A.R. Granton, Moffat.
HENDERSON, W.J. Carswadda, Lochanhead.
HUNTER, J. Laggonlees, Dunscore.
KERR, J. Crochmore, Lochfoot Road, Dumfries.
LUKAS, S. Stroquhan, Dunscore.
LYON, J.F.S. Castlehill, Kirkmahoe.
McCUTCHEON, A. Townfoot of Glengaber, Auldgirth.
McSKIMMING, W. Bankfoot, Dalswinton.
MAITLAND, W.F. Crichton Royal, Dumfries.
MARSHALL, J.G. Hardgrove, Carrutherstown.
MAXWELL, J. Gall, Boreland, Lockerbie.
PATERSON, Dr. E. Stenrieshill, Wanphray, Moffat.
PATERSON, Prof. R. Stenrieshill, Wanphray, Moffat.
SEMPLE, R. Dornock Mains, Annan.
SHARLAW, R.C. Holestane, Thornhill.
SMITH, A. Gotterbie, Lockerbie.
STEEL, I.J. Dalton Green, Lockerbie.
TULLOCK, A.R. Gillesbie, Lockerbie.
WILSON, A. Linns, Dumfries.

Kirkcudbrightshire

- ANDERSON, J. Glenterry, Twynholm.
BIGGAR, J. Chapelton, Castle Douglas.
BROATCH, G. Chapelcroft, Castle Douglas.
BROOKE, Dr. K. Masonfield, Minnigaff, Newton Stewart.
CAMPBELL, C.H. Slagnaw, Castle Douglas.
CAMPBELL, J.K. Low Arkland, Castle Douglas.
CAMPBELL, J. Enrick, Castle Douglas.
CESSFORD, M. Chapmanton, Castle Douglas.
CLARK, G.L. & T.R. Newmains, Kirkbean.
CRAWFORD, H.B. Craigley, Castle Douglas.
DRYANAN, R.J. Upper Minnydow, Kirkpatrick Durham.
EWART, J. Douganhill, Dalbeattie.
FARISH, J. Meikle Culloch, Dalbeattie.
FINLAY, J. Rainton, Gatehouse.
GILLESPIE, T. Southpark, Borgue.
GORDON, J. Underwood, Ringford, Castle Douglas.
GRAY, A. Jnr. Ingleston, Borgue.
HANBURY, R.E.S. Drumstinchall, Dalbeattie.
HARRISON, S. Airdrie, Kirkbean.
HASTINGS, A.F. Corra, Castle Douglas.
HOUSTON, J.A. Overlaw, Kirkcudbright.
HOWIE, I.L. Cubbox, Balmaclellan, Castle Douglas.
HYSLOP, G.A. & W.L. West Logan, Castle Douglas.
IRVING, R.W. Meikle Knox, Castle Douglas.
JENNINGS, I. Shiel, New Galloway.
KINGAN, J. Laneside, Troqueer.
McCALLUM, G. Falbae, Creetown.
McCLYMONT, A.M. Creebank, Newton Stewart.
McCONNEL, J.W. The Hill, Balmaclellan, Castle Douglas.
McCORMICK, F. Barthain, Castle Douglas.
McCULLOCH, W.J. Ardwell, Gatehouse.
McDOWALL, K.A. The Bungalow, Girdstingwood.
McGILL, J.H. Hillowton, Castle Douglas.
MacLAREN, N.P. The Leaths, Castle Douglas.

MacMILLAN, N. Overton, Southwick Road, Dumfries.
MacTAGGART, J.A. Kells of Southwick, Southwick Road, Dumfries.
MASON, C.L. Torrorie, Kirkbean.
MILLAR, J. Carseminnoch, Newton Stewart.
MILLIGAN, J.M.L. Culvennan, Castle Douglas.
PARK, R.L. Mark, Creetown.
PICKEN, D.L. Milton, Kirkcudbright.
ROBSON, J.L. Mains of Machermore, Newton Stewart.
SADLER, D.G. Cleugh, Dalry.
SCOTT, J.McC. Grovehill, Minnigaff, Newton Stewart.
SERVICE, W. Calgow, Newton Stewart.
SMITH, J.A. Drumhumphry, Corsock, Castle Douglas.
SMITH, R.S. Hartburn, Kirkcudbright.
TAIT, G.K. Stockmoss, Kirkcudbright.
WANNOP, E.C. Kirkland Terregles, Dumfries.
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Wigtownshire

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EVANS, F.R. Penkiln, Garlieston.
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McFADZEAN, T. Brightside, Ardwell.
McGEOCH, W.C. Barnearnie, Kirkcowan, Newton Stewart.
McHARG, D. Kirkland, Leswalt, Stranraer.
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McINTYRE, J.A.D. Logan Mains, Ardwell, Stranraer.
McINTYRE, J.F. Kirminnoch, Ervie, Stranraer.
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PURDIE, S.H. Craichmore, Stranraer.
SPROAT, J.N. Baldoon, Wigtown.
STEVENSON, A. Drumflower, Dunragit.
STEVENSON, J. Aird, Stranraer.
TAYLOR, J. Barraer, Newton Stewart.
TORRANCE, G. Dindinnie, Stranraer.
TORRANCE, J.H.S. Killumpha, Port Logan, Stranraer.
WALLACE, J.K. Whitehills, Sorbie.
YOUNG, H. Claunch, Sorbie.

TECHNICAL MEMBERS

- ALEXANDER, R. W.S.A.C., Analytical Chemistry Dept., Auchincruive, Ayr.
BERRIE, G. W.S.A.C., 6 Blythswood Square, Glasgow, C.2.
BORLAND, W.F. James Borland & Sons Ltd., 1/3 St. Marrook Place, Kilmarnock.
CAGLIENARD, P. Mardon, The Crescent, Dumfries.
CAMPBELL, A. W.S.A.C., 43 Whitesands, Dumfries.
CARR, W.D. W.S.A.C., 6 Blythswood Square, Glasgow, C.2.

- CASTLE, Dr. M.E. Hannah Dairy Research Institute, Kirkhill, Ayr.
- CHARLTON, J.F.L. W.S.A.C., Botany Department, Auchincruive, Ayr.
- CONNELL, J. Newmarket Mills, Kilmarnock, Ayrshire.
- CUNNINGHAM, J.D. S.A.I. Ltd., Railway Grain Mills, Stranraer.
- DICKSON, I.A. W.S.A.C., County Advisory Office, Dumfries.
- DRYSDALE, A.D. Hannah Dairy Research Institute, Kirkhill, Ayr.
- FRAME, J. W.S.A.C., Grassland Husbandry Department, Auchincruive, Ayr.
- FRASER, R.H. S.A.I. Ltd., 33 George Street, Dumfries.
- HALL, J.K.S. W.S.A.C., 43 Braehead Avenue, Ayr, Ayrshire.
- HANNAY, A., Sheuchan Mills, Stranraer, Wigtownshire.
- HARKESS, Dr. R.D. W.S.A.C., Grassland Husbandry Department, Auchincruive, Ayr.
- HARPER, P. c/o T. Harper & Sons Seeds Ltd., Stranraer.
- HENDRIE, Prof. D.S. W.S.A.C., 6 Blythswood Square, Glasgow, C.2.
- HUNT, I.V. W.S.A.C., Grassland Husbandry Department, Auchincruive, Ayr.
- JOHNSON, J.P. S.A.I. Ltd., 199 High Street, Ayr.
- KIRKWOOD, Dr. R. W.S.A.C., Botany Department, Auchincruive, Ayr.
- LAIRD, Dr. R. W.S.A.C., 20 Miller Road, Ayr, Ayrshire.
- MacFARLAN, J. S.A.I. Ltd., 39 Palmerston Place, Edinburgh, 12.
- MCCARVA, J. Burnbrae Cottage, Muirkirk.
- MARKHAM, J.A. John J. Inglis & Sons Ltd., 43 Alloway Street, Ayr.
- MATHEWS, R.D. W.S.A.C., 20 Miller Road, Ayr.
- MITCHELL, I.W. W.S.A.C., 82 King Street, Castle Douglas.
- MITCHELL, W. W.S.A.C., 82 King Street, Castle Douglas.
- MORTON, A. B.O.C.M., South Cathkin, Rutherglen.
- PARKINSON, A.E. W.S.A.C., 6 Blythswood Square, Glasgow, C.2.
- PATERSON, R.M. W.S.A.C., 20 Miller Road, Ayr.
- PITCAIRN, A. Glenmore, Stranraer.
- REID, Dr. D. Hannah Dairy Research Institute, Kirkhill, Ayr.
- SMITH, Dr. J.A.B. Hannah Dairy Research Institute, Kirkhill, Ayr.
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- VOSS, R. W.S.A.C., Spectrographic Department, Auchincruive, Ayr.
- WALKER-LOVE, J. W.S.A.C., Animal Husbandry Department, Auchincruive, Ayr.

- WATSON, J. Hannah Dairy Research Institute, Kirkhill, Ayr.
WATSON, J. McGill & Smith, Ayr.
WATSON, W.H. McGill & Smith, Ayr.
WEIR, W. 10 Yorke Road, Troon.
WILLIAMSON, G.A. S.A.I. Ltd., 199 High Street, Ayr.
WILSON, A.L. W.S.A.C., Vet. Investigation Department, Auchincruive, Ayr.
WILSON, R.M.T. South of Scotland Electricity Board, Inverlair Avenue, Glasgow S.4.
WRIGHT, A.B. Fisons Fertilizers Ltd., 15 Castlehill Road, Ayr.

ADDITIONAL MEMBERS

Technical

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COCHRANE, J.G. Jnr. Garrockhill, by Ayr, Ayrshire.
HULME, D.F. Kerr & Co. Ltd., Donbarra, 6 Ritchie Avenue, Cardross, Dunbartonshire.
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GRIERSON, R.T. Glenorie, Kirkcolum, Stranraer, Wigtownshire.
McCAIG, P.J.H., Barnultoch, Stranraer, Wigtownshire.
McCOLM, S.A., Cairngarroch, Drummore, Stranraer, Wigtownshire.

Summary of Membership

Class

<u>Farmer members</u>	
Ayrshire	57
Dumfriesshire	30
Kirkcudbr. tshire	51
Wigtownshire	44
<u>Technical members</u>	<u>51</u>
	<u>233</u>