

GRASSLAND IMPROVEMENT PRACTICES IN THE FALKLAND ISLANDSIntroduction

During this time I have visited nearly every farm in the Islands. I have studied the local conditions and looked at the local experimental work. I had planned a large scheme of preliminary experimentation but this had to be curtailed due to the late arrival of experimental materials. Soil samples from several farms have been sent to Aberystwyth for analysis.

I am at the moment organising a grasslands conference to be held in July in an attempt to explain what is being done in the way of research and development on the various farms.

Farms visitedCarcass Island - visited 12th November 1965

Mr. Bertrand was most interested and at the time of my visit was erecting a sub-division fence on the North coast of the island. He planned to erect further fences. I agreed with him in this policy and suggested that in some places surface sowing of seed with surface cultivation could prove beneficial. I was told that excessive cultivation could lead to erosion problems.

Chartres - visited 15th-17th May 1965 & 16th-31st September 1965

Mr. Luxton advocated that fencing was a good technique and had also had good results from draining. There is a large acreage of very short mossy type of camp on this farm and I suggested that some form of cultivation could effect a great improvement on this. The dangers of erosion were pointed out to me and on investigation we found the soil to be only about 1 ft. to 18 ins. deep.

On my second visit I observed an area of unimproved camp being rotavated near to the settlement. Mr. W. Luxton and I discussed the merits of pre-burning this area in an effort to reduce the loose trashy nature of the ground left by the rotary cultivator. Mr. Luxton favoured the natural agency of weathering over the winter to consolidate the ground as burning near the settlement could have been dangerous to other parts of the camp.

Darwin - visited 8th-12th April 1965

Here I had a look at some of the sod seeding work which had been carried out a number of years ago. In certain places all that can be seen at the present time is a series of grooves left by the coulters of the machine. In other cases the grass sown (Yorkshire fog) can be seen in lines across the camp with some slight spread from these lines. Some areas were sown with fertiliser and some without but there did not appear to be any correlation between fertiliser use and establishment. I think that date of sowing may have affected the germination and establishment.

Douglas Station - visited 24th-26th May 1965, 13th-18th December 1965 and 27th-28th February 1966

This farm has one of the lowest lambing percentages in the islands and Mr. Reid is keenly aware of the need for improvement. A regular mileage of fencing is attempted every year over and above the renewal programme and this has resulted in a steady reduction in the size of the camps. The high ground camps in the Wickham Heights are used for summer grazing for all stock between shearing and dipping to give the main camps a rest. This is proving to be rather clumsy to work with the ewes and Mr. Reid is trying to get his owner's permission to alter the system slightly. On the peninsula to the east of the settlement Mr. Reid has tried out several cultivation methods. This piece of ground was originally covered in diddle-dee and the following treatments have been tried out at various times.

- (a) A homemade scraper of truck rails was dragged over the area to destroy the diddle-dee and Yorkshire fog was drilled directly into the ground. There was a noticeable spread of native grasses and a fair amount of fog showing. This had been done several years ago.
- (b) Six years ago an area was ploughed and directly re-seeded to Yorkshire fog and clover was included in some areas. This area seems to be getting poorer and there are only one or two clover plants left.
- (c) Recently (Spring 1965) another section was treated with the scraper and then heavily disc harrowed before drilling Yorkshire fog. Establishment seems good.
- (d) Two further sections were ploughed and rotavated respectively this spring. The ploughed area seems to have a better establishment at the moment due to greater consolidations.
- (e) Mr. Reid had received from New Zealand samples of pelleted and inoculated legumes. These samples were re-inoculated with Uruguayan inoculant supplied by me and were sown on two places through the drill. Nodulation seemed to have been successful on all species at the time of my last visit. The species sown were:- white clover, Montgomery red clover, subterranean clover, suckling clover, lucerne, serradella. There was a fairly high seedling mortality due to wind in spring but there are still plenty plants left.

Several experiments have also been set up by me and are as follows:-

- (1) An investigation into the interaction of the trace elements copper and molybdenum with lime and phosphate. This was set up on the 21st December 1965.
- (2) An investigation into the effect of paraquat on diddle-dee. As was expected it had no effect at 8 pints per acre and less.
- (3) A trial of 42 different grasses and clovers. This was put on a former oatfield and several different inoculants were used for the legumes. It was laid down on the 28th February 1966.

Fitzroy - visited 12th-16th April 1965, 19th-20th January 1966 and 23rd-28th February 1966

Much drainage has been done on this farm with the Cuthbertson 'water buffalo' and Mr. Clement is very pleased with the results. He is very keen on increasing the acreage of the settlement fields and is now steadily working down the peninsula of the Fitzroy parks. He agrees with me that sub-division is a good thing and has had some increased lambings on sub-divided camps. The first lambing after sub-dividing is usually very low but eventually seems to come up to higher than it was before fencing.

Mr. Clement is very interested in new machinery for seeding, broadcasting, silage making etc. and I have offered advice on what to get. The silage making is at the moment little more than an idea.

On a piece of camp originally ploughed out as an oatfield I have laid out the following experiments:

- (1) A small trial of a few grasses and legumes which were available before the arrival of the main order. The legumes have germinated and the grasses are growing satisfactorily.
- (2) An experiment identical to the large varieties trial at Douglas Station was set up on the 25th February 1966.

Fox Bay East - visited 13th-15th September 1965

Several years ago some long strips of white grass camp were ploughed and reseeded to Yorkshire fog on this farm. I was shown this work and we agreed that good consolidation was one of the keys to success. There was also an area of recently rotavated ground on the point outside the settlement which had just been sown before I arrived. Difficulty was experienced with the broadcaster as the seed is so fine it runs like water; all the holes in the broadcaster have to be adjusted individually and consequently the seed runs out too soon. Mr. Porter, the mechanic, was trying to devise some sort of linkage. Some of the more recently sown areas did not have too good a take on them - possibly due to the broadcasting method; drilling may give a better establishment.

Fox Bay West - visited 2nd-6th September 1965

This farm has a large sandy area in it which has now been fairly successfully controlled by sandgrass plantings. The number of ponds which are used as fences causes trouble as they are difficult to fence into and tend to dry out. Much drainage has been done with a dragline ditcher and a swamp plough. Mr. Robertson told me the former machine was well worth running but he could not now get anyone to drive it. We talked about sub-division of camps and Mr. Robertson said he planned to cut up one.

Green Patch - visited 17th-18th June 1965 and 9th January 1966

This farm carries out a policy of concentrated grazing on one camp to give the others a rest. The camp used for this appears much greener but on closer inspection this is seen to be due to an increased amount of Christmas bush.

This summer Mr. McPhee rotavated about an acre of balsam bog/moss/small fern camp and at the time of my last visit the Yorkshire fog seed sown had germinated and was looking rather well.

Hill Cove - visited 1st-9th March 1965

This farm goes in for large scale rotavation and has now a large acreage of ground which have been rotavated and sown to Yorkshire fog. The establishment on the loose seed-bed produced by this machine seems to be very slow. The earlier work now appears as a good growing sward. On dry diddle-dee camp the process works much better and the most spectacular improvement has been obtained on this class of ground. Results on white grass are not nearly as good and there is a tendency to concentrate - quite rightly - on the drier ground. There has been a great improvement in the condition of the sheep numbers. I suggested that more fencing would give better control of this improved grazing - the grass tends to get rather rank - but Mr. W. W. Blake considered that he had to give top priority to improving as many acres of grazing as he could by the re-seeding method as it gave quicker returns. Mr. L. G. Blake said that once the sheep numbers had increased to a number which was too great to handle at the Hill Cove settlement it was their intention to divide the farm into two sections - this however would be many years ahead.

Jackson's Harbour - visited 12th-16th June 1965 and 5th-8th January 1966

Mr. O. Smith is having to spend a lot of time and money on

maintenance. He has renewed some fencing and intends to put in more. He uses one of his large paddocks as a holding area for all his sheep for a few weeks prior to dipping; this blackens out the paddock severely and provides a good medium for sowing fog seed into. I suggested that nearly all of this paddock could with profit be surface sown with Yorkshire fog and Mr. Smith said he eventually intended to do this.

On the 8th January 1966 I laid down an experiment on the heavily grazed block. It was similar to the smaller one at Fitzroy but was surface sown.

#### Moody Valley

I visited this farm one afternoon and was shown the small areas improved at the head of the bay by pig keeping and the scattering of offal. Mr. Hills said the farm was well divided and he practised rotational grazing.

#### Mullet Creek - visited July 1965

A steady improvement has been carried out over the past few years on this farm by the scattering of Yorkshire fog seed on the surface. This is particularly noticeable in the east end piece. One or two new paddocks have also been made near the house by a similar means. The farm would like to put up some more internal division fences. It is unfortunate that on one side this farm marches with the common and therefore has to bear the whole cost of renewal of this fence which is some  $2\frac{1}{2}$  miles long.

#### New Island - visited 17th-22nd November 1965

Erosion is a great problem on this island and Mr. Davis blames the penguins. I suggest it is due to a previous history of burning. The island has quite extensive tussac plantations which Mr. Davis planted over the years. The sheep stock has increased steadily since Mr. Davis bought the island. Rabbits and firebirds are also a problem. Quite a lot of fog seed is sown by surface seeding.

#### North Arm - visited 20th August-1st September 1965

Some experimental areas have been ploughed and sown to Yorkshire fog in the camp, but are rather small and tend to be over grazed. One camp had been split into three before Mr. Oliver took over. Mr. Oliver said he would have to make this camp work before he went on with further sub-division, which he considered the only method of improving whitegrass. A system of splitting camps in 3 and moving a flock round these sections in an annual rotation was the system he favoured. Though not as intensive as it could have been, I was inclined to agree that it would be a good working compromise.

Mr. Oliver also proposed an extensive scheme with a small gang and low overheads. The idea would appear to be not without merit - especially on the grounds of economics.

#### Pebble Island - visited 26th-28th April 1966

Like most islands Pebble is more fertile than the mainland. In this case it is possibly due to the deposits of shell sand on the beach which have been blown on to the land. Exposure is a problem and some form of a shelter - especially at the east end - would be welcome.

#### Port Louis - visited 9th-11th June 1965

Mr. Grant said he was hoping to cut his two northern camps in half so that he could keep the sheep off the coast section which is at present very heavily grazed. I agreed that this was sound policy.

Port San Carlos - visited 3rd-5th April 1965

Mr. Cameron used a scheme similar to Douglas Station in that he rested his main camps by putting his sheep on 'concentration grounds' between shearing and dipping. These camps were in some cases parts of larger ones which had been split up. He had some success with surface sowing in these heavily stocked camps. Mr. Cameron considered that there was a place for cattle in the farming system here and regretted that there was no commercial outlet for them. I agreed with him and suggested that cattle were worth keeping even if they were only used as machines for controlling long grasses.

I have not visited the farm since Mr. A. Miller took over the managership.

Port Howard - visited 18th-22nd March 1965 and 29th-October to 2nd November 1965

This farm has a large acreage of cultivated land around the settlement which is now and then increased. Plans are in hand at the moment to increase it further. Silage is grown on this acreage and is fed to about 600 ewes before lambing with reasonable success. If the silage is still successful after 5 years it is intended to go in for supplementary feeding in a big way.

The main part of the farm is divided into 4 main groups for rotational grazing purposes. These 4 parts are sub-divided into smaller camps round which the sheep are moved at regular intervals. This system has increased the carrying capacity of the farm.

It is planned to use cattle as an integral part of the scheme and also to introduce surface sowing of better grasses. Mr. Pole-Evans is very enthusiastic about severe burning. I suggested that it would be better to trample down the excess herbage with cattle but Mr. Pole-Evans maintains that there is a place for burning.

Port Stephens - visited 7th-12th September 1965

Mr. Goss had only recently taken over the managership and intends to put as much fencing as he can on the farm. There is an area - quite extensive - which was burned over a number of years ago and is still bare. I suggested that it could be disced over and sown down to fog. I also offered advice on the cultivation of a new oatfield i.e. I considered that rotavating was not required and again a severe discing would do the job and require less power. Mr. Goss agreed on this point.

Rincon Grande - visited 4th-8th June 1965

This farm is well sub-divided but I consider that further sub-division would pay considerably. Mr. Turner said it was his intention to continue with fencing.

He showed me some interesting experimental work where he had sown seed after discing and had achieved quite a good take. This was on camp which had had the diddle-dee burned off. He intended to carry on with this method and I agreed with him that it seemed to be the most convenient technique for large areas of the farm which carry a thick cover of diddle-dee. Some interesting erosion control had been carried out on the north-west coast.

Roy Cove - visited 9th-14th March 1965

There is now a large acreage of ploughed and reseeded grassland on this farm and the sheep stock has increased accordingly. I suggested to Mr. Miller that a sward which included something other than fog would be much better e.g. white clover. He pointed out the expense of the seed and the trouble which has previously been experienced in getting legumes to grow. He added that he saw my point and said that at one time he had looked on the Yorkshire fog as being only a stage in the improvement but now he was not so sure as the soils did not seem to have a great potential.

I again suggested that more fencing would control the grass better but his opinion was similar to Mr. Blake's. He also considered that the seed heads on the grass were a good thing as this helped to spread the grass on to the bare patches which occur.

I also said that the ploughing seemed rather an expensive process when coupled with discing on some ground and that discing alone after burning may be just as good. Mr. Miller seemed to favour the more severe cultivation.

#### Salvador - visited 27th May-3rd June 1965

Having just come from Douglas Station I thought that Mr. Reid's technique with diddle-dee ground might be suitable at Salvador and Mr. Pitaluga said he would bear it in mind when he started grassland improvement. He is at the moment concentrating on improving his buildings.

There is an erosion problem on the Big Rincon and I said that I would attempt to control it by some easier means than planting sandgrass. I had in mind the planting of some fast growing crop such as lupins or rye early on in the season in an attempt to stabilize the ground before it dried out in the summer.

#### San Carlos - visited 6th-7th April 1965 and 16th December 1965

This farm also uses its high ground to rest its main camps in the summer time. Mr. Bonner said that there was a lot of ground round San Carlos waters which he thought it would be easy to cultivate and re-seed and I agreed that this seemed to be the case. As a pilot scheme about an acre of suitable ground was rotavated over the winter and sown in the spring to Yorkshire fog. A month after sowing the grass seed I over-sowed with clover and the report is that occasional plants can now be seen. As the inoculation technique was not perfect this is most encouraging.

#### Saunders Island

Mr. Pole-Evans has tried an experimental strip of improvement on a section of short fern and diddle-dee camp. A large and heavy scraper made of old Bren gun carrier tracks was dragged over the area and Yorkshire fog seed was sown. The idea is, in my opinion very sound and should give good results. Much of the island could be treated in this way. Mr. Pole-Evans burns off diddle-dee and leaves it to re-seed with native grasses. I advised him to cultivate lightly and sow seed after the burning.

#### Teal Inlet - visited 14th-23rd May 1965

Some of the best re-seeding to Yorkshire fog I have seen in the Falklands is at this farm. It is on a diddle-dee point near the farm and has been down for about 4 years. I suggested that much more of this could be done, to which Mr. Barton agreed and said that they tried to do a bit of ploughing when they had men free.

He asked my advice on what seeds mixtures to undersow his oat-crop and I suggested two seeds mixtures - one for each half of the field - and also recommended a fertiliser treatment.

#### West Point Island - visited 13th-16th November 1965

Just before my arrival Mr. Napier had just completed a further two sub-division fences which had been suggested by Mr. Wannop. He was planning to rotate his sheep through the camps, a technique with which I agreed. As on several other islands erosion is a problem and Mr. Napier showed me where they had stopped the sand with sandgrass. He had also planted tussac in some clay patches in this eroded area and the tussac was thriving there and in sand. Some large bare patches were still in evidence which were growing in, but so slowly that I said I would attempt to sow something on them as planting up with sandgrass is a long process. There is sufficient

tussac in plantations on the island to feed practically all the sheep for 3 months in winter which is extremely good management. I suggested that the guano deposits on one of the adjacent islands would make excellent fertiliser for this island and Mr. Napier said he would attempt to bring some up as a trial.

Weddell Island

This island would well repay fencing up and mild cultivation to remove the diddle-dee and replace it with grass. Mr. McGill agreed with this opinion but said that he was limited on what he was allowed to do.

Stanley Common

Several small experiments have also been set up near Stanley. These are mostly small variety trials similar to those at Fitzroy and Johnsons Harbour but there is one herbicidal trial. It is to investigate the correlation (if any) date and rate of application of paraquat and T.C.A.

*Colin D. Goumey.*

GRASSLANDS OFFICER

9th May 1966

