

SHELTER PLANTS AND EXPERIMENTAL FORESTRY.

It has been stated that the winds experienced in the Colony are so severe that trees will not grow. Certainly there are no trees ^{indigenous} ~~endemic~~ to the Colony, and but two shrubs, Chiliotrichum diffusum, and Veronica elliptica. These latter have been destroyed by sheep and the practice of burning the camp, and are now restricted to a few locations, ~~the latter to places~~ inaccessible to stock.

There have been several attempts by private individuals to establish trees and in spite of many disappointments there are five Stations, apart from private gardens in Stanley, where a modicum of success may be claimed. The Government appointed a Forestry Officer ⁱⁿ ~~on~~ 25th. December 1920, but he was not replaced when his term ^{of service} expired in 1926.

The first attempt at afforestation was made between 1892 and 1898 by the late Robert Blake Esq. at Hill Cove. Some two or three acres appear to have been planted but all that now remains are some twenty Pinus sylvestris, and thirty one pines of another unidentified two-needle species with long needles, open type growth and grey bark. These are some fifteen to twenty feet high with boles six inches to eight inches in diameter and are grouped in clumps. There are some dead or near-dead skeletons numbering fourteen and twelve of each species respectively. Those that survive do not look healthy. The healthiest of the survivors are on the sheltered side of a well established gorse hedge.

About the same date some plants of a species of Nothofagus and Populus alba were planted in an old vegetable garden. The former have grown very well and are now at least twenty to twentyfive feet high, each with multiple trunks up to four feet in circumference. I have not been able to identify this species, ~~but it may be~~ N. punalis. It is undoubtedly the tree best adapted to local conditions, but is limited to five trees at the top settlement at Hill Cove and one at Shallow Bay. The Poplars have grown equally as tall, but lack the strength and vigo

SHRUBS, TREES AND EXPERIMENTAL FORESTRY.

It has been stated that the winds experienced in the Colony are so severe that trees will not grow. Certainly there are no trees endemic to the Colony, and but two shrubs, Chytrochloa diffusa, and Veronica elliptica. These latter have been destroyed by sheep and the practice of burning the camp, and are now restricted to a few locations, the latter is placed inaccessibly to stock.

There have been several attempts by private individuals to establish trees and in spite of many disappointments there are five stations, apart from private gardens in Stanley, where a medium of success may be claimed. The Government appointed a Forestry Officer in 1920, but he was not replaced when his term expired in 1926.

The first attempt at afforestation was made between 1892 and 1893 by the late Robert Blake Esq. at Hill Cove. Some two or three acres appear to have been planted but all that now remains are some twenty Pinus eximialis, and fifty one pines of another unidentified two-needle species with long needles, open type growth and grey bark. These are some fifteen to twenty feet high with boles six inches to eight inches in diameter and are grouped in clumps. There are some dead near-bud skeletons numbering fourteen and twelve of each species respectively. Those that survive do not look healthy. The healthiest of the survivors are on the sheltered side of a well established horse hedge.

About the same date some plants of a species of Hedera and Populus alba were planted in an old vegetable garden. The former have grown very well and are now at least twenty to twenty five feet high, each with multiple trunks up to four feet in circumference. I have been able to identify this species, but at the moment I am unable to do so. It is undoubtedly the tree best adapted to local conditions, but its limited five trees at the top settlement at Hill Cove and one at Shallow Bay. The Populus have grown equally as tall, but lack the strength and vigour.

I have inspected this - it is disappointing

Yes

of the beech.

In 1921 the Forestry Officer introduced broad leafed trees and conifers from Britain and grew seedlings of conifers in seed-beds in Stanley.

A plantation was made on Mount Low, about 1923, in a position sheltered from the westerlies but with a south-easterly aspect. It was found to be ^{un-}satisfactory, but in 1940 there were still an apparently complete row of stunted Nothofagus obliqua ^(?), twenty four to thirty inches high with gnarled trunks two to three inches in diameter. The surrounding paddock ~~was~~ typically native wet camp from which stock had been excluded. About three very unthrifty pines still persisted.

The majority of the Forester's work was planned at Hill Cove where a paddock of approximately ten acres was handed over to the Colonial Government by Messrs. Holmstead and Blake; ~~but~~ seed beds and nursery were established in the Sullivan House Garden in Stanley. Scots pine, Corsican pine, Austrian pine, Sitka spruce, Pinus insignis, Maritime pine and Norway spruce were successfully raised in seed beds and lined out. During October 1925, 30,000 two and one year seedlings were planted at Hill Cove and the nursery was stocked with 40,000 one and two year seedlings. Unfortunately, none of the last appear to have reached the site prepared for them at Hill Cove. Of these planted at Hill Cove, only Pinus sylvestris and Picea sitchensis remain on an acre where they have been protected from stock. They appear to be a practically complete stand and are ten to eleven feet high. They were planted in rows, three feet apart each way in association with Corsican pine and another pine (either 'insignis' or Austrian pine), but only dead stumps indicate where these last two have been. Unfortunately, the paddock was returned to the donors in 1929, and stock have been grazed over all but one acre of it ever since. In spite of this there remain clumps of spruce, which, during recent years, have taken a new lease of life and appear very healthy.

The Forestry Officer reported that Common Alder, Ash, Mountain Ash,

of the beach.

In 1924 the Forestry Officer introduced broad leaved trees and conifers from Britain and grew seedlings of conifers in seed-beds in Stanley.

A plantation was made on Mount Low, about 1923, in a position sheltered from the westerlies but with a south-easterly aspect. It was found to be satisfactory, but in 1926 there were still an apparently complete row of stunted Podocarpus nivalis (S) twenty four to thirty inches high with gnarled trunks two to three inches in diameter. The surrounding bush was typically native wet scrub from which stock had been excluded. About three very unhealthy pines still persisted.

The majority of the Forestry Officer's work was planned at Hill Cove where a paddock of approximately ten acres was handed over to the Colonial Government by Messrs. Holmsted and Blake; but seed beds and nursery were established in the Sullivan House garden in Stanley. Scots pine, Corsican pine, Austrian pine, Sitka spruce, Pinus insularis, Maritime pine and Norway spruce were successively raised in seed beds and lined out.

but only in sheltered positions.

Hill Cove and the nursery was stocked with 10,000 one and two year seedlings. Unfortunately, none of the last appear to have reached the site prepared for them at Hill Cove. Of those planted at Hill Cove, only Pinus sylvestris and Pinus sitchensis remain on an acre where they have been protected from stock. They appear to be a practically complete stand and are ten to eleven feet high. They were planted in rows, three feet apart each way in association with Corsican pine and another pine (either 'insularis' or Austrian pine), but only seed stands indicate where these last two have been. Unfortunately, the paddock was returned to the donors in 1929, and stock have been grazed over it but one acre of it ever since. In spite of this there remain clumps of spruce, which during recent years have taken a new lease of life and appear very healthy.

Seen

The Forestry Officer reported that Common Alder, Alnus incana, and Mountain Ash,

Birch, English Elm, Wych Elm, Sycamore, and Black Italian Poplar which were imported as trees from Britain had failed completely, and that the conifers so imported had fared little better (17th. August 1925, unpublished).

In all, about six acres were planted at Hill Cove, after the area had been drained with ditches at fifteen yard intervals and holes twelve inches in circumference and fourteen inches deep had been prepared. It seems probable that the trees were handicapped during their first years by the accumulation of water in the holes for even in the spring of 1940 water was still observed to lie in some of these. This is to be expected when such holes are dug in peat that is as impervious as that which is characteristic of the Colony.

The failure of the broadleaved trees at Mount Low or Hill Cove does not mean necessarily that they are totally unsuited to the Colony for in gardens in Stanley are odd specimens of Sycamore, Wych Elm, Mountain Ash, Birch, Laburnum, Hawthorn and Apple all of which thrive in sheltered positions.

Other Stations at which trees have been established for varying periods (though probably not exceeding twenty five years) are Weddell Island, Port Stephens, Roy Cove, Teal Inlet and Carcass Island, while a few thrive very well at the shepherd's house at Mount Sullivan, the only inland station in which they have been cultivated. At most of these places predominance has been given to Cupressus macrocarpa, which appears to have been introduced about 1926. This tree is equally as good as the Nothofagus mentioned above, and probably more useful, but less pleasing to the eye. At Roy Cove, however, Sitka spruce and Scots pine planted in a sheltered valley near the Manager's house are very vigorous and have put on up to thirty six inches of growth during a season. Seed gathered from this plantation has failed to germinate as has all the seed harvested from C. macrocarpa in the Colony.

At Teal Inlet the vegetable garden is well sheltered with Willows and Scots pines, but there are many other species of trees growing ^{within} in the shelter of these and damson plums set fruits which however do

English Elm, Scotch Elm, Sycamore, and Black Italian Poplar which were imported as trees from Britain had failed completely, and that the conifers so imported had fared little better (17th August 1925, unpublished).

In all, about six scores were planted at Hill Cove, after the area had been drained with ditches at 12 foot intervals and holes twelve inches in circumference and fourteen inches deep had been prepared. It seems probable that the trees were handicapped during their first years by the accumulation of water in the holes for even in the spring of 1926 water was still observed to lie in some of these. This is to be expected when such holes are dug in peat that is as impervious as that which is characteristic of the Colony.

which is one of the principal reasons for maintaining

Dept. of Agriculture

MC

The failure of the broadleaved trees at Mount Low or Hill Cove does not mean necessarily that they are totally unwanted in the Colony for in gardens in Stanley and odd specimens of Sycamore, English Elm, Mountain Ash, Birch, Laburnum, Hawthorn and Apple all of which thrive in sheltered positions.

Underline →

Large grows like a weed here?

MC

A few thrive very well at the shepherd's house at Mount Sullivan, the only inland station in which they have been cultivated. At most of these places Probanance has been given to Larix macrocarpa, which appears to have been introduced about 1926. This tree is equally as good as the Roburata mentioned above, and probably more useful, but less pleasing to the eye. At Roy Cove, however, Sitka spruce and Scots pine planted in a sheltered valley near the Manager's house are very vigorous and have put on up to thirty six inches of growth during a season. Seed gathered from this plantation has failed to germinate as has all the seed harvested from L. macrocarpa in the Colony.

At Teal Inlet the vegetable garden is well sheltered with willows and Scots pines, but there are many other species of trees growing with to the shelter of these and damson plums set fruits which however do

not ripen.

Though trees are healthy and vigorous in the locations mentioned they are in all cases in small numbers and cover but a small area, so that the visitor, expecting to see a plantation, and used to plantations in other climates, is disappointed; but considering the peat, the slow rate of growth, the general lack of sustained interest in innovations, the difficulties in obtaining stocks, and the disappointments associated with unsuitable types an exceptionally severe frost, or the breakage of a fence which allows farm stock to browse on the young plants (to say nothing of circumventing the individual who sees in the rank grass within the plantation ^{area} a needed fodder for his horse during a hard winter) the success that has been attained is praise-worthy, and is in each case almost entirely due to the faith, energy and drive of an interested individual.

Gorse has long been used as a shelter and live fence about some of the home paddocks. It shelters more than the stock, for the growth of pasturage is both earlier and more abundant on the eastward side of such fences. If shelter plantations could be provided more or less systematically throughout the Colony they would modify very greatly the severity of the climate. I have read of a Russian method of providing shelter belts that has been claimed to force the wind up from the ground so that a large expanse of land behind the plantings is sheltered. Whether ^{the terrain here} ~~this Colony~~ is too broken for such a method to be successful has to be determined, but there is no doubt that shelter would improve both the pasturage and the stock, and reduce the stock losses due to exposure. Since the prevailing winds come from a westerly (north-westerly to South-westerly) direction, the belts should be planted in a north to south direction to provide the greatest benefit.

Trees grow on the western parts of Chile and Tierra del Fuego, some species to the water's edge, and though the soils there are much better, they do not, perhaps, differ so greatly from soil types on some of our coastal areas and outer islands as to preclude experimental plantings of trees.

About a ~~1,000~~ ^{betuloides?} ~~N. obliqua~~ were collected by the Director during a trip to Puerto Arturo in February 1946 and are lined out in a nursery in Stanley with a few *Lena dura* (*Myriophorum* sp.) and *Canelo* (*Drinys winteri*). Both of the last named species are coastal plants, ~~and~~ ^{an} excellent specimen of the ~~last~~ ^{Canelo} is growing in the Government House Gardens. They appear to require top shelter during early growth.

~~An account of the experimental plantings carried out since 1939 under control of H. R. Evans, Supervisor, Government House Gardens is submitted in Appendix XX and notes concerning the species tried in Appendix XXI.~~

~~In Appendix XXI is listed a number of species which grow in Alaska, some at an elevation of 2000 ft, and many of which would appear to be worthy of trial in the Colony.~~

detached?

About 1,000 plants were collected by the Director during a trip to Puerto Arzobispo in February 1916 and are listed out in a nursery in Stanley with a few less (see Appendix 22.) and (see Appendix 23.)

Most of the managements are fully conscious of this - the workhouses in particular are bad.
M.C.

An account of the experimental plantings carried out since 1913 under control of H. E. Evans, supervisor, Government House Gardens is submitted in Appendix XX and notes concerning the species tried in Appendix XXI.

~~Part VII (renumbered VI) is a~~

reiteration of what we all know and might be omitted.

*Omit this Part
inc.*RURAL ECONOMY.

A very great improvement could be made in the social conditions in the camp and I can record with pleasure that the representatives of the owners in conference with the representatives of Labour Federation have agreed to improve the living conditions in the cookhouses and to provide more quarters for married men. In 1940 the Department acted in an unofficial capacity as a kind of labour exchange. It was then practically impossible to find quarters for newly married men with the camp experience who wished to commence their married lives in the camp, but accommodation was almost invariably offered them in the cookhouses, which, if accepted, would necessitate their wives remaining in Stanley. Owing to the movement of labour during the war, and ~~the~~ emigration, the position is not acute now from labour's point of view, but the owners are ~~placed in the position of~~ *confronted with the necessity of* making conditions sufficiently attractive to encourage more labour into the camp.

To this end wages have been increased, and improvements to living quarters have been promised; but we cannot expect rapid changes, when only in 1940, the owners of one station were reported to have refused to provide water sanitation in a manager's quarters, on the grounds that "peat mould had been good enough for them".

However, I believe, that there is now a changed outlook and that both sides realise the difficulties and will be satisfied with such reasonable progress as can be made, backed by ~~the~~ ^a sincere intention to continue the improvement.

However, these improvements relate mainly to housing and living conditions. The camp workers are greatly handicapped in other ways, particularly from the educational and recreational aspects and from lack of communications.

A number of shepherds cannot read sufficiently easily to gain enjoyment from reading. They have difficulty in understanding broad-

STANLEY B. DOUGHERTY

A very great improvement could be made in the social conditions in the camp and I can record with pleasure that the representatives of the owners in conference with the representatives of Labour Federation have agreed to improve the living conditions in the cookhouses and to provide more quarters for married men. In 1930 the Department acted in an official capacity as a kind of labour exchange. It was then practically impossible to find quarters for newly married men with the camp experience was almost invariably offered them in the cookhouses, but accommodation was almost invariably offered them in the cookhouses, which, if accepted, would necessitate their wives remaining in Stanley. Going to the movement of labour during the war, and the migration, the position is not so acute now from labour's point of view, but the owners are placed in the position of making conditions sufficiently attractive to encourage more labour into the camp.

Lack of education

To this end wages have been increased, and improvements to living quarters have been provided; but we cannot expect rapid changes, which only in 1930, the owners of one station were reported to have refused to provide water sanitation in a manager's quarters, on the grounds that "best would have been enough for them".

The Blyths

However, I believe, that there is now a changed outlook and that both sides realize the difficulties and will be satisfied with such reasonable progress as can be made, backed by the owners' intention to continue the improvement.

However, these improvements relate mainly to housing and living conditions. The camp workers are greatly handicapped in other ways, particularly from the educational and recreational aspects and from lack of communication.

A number of shepherds cannot read sufficiently easily to gain enjoyment from reading. They have difficulty in understanding broad-

casts, even news items from Britain, and, through no fault of their own, are scarcely in a position to help with the education of their children. Education in the camp is ^{effectively} chiefly by travelling teachers, though during the past four or five years, three or four small schools have been established in settlements where there are several children. The standard of education throughout the Colony is not high, and suitable teachers are scarce, so that the authorities are faced with the problem of whether any teacher is better than none at all. But with even the best of travelling teachers, very little progress can be made unless the parents can assist the child during the interval between the teacher's visits. This lack of education is the greatest handicap to any scheme of improvement, whether it be of agricultural or of social or of economic conditions; and coupled with it, is the obstinacy of the uninformed.

In the past, the long winter evenings were spent partly in making fancy gear for the horse, but this art is dying. There has been no other real handcraft industry, and the main relaxation has consisted of shooting, fishing or riding to a neighbouring shepherd's house for a Sunday or to the main settlement for a dance. Since 1940 there has been a quickened interest in spinning, and a few housewives have developed a very small trade in home spun wool which they sell for knitting. There is, undoubtedly, a limited market for similar products of local industry, such as hand woven goods made from home spun wool, and at least one family in Stanley has acquired ^{a fair} knowledge of the use of local plants as dyes, (though with little knowledge of the use of mordants). The few products that have been produced could have been sold several times over. During the stay of the Garrison some sixty to seventy sweaters made of natural black and white home spun wool were sold to soldiers; in fact, the demand was much greater than the supply. Such products would be purchased by the personnel of visiting ships, tourists and other visitors to the Colony, for there is little that can be bought as a souvenir, that is typically a product of the Islands.

There are other ways in which the people in the camp could be helped, if the help ^{was} offered tactfully. There are practically no

True but unremediable

I entirely agree with D. Cobbs

disagree with Sir A. Cardinal on this point

Land owners might be urged to lease sections to families who have rendered them good service; but unfortunately there is a grave shortage of labour + I think it highly unlikely that the families referred to would look at the offer. A steady income approach more than standing on their own feet, alas.

me

labour saving devices in the houses, and much waste occurs through lack of knowledge of methods of circumventing it. There is little of the competitive spirit that makes for interest and efficiency. Existence has been easy, and the Administration a rather over benign father, so that very few are capable of, or seek to undertake responsibility, or to break new ground; and, in fact, that there is little opportunity for the land is held in large sections which are completely beyond the means of the average inhabitant, and trade is largely in the hands of vested interests which control freights and sea transport.

The opening of the country by roading would change the economy completely and would result in the establishment of one or two hotels and perhaps villages, besides facilitating travel, but here haste should be made slowly and the types of roads that were used in the early development of other lands would be sufficient for the time being. The knowledge that the doctor could arrive in a matter of hours where it now takes days, and the ability to send children to school, perhaps twenty miles by bus would relieve parents of the greater burdens that are now associated with raising a family in the camp.

I am sure that the land owners could do much to make conditions in the camp more congenial even if it were only to withdraw their opposition to roading, and I commend for their consideration the suggestion that they provide good sections on their farms which might be leased by those who have rendered them good service, so that the local boy can at least aspire to possess and develop for a period, a part of his native land. At present there is little future for any lad born in the Colony. He may become a navy boss, or shepherd boss with their remunerations of £12 per month plus meat, milk, house and peat, or if he is very lucky he may become a senior clerk in the Public Service; but because of the inability to acquire secondary education in the Colony he stands little chance in either his own country or foreign lands, unless his parents can afford to send him to school overseas.

labor saving devices in the houses, and much waste occurs through lack of knowledge of methods of circumventing it. There is little of the competitive spirit that makes for interest and efficiency. Hence has been easy, and the Administration a rather over benign father so that very few are capable of, or seek to undertake responsibility, or to break new ground; and, in fact, that there is little opportunity for the land is held in large sections which are completely beyond the means of the average inhabitant, and trade is largely in the hands of vested interests which control freights and sea transport.

The opening of the country by trading would change the economy completely and would result in the establishment of one or two hotels and perhaps villages, besides facilitating travel, but here haste should be made slowly and the types of roads that were used in the early development of other lands would be sufficient for the time being. The knowledge that the doctor could arrive in a matter of hours where it now takes days, and the ability to send children to school, perhaps twenty miles by bus would relieve parents of the greater burdens that are now associated with raising a family in the camp.

I am sure that the land owners could do much to make conditions in the colony more comfortable if they would withdraw their objection to leasing, and I commend for their consideration the suggestion that they provide good sections on their farms which might be leased by those who have rendered them good service, so that the local boy can at least aspire to possess and develop for a period, a part of his native land. At present there is little future for any lad born in the Colony. He may become a navy boss, or shepherd boss with their remunerations of 250 per month plus meat, milk, horse and boat, or if he is very lucky he may become a senior clerk in the public service; but because of the inability to acquire secondary education in the Colony

Unusually progressive

the standard of living in the colony or foreign lands. His parents can afford to send him to overseas.

Admin. valuation



R E C O M M E N D A T I O N S

Any recommendations designed to improve the productive capacity of the Colony must be prefaced by an outline of the objective of such improvement. During the past five years the ^emen employed in the sheep industry, including managers and owner-managers have produced an annual gross return of something more than £470 each. This is possibly one of the highest per caput productions from sheep farming in the world, but it is offset by the fact that the average gross return per acre is in the neighbourhood of one shilling and sixpence, and per sheep seven shillings and sixpence. Now, if the ultimate object is to produce wool at a minimum cost, there is probably little improvement that can be made unless it be a reduction of the costs of freights and actual running expenses; but if the criterion of good management is measured by the total production of the Colony or the production per acre or per sheep, there is undoubtedly, great scope for improvement and progress. It will doubtless be argued that the costs of improving production per acre are quite ~~out of~~ proportion to the possible returns, ~~especially by those who are satisfied with the present return per man employed, and who dislike the additional work and responsibility that such improvements will bring to them.~~ *well to remember that it is* But it is ~~not~~ the men who produce the wool nor the sheep but the *improvement of the latter is therefore fundamental.* pastures on which the sheep feed, *which* It is not suggested that money should be spent on projects ~~that~~ *show* no chance of bringing a reasonable return, *for* those who wish, there are several methods of increasing ~~the~~ production per acre at an economic outlay.

~~Therefore,~~ *T*he following recommendations are made on the hypothesis that the most desirable condition from the point of view of the Colony as a whole is the fullest use of the land commensurate with the greatest economic production and the maintenance of a reasonably high standard of living for those engaged in the industry. ~~To those who are content to take all from the land and return nothing until such time as the present methods methods of ranching become unprofitable, these recommendations will mean nothing.~~

They are submitted under three heads:

RECOMMENDATIONS

Any recommendations designed to improve the productive capacity of the Colony must be preceded by an outline of the objective of such improvement. During the past five years the men employed in the sheep industry, including managers and owner-managers have produced an annual gross return of something more than £170 each. This is possibly one of the highest per head productions from sheep farming in the world.

True but true; we do our best
MC.

and per sheep seven shillings and sixpence. Now, if the ultimate object is to produce wool at a minimum cost, there is probably little to be gained by the reduction of the costs of freight and actual running expenses, but if the criterion of good management is assumed to be the total production of the Colony or the production per acre or per sheep, there is undoubtedly, great scope for improvement and progress. It will doubtless be argued that the costs of improving production per acre are quite out of proportion to the present return per acre of wool.

By work - presumably agricultural work

I think we have been inclined to beat the New Zealand drum too vigorously. Let us first be sure of a market and then send for an expert to manage it. It is not a question of the sheep industry but of the Colony as a whole. The present return per acre of wool is £170 each. This is possibly one of the highest per head productions from sheep farming in the world.

MC.

should be spent on projects that show a reasonable chance of bringing a reasonable return. For those who wish, there are several methods of increasing the production per acre at an economic outlay.

Therefore, the following recommendations are made on the hypothesis that the most desirable condition from the point of view of the Colony as a whole is the fullest use of the land commensurate with the greatest economic production and the maintenance of a reasonably high standard of living for those engaged in the industry.

I don't think we must let D'Arbuthnot dictate to us as to where we should get our man from.

- (1) Administrative.
- (ii) Means of Improving the ~~production~~ ⁱⁿ of the ~~Present~~ ^{sheep ranching} Industry.
- (iii) New Industries which can or might be developed.

Administrative.

Considerable knowledge, experienced, and, above all, tenacity of purpose, are necessary to develop the potentialities of the Colony. Such development is greatly handicapped by isolation, (an average of but twelve inward mails per annum), a relatively short and cold growing season, and a notable discontinuity of administrative policy.

It is not reasonable to expect one man to possess all the detailed knowledge that is necessary, and, alone, he would waste much time in referring to literature, with which he may be unfamiliar, for technical knowledge on subjects with which he has to deal. The work should be guided by an energetic, highly qualified and highly experienced Head. He requires the assistance of at least two young officers, one qualified in Veterinary work, and with a sound knowledge of the breeding and handling of sheep, and the other qualified in the agronomy and agrostology of temperate zones, with a sound practical experience of cultural methods and operations. [~~This latter officer should have a knowledge and experience of the Canadian or New Zealand methods of certifying seed potatoes.~~]

The assisting officers must be specialists, experienced and practical for they will have to teach the details of innovations to the local people; they must be of equal relative qualifications to ensure mutual respect; and because they are specialists the Head must be more highly qualified ^{than either} and possess a broad practical outlook so that he can lead them, appreciate their difficulties, direct and co-ordinate their work, and relieve them of the interruptions and digressions of administration.

[It would be preferable to secure the Agriculturalist and also perhaps the Director from the Southern Hemisphere, for they would have less trouble in orienting themselves to local conditions than if they came

or eg. the Outer Hebrides!

(1)
(11)
(111)

Administrative

But then young men should be trained overseas!

mc

We are all aware of this — it is unnecessary to rub it in. mc

Unfortunate term here!

from the Northern Hemisphere. New Zealand would appear to be the natural recruitment area, since the pasture plants, and the farming methods are comparable, and there are in both Islands large areas of land that are not greatly dissimilar from those of the Falkland Islands.

The specialists would, no doubt each require an assistant to ^{help} ~~assist~~ with experimental work in the field and to make routine observations, but these could be recruited and trained locally, and would grow up with the work. Such assistants would undertake the routine duties of stock inspection, tuberculin testing and seed certification leaving the specialists free to pursue research. *

Agricultural Education.

~~There is no secondary education worthy of the name in the Colony, and for this reason very few are in a position to appreciate the potentialities of the Colony or to visualise the practices that may be described in treatises on agriculture. The difficulties of describing such operations as the harvesting and threshing of seeds, the advantages to be secured from liming, the use of fertilizers or even the principles of cultivation or stock breeding to those who have never seen them practised, or read about them, have to be encountered to be understood.~~

~~Under such conditions,~~ ^{As} teaching by practical demonstration will bring the most rapid results, ←

I recommend ~~therefore~~, the establishment of an Agricultural Institute designed to provide education and vocational training in agricultural subjects and to carry out ~~of~~ both applied and fundamental experiments. This should be associated closely with a Demonstration Farm on which the findings of the Institute ^{can be} ~~are~~ applied on a commercial

(* It is impossible to incorporate instructional duties satisfactorily with inspectional or policing work).

Very involved?

Me

As I do not intend to accept this proposal there is no point in elaborating it in

The Report. Delete as indicated []

Not a word about farmers as members of

The Committee.

About the only real objection to the Ansari

Farm was its distance from Stanley.

Administratively impossible

Not easily (or cheaply) by road

Me

devoted to instruction, experimentation and research,
 basis. The Institute, ~~because of its nature and outlook~~ would not be
 expected to run at a profit. ^{activities of the} The Demonstration Farm should be limited
 to the application of ^{i.e. methods which have been proved in the Institute} proved economic methods, and any fodder,
 stock or produce ~~that~~ it received from the Institute should be accounted
 for, ~~at a reasonable price.~~

These two institutions should be directly under the control of the
 Director of Agriculture. ~~The specialist officers of the Department~~
 should be, simultaneously, officers of the Institute and vice versa,
 and draw part of their salaries from each in proportion to the amount
 of time they gave to each institution. (This is different from drawing
 all their salary from one and debiting the other ^{for} services rendered,
 and is to my mind essential to harmonious working of such institutions
 in a small colony. It also assures that both institutions receive
 the benefit of the experts' knowledge and experience, as the work must
 be ~~performed in each before remuneration is received~~.)

~~The specialists should be ex officio members of the advisory
 committee of the Demonstration Farm.~~ I consider that the separation
 of Experimental work from Demonstration is essential to progress, for
 without knowledge of the economics of an innovation, the Government is
 not in a position to advise the industry. ~~The site of the Anson
 Farm would be ideal for an Agricultural Institute and is on good
 ground while adjoining it the blocks 3, 4, ^{and} 57 to 64 would make a
 useful Demonstration area containing some of the poorest land in the
 Colony. A similar combination of areas consists of the Albermarle
 Reserve and the Port Stephens property, but the distance from Stanley
 would bring administrative difficulties. Reasonable access to the
 Anson property could be easily provided by launch or road.~~

(The reader should differentiate between "Demonstration"
 and "Reclamation" though no doubt "Reclamation" would be
 "Demonstrated".)

A simpler land tax is the best answer with all
of it returnable as subsidy for improvements. e.g.:-

- For
Freight on artificial manures.
- Fencing + ditching
- Planting, grasslands, food crops etc.

A survey is an essential preliminary to the imposition of a
land tax.

[] *mc*

Keep for memo DO

For later consideration; delete
meanwhile []

8
BRS

[If money is to be spent on such projects the industry must be encouraged to accept and apply the findings. At present there are representatives of absent owners who have not seen any of the Department's experiments near Stanley. I understand that legislation has been passed in Southern Rhodesia and adapted to the requirements of Tanganyika to provide for the development of resources that may be lying idle in private hands. This legislation is rather cumbersome for application in a small Colony where it is difficult to be impersonal, and in its place I would suggest a land tax on unimproved property (or alternatively, a tax on the profits* that are exported from the Colony), in either case to be refunded on a pound for pound basis for money ^{spent} on permanent improvements approved by the Director of Agriculture or other authorized person. In order to assure that improvements will receive approval the details of the improvements for the following year, together with an itemised budget of estimated expenditure etc. should be submitted by say 1st. June in any year and approved before 1st. September. The tax must be deposited on the due date and would be refunded only on the satisfactory completion of the work within the specified time, together with a statement of expenditure supported by copies of receipts.]

[The Director of Agriculture ^{should} ⁱⁿ ^{general}, approve only schemes which had been proved to be economic or near economic, but would have the power to withhold approval or limit the expenditure approved on schemes which had not been sufficiently tested. I suggest that the industry could afford to provide approximately 10% of its gross receipts annually in permanent improvements, which would amount to approximately one penny three farthings per actual acreage of the holdings, or say 20% of the profits exported each year. Application for refund of the tax supported by a statement of expenditure together with receipts, and a description of the work completed would have to be made within a given period, and any accumulated funds should be earmarked for developmental work of a profit bearing nature, and of general value to the Colony. In such a scheme

(* This would be more equitable in that it is related to the annual profits, but would be difficult to collect; ~~and open to various forms of evasion.~~)

If money is to be spent on such projects the industry must be encouraged to accept and apply the findings. At present there are representatives of absent owners who have not seen any of the Department's experiments near Stanley. I understand that legislation has been

passed in Southern Rhodesia and adapted to the requirements of Tanganyika to provide for the development of resources that may be lying idle in private hands. This legislation is rather cumbersome for application

in a small Colony where it is difficult to be impersonal, and in its place I would suggest a tax on unimproved property (or alternatively a tax on the profits that are exported from the Colony), in either case to be refunded on a pound for pound basis for money on permanent improvements approved by the Director of Agriculture or other authorized person.

In order to assure that improvements will receive approval the details of the improvements for the following year, together with an estimated budget of estimated expenditure etc. should be submitted by say 1st June in any year and approved before 1st September. The tax must be deposited on the due date and would be refunded only on the satisfactory completion of the work within the specified time, together with a statement of expenditure supported by copies of receipts.

The Director of Agriculture should, however, approve only schemes which had been approved by the Government, but would have the power to withhold approval or limit the expenditure approved on schemes which had not been sufficiently assessed.

I suggest that the industry could also be provided with receipts and that in permanent improvements, which would amount to approximately one-third of the total value of the holdings, or only 50% of the value of the improvements. Application for refund of the tax supported by a statement of expenditure together with receipts, and a description of the work completed should have to be made within a given period, and the accumulated funds should be earmarked for developmental work of a permanent nature, and of general value to the Colony. In such schemes

which had not been sufficiently assessed.

Application for refund of the tax supported by a statement of expenditure together with receipts, and a description of the work completed should have to be made within a given period, and the accumulated funds should be earmarked for developmental work of a permanent nature, and of general value to the Colony. In such schemes

accumulated funds should be earmarked for developmental work of a permanent nature, and of general value to the Colony. In such schemes

I have already proposed this

Me

How does one bring down legislation

Me

Agreed and done

They have been gradually whittled down

it is essential that the due dates for submission of schemes for approval, for the payment of the tax and for the expiration of the period during which a refund can be claimed must be fixed and strictly adhered to.]

Finally, I recommend that the Director of Agriculture be ex-office a member of both the Executive and Legislative councils. In this Colony there is ^{at present} but one industry, sheep farming, and the ^c councils should have the advantage of the constant attendance of the official most closely connected with this industry, especially as farming is a subject on which almost every man feels he is sufficiently qualified to argue and adjudicate. The Director of Agriculture and his Inspectors are, normally, more frequently in the camp than other officials and are able to speak of matters concerning the camp with understanding based on experience gained often at different seasons and under different conditions. I feel strongly, in view of the damage that may be done to a programme of agricultural improvement, through misinformed or partisan argument, in the legislative chambers, that this recommendation should be ~~acceded to.~~ *adopted.*

Legislation should be ~~brought down~~ *enacted*

- (a) to revise the Livestock Ordinance, so that it covers all stock in the Colony and provides powers for quarantining any station on which stock have contracted a contagious disease.
- (b) to provide regulations designed to prevent the entry of seeds of weeds which may become troublesome in the Colony.
- (c) To provide regulations to control the quality and grading of produce, specially potatoes, that may be exported.

~~The Colony is small and presents circumstances that are unusual so that the Department has entered into dairying and vegetable growing; and is the sole supplier, in Stanley, of hay and turnips for stock fodder. These activities were commenced chiefly to prove the possibilities. Though they are scarcely permanent activities of the Department of Agriculture, they are now linked with the economy of the township. As they are being carried out in the township on isolated pieces of ground they are not really economic enterprises;~~

It is essential that the Government should be prepared to meet the approval of the people for the project which a period of time should be allowed to adhere to.

Finally, I recommend that the Director of Agriculture be authorized to call a number of both the Executive and Legislative Councils in this Colony there is but one industry, sheep raising, and the Councils should have the advantage of the constant attendance of the official most closely connected with this industry, especially as farming is a subject on which almost every man feels he is sufficiently qualified to argue and deliberate. The Director of Agriculture and his inspectors are generally, more frequently in the case than other officials, in touch with matters concerning the sheep with understanding based on experience gained often at different seasons and under different conditions. I feel strongly, in view of the damage that may be done in a programme of agricultural improvement, through misinformed or partisan argument, in the Legislative Councils, that this recommendation should be accepted.

See ...

Legislation should be brought forward to revise the Livestock Ordinance, so that it covers all stock in the Colony and provides powers for maintaining any station on which stock have contracted a contagious disease.

7

I have not found any Gilvante opposed to the Dept. as regards seeds of weeds other than those which I can handle. me

~~The Colony is small and permanent circumstances that are unusual so that the Department has entered into dairying and vegetable growing and is the sole supplier in Stanley, or any other township for stock fodder. These activities were commenced chiefly to provide the possibilities. Though they are necessary permanent activities of the Department of Agriculture, they are now linked with the economy of the township. As they are being carried out in the township on limited pieces of ground they are not really economic enterprises.~~

but were they carried out on a special area or a nearby farm ^{*} the expenses of production would be greatly reduced. It should be the subject of future administration ^s to encourage local enterprise to undertake this work, though at first it may be desirable to provide tractor and implements for ^{use} use on hire. The handing over of these activities to private enterprise ^{will} would reduce the revenue of the Department and part of the expenditure, but ^{will} would enable the staff to concentrate on ~~developmental experiments.~~

Recommendations concerning the ^methods of ⁱmproving ^production of the Present Industry.

→ *Sheep farming*

The Department of Agriculture is still relatively new. ~~I gather that the community believes that no one can appreciate the peculiar problems of sheep farming in the Colony unless a long apprenticeship has been served on the spot.~~ ^{A belief is entertained} I might mention that the principles here are the same as in other parts of the world, and that an experienced man should be able to orient himself to local modifications within eighteen to twenty four months. ^{with exceptions} But ^{yet} the industry has not been accustomed to experimental work or innovations, and does not realise the benefits that may accrue from them. [The owners of the smaller properties, who reside in the Colony are, for the most part, very interested and co-operative; but though the managers of the larger properties have been friendly personally, they are in principle, opposed to an Agricultural Department, and the Sheepowner's Association has petitioned the Secretary of State requesting the closing down of the Department on the ground that it is 'unnecessary and redundant'.]

(* A suitable area for such operations would be the land from Canopus to the Narrows, which is at present leased at a nominal rental from year to year for the production of about a hundred lambs for Christmas).

It was closed down largely by the personal
undervaluation of Avernus Hudson, many farmers have
lamented this precipitate ill-considered action.
F.I.C. said to have been behind this. M.C.

They invited me to address them within
3 months of my arrival. We had a most cordial
meeting. M.C.

But since the transport belongs to
the F.I.C. what is the answer? M.C.

I do not know the answer to this
problem: one of the F.I.D.S. ships which got in the
south would help but is only a partial solution.
M.C. - it is very difficult.

[This is a repetition of their attitude towards the Anson Experimental Farm, which was closed down in 1928 within three years of its establishment. However, the present petition has not been acceded to. It is hoped that the attitude of the industry will change and I would suggest that the greatest progress will be made when it takes a constructive interest in the work of the Department and Institute. During the six years I have been in the Colony, the Sheepowner's Association has conducted annual meetings, but have not to my knowledge invited any Government Official to address them, or even to be present at any of their meetings; nor have they, since July 1940, as a body found time to accept an invitation to visit any experimental area established by the Department.]

[I suggest that such a policy is very short sighted; and would recommend that at least one session of the annual meetings be devoted to a round table discussion with Officers of the Department, on work of the Department and problems that face the industry.]

My remaining recommendations under this section refer to matters that have been discussed in the main text of the report. But hardly any of them are possible of development with the present restricted transport facilities and policy - a policy that gives absolute precedence to the carriage of wool, a commodity which is not perishable, and of which there is at present a great surplus in the world. Even during the war when the provision of fresh vegetables for the local Garrison was of paramount importance, the local steamer was on occasions too full of wool, to take on even two tons of potatoes though it called at the particular port but twice per year. Since I have been in the Colony, such produce has been carried chiefly as deck cargo, and during the winter is subject to injury by frost.

~~Through such a restriction the vested interests are in a position should they desire to exercise their power, to kill quietly and very plausibly any new venture. The assurance of sufficient accomodation~~
of
for freighting materials inwards (fertilizers, seeds and fencing materials etc.) and for the distribution of produce within the Colony
 in addition to that which is exported, is an essential pre-requisite/

We should consider the possibility of a
freezer at an early opportunity, but ^{Market}

The SOA are unable to give me a unanimous
opinion on the freezing venture nor have they suggested
a resumption of the American traffic ^{Pursue}

me

See also Davis on this recommendation

me

to any development, especially if the produce is perishable.

With this reservation I offer the following proposals: -

~~Subject to this my recommendations are as follows:~~

on stations
 (a) A change should be made in the proportions of stock carried by reducing the numbers of wethers and increasing the ewes, with a view to providing the basis of a frozen meat industry and the ability to produce a surplus of young stock suitable for freezing. Though this may reduce slightly the amount of wool available, the ultimate returns from meat will more than balance it. In the early stages the animals should be exported to South American Freezing works, but later as the quantity of first class animals increases a freezing works could be established locally.

(b) Investigations should be commenced by a qualified veterinarian ~~and~~ into the cause of mortality of young sheep, with special reference to mineral nutrition, with a view to reducing mortality and providing a surplus of young sheep suitable for freezing.

(c) Greater care should be taken to assure mothering of lambs after marking, and to this end quieter shepherding should be practised throughout the year. The practice of sitting on a ridge and shouting to disturb the sheep so that cast sheep may be identified is not conducive to easy handling. It would be much better in the long run if the shepherd moved quietly among the sheep or worked them quietly with a dog under good control. The sheep would learn also that they could not get away, and ^{would} become quieter.

(d) Special supplementary grazing should be provided for the hoggets both after weaning and during the early spring when they are changing their teeth. Special consideration should be given to tussac (*Poa flabellata*) and sword grass (*Carex trifida*). Investigations should be made to determine whether the losses and ~~po~~verty of hoggets may be due to the presence of internal parasites, and if so suitable treatment should be given them.

to my development, as well as the welfare of the sheep.

With this view, I offer the following proposals -

And the expense and labour of gathering.

A change should be made in the proportions of stock carried by reducing the numbers of wethers and increasing the ewes, with a view to providing the basis of a frozen meat industry and the ability to produce a surplus of high quality mutton for freezing.

It would be interesting to know what the losses are after shearing; this year the weather was particularly inclement the sheep looked miserable after leaving the shearing sheds.

Investigation should be conducted by a qualified veterinarian into the cause of mortality of young sheep, with special reference to the cause of mortality of young sheep, with special reference to the cause of mortality of young sheep, with special reference to the cause of mortality of young sheep.

Greater care should be taken to ensure protection of lambs after marking, and to this end special attention should be paid throughout the year. The practice of sitting on a ridge and shearing to disturb the sheep so that each sheep may be identified is not conducive to easy handling. It would be much better in the long run if the shepherd moved quietly among the sheep or worked them quietly with a dog under good control. The sheep would learn also that they could not get away, and become calmer.

Special supplementary grazing should be provided for the lambs both after weaning and during the early period when they are changing their teeth. Special consideration should be given to weaning lambs at an early age (3-4 months).

I find no support for this proposal from the Farmers

(e) A concerted drive should be undertaken to eliminate the ked commonly known as sheep tick, from the Colony, for when this is done there would be no need to dip the sheep annually, and the expense and labour of dipping could be eliminated, provided the quarantine procedure were efficient.

(f) Some shelter should be provided for animals especially after shearing. This could be in the form of gorse hedges, or by the erection of sod or stone walls in paddocks where the natural shelter is scarce.

(g) The grazing of pasturage should be better controlled through the sub-division of existing paddocks into areas of similar pasture types, and the concentration of sheep on smaller areas, moving them from time to time as the pasturage becomes eaten out, and following them with cattle to eat down rank growth that has been left by the sheep. The cattle should not be grazed simultaneously with the sheep For this purpose the numbers of cattle should be increased.

(h) The land should be drained by well-placed ditches designed to catch the surface moisture as it runs down the slopes, or emerges from springs and ponds, and should be consolidated by intermittent heavy stocking with sheep and cattle.

(i) Every effort should be made to introduce a leguminous plant into the native pastures. The method of introducing white clover at an economic cost has been demonstrated. Lotus major, lucerne (Medicago sativa), birds-foot trefoil, (Medicago lupulina) and suckling clover (Trifolium dubium) would probably also prove useful plants.

(j) The wool should be classed primarily on count, and secondarily on condition. I would like to see, say a hundred bales sent experimentally to New Zealand to be passed through a large re-classing store which has earned a good reputation for its work, half the bales to be sold in the packs as shipped and half (taken at random) to be

(c) A concerted drive should be undertaken to eliminate the... commonly known as sheep tick, from the Colony, for when this is done there would be no need to dip the sheep annually, and the expense and labour of dipping could be eliminated, provided the guarantee proce-

Is he suggesting that we should sell our wool in NZ?

This is carrying coals to Newcastle with a vengeance. S. Africa would be nearer?

Mc

tion of sod or stone walls in pastures where the natural shelter is scarce.

(d) The grazing of pastures should be better controlled through the sub-division of existing pastures into areas of similar pasture types, and the concentration of sheep on similar areas, moving them from time to time as the pastures become eaten out, and following them with cattle to eat down rank growth that has been left by the sheep. The cattle should not be grazed simultaneously with the sheep for this purpose the numbers of cattle should be increased.

(e) The land should be drained by well-placed ditches designed to catch the surface water as it runs down the slopes, or emerges from springs and is collected by intermittent heavy stocking with sheep and cattle.

What opportunity is there in fact?

Mc

(f) Every effort should be made to introduce a leguminous plant into the native pastures. The method of introducing white clover as an economic crop has been described in the report on Income (Leguminosae), Birds and Insects, and the method of introducing clover (Lolium hybridum) would probably also prove useful.

It should be controlled.

Mc

(g) The wool should be classed primarily on count, and secondarily on condition. I would like to see, say a hundred bales sent experimentally to New Zealand to be ginned through a large re-classing store which has earned a good reputation for its work, half the bales to be sold in the packs as shipped and half taken at random to be

sold through the bins under the store's brand, at the same sale. [This suggestion is made in the belief that a ship may be making the trip between the Falkland Islands and New Zealand with presumably comparatively little freight, and that the subject is of real interest to the Directors of the shipping company.] I have no doubt that the standardization of classing would bring to the Colony the benefits that Government grading of other produce has in other parts of the world.

(k) In view of the shortage of labour, labour-saving equipment such as swath turner, sweeps, stackers, chaff-cutters, ditchers etc. should be imported for the farms, and hand implements such as wheeled hoes with sundry attachments for the vegetable gardens.

(l) In view of the static or even falling tendency of the population of the Colony, particularly in the camp, I commend to the owners for their serious consideration the provision of sections of not less than ten thousand acres on the mainland or say six thousand acres on an island which could be leased by employees who had served the owners well over a period of years. To a young man, there is at present, no future or goal worth striving for in the Colony, and naturally the best and most ambitious of the population emigrate if the opportunity arises.

(m) Burning the rank grass should be avoided, and can be by sub-division and intermittent grazing with higher concentrations of stock; but until such sub-division has been achieved burning is a necessary evil. ~~Its~~ ^{The} practice appears to be well understood; but in those few cases when the peat actually takes fire inoculated white clover and grass seeds (cocksfoot, timothy, creeping red fescue, crested dogtail, brown top, and Poa pratensis) should be sown.

(n) Because in many places the coasts, and, particularly, the islands are characterized by better pasture associations than inland areas (indicating higher soil fertility), I believe that it would be worth while ~~carrying out~~ ^{conducting} experimental irrigations with salt water lifted to the top of a suitable ridge by pumping and carried thence in open

But I killed off the lucerne

I have arranged to take back the Peninsula grant which will help the grazing problem

For early cons^m by new AO.

McC

AT

prohibited

John

ditches for irrigating the experimental area. Sea water brings with it all the minerals that may be lacking in our peat, and it seems possible that wind borne spray may have been responsible for the better carrying capacity of the islands. The maintenance of suitable pumping unit is not heavy.

(o) Introduce the methods of artificial insemination for especial use with high priced rams that may be imported, though these should be used primarily on pure bred ewes of the same breed. The introduction of scientific principles of stock breeding and particularly of culling would do much to 'even up' both the qualities of ^{both the} wool and stock.

(p) It is possible that better lambing percentages would accrue during tugging, if the ewes were gathered daily and held quietly in small mobs for say thirty minutes or more by the shepherd.

(q) Recommendations Concerning the Common. The Common does not supply satisfactory grazing for milking-cows. In view of the changed condition since the registration of dairies and sale of milk, the cows have tended to pass into the ownership of a few people only. It should be possible to graze all the cows on three hundred to four hundred acres of improved Common ground and it is recommended that say three hundred and fifty acres be fenced off to the South of Murray Heights and improved for the special use of the Registered Dairies. This area should be subdivided (by electric fences) and used for a scheme of rotational cropping so that hay, green fodder, roots and pasture could be provided for milking-animals. Access to this area could be obtained from the present 'no man's land' (which serves as a distribution area for the different sections of the Common) through one of the pensioner allotments that has reverted to Government Control. Probably 25% of the dairy cattle at present on the Common would be grazed solely on this area, and this would reduce the demand for grazing on the rest of the Common.

(r) To control the growth one more subdivision fence is desirable on the remainder of the Common. And a long term scheme for the intro

discuss for irrigating the experimental areas. See water brought with
all the minerals that may be lacking in our past, and it seems possible
that wind borne spray may have been responsible for the better carrying
capacity of the islands. The maintenance of suitable pumping unit is
not heavy.

(2) Introduce the methods of artificial insemination especially
use with high priced rams that may be imported, though these should be
used primarily on pure bred ewes of the same breed. The introduction
of scientific principles of stock breeding and particularly of culling
would do much to 'even up' both the qualities of wool and stock.

The Disunity Committee's report is not very

(3) It is possible that better lambing percentages would secure
during tupping, the ewes were gathered daily and held dutifully in small
folds for say thirty minutes or more by the shepherd.



(4) Recommendations concerning the Common. The Common does not
apply satisfactory grazing for milking-cows. In view of the change

condition since the registration of entries and sale of milk, the cows
have tended to pass into the ownership of a few people only. It should
be possible to lease all the cows on three hundred to four hundred per

Ask Gibbs re there.

and fifty acres be fenced off to the south of Murray Heights and in-
proved for the special use of the registered dairies. This area

Alquianer.

should be used for a scheme of ro-
tational cropping of that hay, green fodder, roots and pasture could
be provided for milking-animals. Access to this area could be obtained

Capital cost too great?

the grains since from

from the present 'no man's land' (which serves as a distribution area
for the different sections of the Common) through one of the pasture
allocations that has reverted to Government control. Probably 25% of

the dairy cattle at present on the Common would be grazed solely on
this area, and this would reduce the demand for grazing on the rest of
the Common.

(5) To control the growth and more subdivision fence is desired
on the remainder of the Common. As a long term scheme for the future

duction of clover to the Common by the strip method of sowing should be undertaken.

Recommendations Concerning Industries New to the Colony.

~~The Colony is at present entirely dependent on the wool industry for its welfare. It would be in a much stronger economic position if some other industry or preferably several industries could be developed. Its climate, soil and geographical position are not unfavourable to other forms of farming or agricultural production. Apart from agriculture, there are several other possibilities worthy of consideration, but which I am not qualified to comment on. Those that come first to the mind are fishing the Burwood Banks for South American markets (mentioned most recently by Captain Sheppard, O.B.E., who has considerable experience of the fishing industry in Newfoundland); extracting minerals from sea water (one of the great difficulties of which is the selection of a site where the supply is not diluted by the water which has been extracted - there are several locations ^{in the Colony} where this could be easily avoided in the Colony) - glass making (if only for building-bricks); compressing the peat for sale as fuel in South America; the cultivation of oysters of the type that thrive in Foveaux Strait (to the South of New Zealand,) concerning which is a brief report submitted as Appendix); and the utilization of the kelp that lines our coast. Other possibilities that have been suggested by recent visitors to the Colony who had some knowledge of the matters on which they spoke are distillation of whisky, for export to South America; brewing of beer for local consumption (there is excellent water in certain places and the importations of beer during 1939 amounted to £14,000). The grain or malt for these industries is available in South America and in normal times can be imported at an economical cost.~~

(a) New industries based on agricultural activities that would provide a living for a number of small families are the production of Seed Potatoes, certified (as to trueness to name, freedom from certain diseases and having been harvested from a crop, with less than a specified small percentage of other diseases that are difficult to eradicate) on the principles laid down under the Canadian or New Zealand certification schemes.

Recommendations Concerning Industries New to the Colony.

The Colony is at present entirely dependent on the wool industry for its welfare. It would be in a much stronger economic position if some other industry or industries could be developed. Its climate, soil and geographical position are not unfavorable to other forms of farming or agricultural production. Apart from agriculture, there are several other possibilities worthy of consideration, but which I am not qualified to comment on. Those that come first to the mind are fishing

Ask Curber to check this as a return to NZ

the Burwood Banks for South American markets (mentioned most recently by Captain Spang, O.E.S., who has considerable experience of the fish- ing industry in Newfoundland); extracting minerals from sea water (one of the great difficulties of which is the location of a site where the supply is not diluted by the water which has been extracted there are several locations where this could be easily avoided in the Colony) -

Government Farm? small holder

glass making (if only for building-bricks); compressing the peat for use as fuel in South America; the cultivation of oysters of the type that thrive in Torvaux Strait (to the South of New Zealand), concerning which a brief report submitted as an appendix; and the utilization of the kelp that lines our coast. Other possibilities that have been suggested by recent visitors to the Colony who were conversant with the matters on which they spoke are distillation of whisky for export to South America; brewing of beer for local consumption (there is excellent water in cer- tain places and the importations of beer during 1933 amounted to £14,000).

We could add an enquiry

through the Commercial Secretary to the Embassy

M.V. ? Shipping

The grain or malt for these industries is available in South America and in home countries.

Could only be incorporated with the

sheep freezer; canning plant disposed of

long ago.

provide a living for a number of small families and the production of seed potatoes, certified (as to freedom from certain diseases and having been harvested from a crop, with less than a specified small percentage of other diseases that are difficult to eradicate) on the prin- ciples laid down under the Canadian or New Zealand certification schemes.

(b) The production of swede and late turnip seeds, from crops that were free from Phoma lingam, a seed borne disease that causes such loss in these crops in New Zealand, that growers have been heard to offer ten shillings to twenty shillings a pound for seed that could be guaranteed free from this disease. By sowing suitably treated seed here complete isolation of the crop could be secured, and disease free seed obtained. I have no doubt that if the supply were assured a market could be found in New Zealand.

(c) Encouragement should be given to the development of local markets for such produce as can be provided locally, with special consideration to dairy produce and vegetables.

(d) The production of vegetables under glass for out-of-season production, and of tomatoes, cucumbers, marrow, french beans etc. during the summer. There is scope for at least one to two acres under glass for such purposes, (and perhaps the glass could be produced locally since the surfaces need not be planes).

(e) The export to South American markets of the few vegetables which cannot be produced satisfactorily under the warmer conditions of Uruguay and Argentina. Since our products would not compete with local products, I believe that the South American Governments would not prohibit the importation of reasonable quantities of swedes, gooseberries, rhubarb and out of season strawberries and raspberries (February-March).

(f) The canning or freezing of upland geese for marketing in South America and Britain. This would necessitate a closed season to maintain supplies, for there is little doubt that geese, well presented and in good condition, would bring ten to twelve shillings a head on the British market.

PART IX.*Delete - nobody
will refer to them.**line*MATERIAL CONSULTED.

- Atkins, William, 1917-1919:
Stock Inspector's Annual Reports. Falkland Islands
Gazettes, 9, 1917; 9, 1918; 10, 1919.
- Ayres, Q.C. and Scoates, D. 1939:
Land Drainage and Reclamation. 2nd. Ed. xii + 496 pp.
New York.
- Baker, H.A. (1924):
Final Report on Geological Investigations in the Falk-
land Islands, 1920-1922. 1 map + 50 pp.
- Beaty, T. 1940:
Report on the Activities of the Department of Agricul-
ture for 1939. (Unpublished). (File Ag. 8/1/1).
- - - 1940:
Report on the Possibility of Producing Surplus Veget-
ables in the Camp. (Unpublished) (File Ag. 8/2/2).
- - - 1940:
Report on the Activities of the Department of Agricul-
ture for six months ending 30th. June, 1940. (Unpub-
lished) (File. Ag. 8/1/1).
- - - Report of a tour of West Falkland on s.s. Fitzroy, July
15th - 26th, 1940. (Unpublished)
- - - 1941.
Report on a tour of West Falkland 30th. December,
1940 - 20th. February, 1941. (Unpublished).
- - - 1941:
Report on tour of Camp of East Falkland, March 16th.
to 21st. and April 11th. - 30th. 1941. (Unpublished)
(File. Ag. 8/2/2).
- - - 1942: Report on tour of West Falkland, May 1st. to
June 16th. 1942. (Unpublished). File Ag. 8/2/2).
- - - 1942:
Stock Inspector's Report for the Year Ending 30th.
June 1942. (Unpublished). (File Ag. 8/1/1).
- - - 1943:
Stock Report for the Year ending 30th. June, 1943.
(Unpublished). (File Ag. 8/1/1).
- - - 1943:
Report on tour 7th. July to 31st. July, 1943. (Unpub-
lished). (File Ag. 8/2/2).
- - - 1944:
Report on grass Experiment, Douglas Station, Novem-
ber, 1944. (Unpublished). (File Ag. 8/2/2).
- - - 1944:
Report on Teal Inlet - San Carlos trip, 1944. (Un-
published). (File Ag. 8/2/2).
- - - 1944:
Stock Report for the period 1st. July - 30th. Novem-

- ber, 1944. (Unpublished). (File. Ag.8/1/1).
- Bonner, A.M. 1935:
Stock Inspector's Annual Report, 1934-35. Falkland
Island Gazette, No.14, pp. 153-158.
- Boyson, V.F. 1924:
The Falkland Islands: with notes on Natural History
by Rupert Vallentin. 414 pp. Oxford.
- Brown, B.A. 1920-23:
Stock Inspector's Annual Report. Falkland Islands
Gazettes, No.12, 1920; 14, 1921; 2, 1923;
- Clement, W.H. 1934:
Stock Inspector's Report, 1933-34. Falkland Islands
Gazette, No.6, 1934.
- Cunningham, I.J. 1944:
Copper Deficiency in Cattle and Sheep. Occurrence and
Control in New Zealand. New Zealand Journal of Agri-
culture, vol,69, No. 6, pp.559-569.
- Davies, William. 1939:
The Grasslands of the Falkland Islands. x + 86 pp.
Crown Agents.
- Gibbs, J.G. 1941:
Report of a tour of the Camp during the Spring 1940
and Summer 1941. (Unpublished, File Ag. 8/2/1).
- - - 1941:
Annual Report of the Department of Agriculture for the
Year ending 30th. June, 1941. Falkland Islands Gaz-
ette, No. 16, pp.115-120, 1941.
- - - 1943:
Report on a trip to Magallanes, 30th. November to 3rd.
December, 1942. (Unpublished, File Ag. 8/2/1).
- Hutyra, F. & Marek, J. 1926: Special pathology and therapeutics
of the Diseases of Domestic Animals. 3 vols. 3rd.
authorised American Ed. Edited by Mohler, J.R. & Eich-
horn, A. London.
- Linton, R.G. and Williamson, G. 1943:
Animal nutrition and Veterinary Dietetics. xx + 510
pp., 2nd. ed., Edinburgh.
- Marshall, S. 1939:
Unpublished Report dated 29th. July, 1939. (File Ag.
8/2/2).
- Middleton, J. 1924:
Memorandum on the Sheep Farming Industry in the Falk-
lands. 33 pp. Waterlow and Sons.
- - - 1924:
Speech at the meeting of the Legislative Council, 23rd.
July, 1924. Falkland Islands Gazette. No.10, pp.87-94,
1924.
- Munro, H. 1924:
Report of an Investigation into the Conditions and
Practice of Sheep Farming in the Falkland Islands.
57 pp. Waterlow and Sons, London.

- Norris, T.C. 1933:
Some Falkland Island Problems. Notes made during a Visit, February 12th. to March 3rd, 1933. (Unpublished, File Ag. 8/2/4)/
- Orr, Sir J.B., 1924:
Report on the Analysis of Samples of Grasses and Soils sent from the Falkland Islands. (Unpublished, M.P. 84/24, dated 2nd. December, 1924).
- - - 1929:
Minerals in Pastures, xvi+150 pp. Glasgow.
- Petterssen, Sverre, 1941: Introduction to Meteorology. x + 236 pp. York, Pa.
- Reid, James, 1922:
Report on Forest Trees, Seeds, and Cuttings etc., imported into the Falkland Islands. (Unpublished, dated 24th. April, 1922, M.P.915/20).
- - - 1923:
Report on the Progress of Forest Trees in the Falkland Islands. (Unpublished, dated 2nd. April, 1923. M.P. 236/23).
- - - 1925:
Report on Afforestation Experiments in the Falkland Islands for 1924-1925. (Unpublished, dated 17th. August, 1925, M.P. 549/25).
- - - 1926:
Report on Forest Trees. (Unpublished, dated 14th. April, 1926, M.P. 199/26).
- Robertson, J. 1901+09:
Annual Reports of the Stock Inspector. Falkland Islands Gazettes, No. , 1902; , 1903; 4, 1904; 3, 1905; 4, 1906; 4, 1907; 4, 1908; 3, 1909.
- Root, A.I. & E.R. 1940:
ABC and XYZ of Bee Culture. xvi + 813 pp. 1940 Ed. New York.
- Saker, Dora G. 1921:
Practical Dairying. viii + 128 pp. Norwich.
- Skottsberg, C. 1913: Botanische Ergebnisse der Schwedischen Expedition nach Patagonien und dem Feuerlande 1907-1909. III A Botanical Survey of the Falkland Islands. Kungl. Svenska Vetenskapsakademiens Handl. vol. 50, No. 3, pp.1-127, with 1 map & 14 plates.
- - - 1942:
The Falkland Islands. Chronica Botanica, vol. 7, pp. 23-26.
- Sudworth, Geo. E.B. 1908:
Forest Trees of the Pacific Slope. United States Forest Service, Department of Agriculture, 441, pp. Washington.
- Townson, H.W. 1910-16:
Annual Reports of the Stock Inspector. Falkland Is-

lands Gazettes, No.5, 1910; 3, 1911; 3, 1912; 5, 1913; 10, 1914; 9, 1915; 10; 1916.

Vallentin, Mrs. E.F., & Cotton, Mrs. E.M. 1921:
Flowering Plants of the Falkland Islands. xii + 64 plates. London.

Watson, James, A.S. & More James, A. 1944:
Agriculture. The Science and Practice of British Farming. viii + 869 pp. 7th. Ed. Edinburgh.

Weir, D?S.A. 1936-37:
Unpublished Reports on tours of the East and West Falklands, dated 24th. November, 1936; 4th. January, 1937; 11th. March, 1937; 22nd. October, 1937.

- - - 1938:
Report on Improvement of Pasture Lands on Stanley Common, and Other Lands in the Vicinity thereof. (Unpublished, File, Ag.8/1/1).

Symposium, 1940:
Some Experiences with Electric Fences (in New Zealand). Proceedings 9th. Annual Meeting of Sheep Farmers, Massey Agricultural College, (N.Z.) pp. 96-104.

United States Department of Agriculture, 1939:
Food and Life. Year Book, xvi + 1165 pp. Washington.