

SCIENTIFIC
(Forestry)
No. 698/22

1922

C.S.

Col. Secretary

SUBJECT.

192 2

Reports on trees imported, 1922.

10th October

Previous Paper.

915/20

496/22

MINUTES.

- Report by the Forest Officer dated 24 April 1922 _____ Encl ①
- Minute from H.E. the Governor of 15 May 1922 _____ Encl ②
- Despatch to S. of S. of 16th May 1922 _____ Encl ③
- Despatch No 90 from S of S of 14th August, with one enclosure A _____ Encl ④

Y. Submitted

ttttt 11/10/22

Private Letter from Inaji Dornien-Smith to Capt G. W. Hill dated 30th July 1922

H.E.S.

- The Forest officer should see the correspondence
- 2. Capt Hill is taking much trouble on the planting here: a letter which he received from Inaji Dornien-Smith is enclosed. Capt Hill has asked him to collect any seeds he can & send them to Kew for forwarding here.
- 3. It is unfortunate that inspection should prove

Subsequent Paper.

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that we get no snow frosts here. There was
snow frosts here in 1921 which was a snow winter
& in autumn of 1922. Seed of *Juniperus virginiana*
was sown in spring of 1921 & plants have been
put out in lines but they do not look robust.

Although winter of 1922 has not been snow the
Juniperus virginiana has not stood cold winds well this
spring.

4. Falkland Islands are about same latitude
as Campbell Island which is considerably further
south than Chatham Islands & Stewart Island.

J.R.
11 October 1922

Forest Officer

Replied accordingly

~~11/10/22~~ 11/10/22

Hon. Col. Secy.

Noted communication accordingly

James Reid
Forest Officer
28/10/22.

Letter from Captain A. W. Hill dated 21st Dec 1922
with list of attached of seeds supplied by
Major A. Dornier Smith.

Note: These seeds were received in middle of February 1923
and were handed over to the Forest Officer. The season
was too far advanced for planting & the seeds
cannot be planted until September - October 1923

J.R. 10 April 1923.

Report on forest trees, seeds, cuttings etc, imported into the
Falkland Islands.

On arrival of the first consignment of forest trees, those that survived the journey were ^{SHEUGHED} sheughed into trenches in Government House Garden. After a few weeks had elapsed the Hardwoods and a few of the Conifers began to show signs of activity. They were then put into lines in a vegetable garden at Sullivan House, where they were well sheltered with a 9 feet corrugated iron fence all round, and cross hedges of Veronica 4 feet high running North and South and East and West. They continued to do very well especially Common Spruce, Alnus Incana, Sycamore, and Black Italian Poplar. The Sitka Spruce, Scots Pine, Austrian Pine, Corsican Pine, Birch, Ash, English Elm, Wych Elm and Mountain Ash did not do so well. All came into leaf except the Mountain Ash which remained dormant.

In the months of July and August severe storms of frost and snow were experienced, with the result that many deaths occurred and those that ^{had} made young shoots were badly checked and blighted.

In September ¹⁹²¹ they were planted out at Pat Low, the ground which is mostly peat, covered with rough grass and Diddle Dee bushes, was drained, forced, partly cultivated and partly tamped. The cultivating hoe was employed to take the top sod off and break up the soil to a depth of 9 inches. Pumps were made with top sods and soil taken from the ground in ditching operations, all pumps being made 3 feet apart. The wedge shaped planting spade was used in planting operations,

also the common garden spade where fitting had to be adopted. The ground distance of planting was 3 feet apart over all.

The rough grass and Diddle Dee bushes were left untouched with a view to afford as much shelter as possible for the young trees.

In April 1922 after the growing season was past the trees were examined, the Scots Pine were found to have made the most growth, those planted on the turps showed little difference from those planted on the ground.

The average growth measured 3 inches a few others were found with $3\frac{1}{2}$, $3\frac{3}{4}$, and 4 inches. A great many had only their young shoots with leaves on them, the stems and older whorls of branches being quite bare. A few which were exposed to the prevailing West wind had their leaves all brown and blighted and the side that the wind had been striking most was quite bare. Others which were growing under the shelter of rough grass or Diddle Dee were in a much healthier condition being quite fresh and green.

The Austrian Pines made growths on an average of 2 inches, the majority looked fairly healthy and had retained most of their needles.

The Corsican Pines made growths on an average of $1\frac{1}{2}$ inches they did not look ~~so~~ ^{many} well, having been blighted ~~also~~.

The Common Spruce and Sitka Spruce failed entirely, the large ^{majority} ~~percentage~~ being dead, those that were alive looked in a bad condition, most of their leading buds had been nipped with frost and wind.

The Mountain Ash were breaking at the base and had shoots 3 inches long, many had burst into leaf 12 inches from the base but had been blighted with frost and wind.



The Wych Elm did nothing, the majority were dead and those ^{that were still} alive had very small growths at the base.

The English Elm were all dead, a number of plants were taken up and their roots were quite rotten.

The Common Alder had broken at the base and shoots 2, 3, and 4 inches were measured, a few had burst into full leaf but had been checked by wind and frost.

The Black Italian Poplar had also broken at the base some had burst into leaf 9 inches from the base but were blighted with frost and wind.


The Sycamore had a fair percentage with small growths but here again the young shoots were withered up and blackend.

The Common Ash did very little, a big percentage were dead, those that survived had come into leaf but made no growth.

The Birch were nearly all dead, those that were alive were in a bad condition and had their leaves withered up and blighted.

Alnus Incana. was not planted out at Rat Low being too small, they were lined out in the nursery and did fairly well, making an average growth of 8 inches. Here it was noticed ^{that} where they were growing in the nursery, a few yards alongside the shelter they did very well, but out in the middle of the lines where the wind was striking most they were severely stunted.

4



Cuttings & seeds received from Kew.

The cuttings of Poplars and Willows were inserted in Government House Garden in January 1921. From then onwards a good few deaths occurred.

The majority came into full leaf in February and March but made no growth. They remained in the garden and the following spring did exceptionally well especially *Salix daphnoides* which made an average growth of 3 feet. *Salix rubra* made an average of 2 feet, and *Salix triandra* 2 feet. *Salix purpurea* and *Salix fragilis* made an average of 15 inches. The Poplars that survived made an average growth of 8 inches, although they were inserted on a very bad piece of ground; they did well considering this handicap. While the cuttings of the Willows and Poplars were in full leaf they received a nasty check by early frosts in the first week of March, this damaging the leading shoots by cutting them back a few inches at the apex.

Seeds of Lycamore, Hornbeam, Birch, Alder, Ash, Laburnum and *Phormium Tenax*, were sown about the middle of January 1921. This proved to be too late, those that germinated got cut over with frost, and many never appeared above the ground. The ground was dug up the following spring and no signs of seed were found all having rotted away.

The *Phormium Tenax* plants which were smeared with tar on arrival at Port Stanley, have made little progress, a few of the plants died, having had their roots burned with tar, the survivors have now made fresh leaves and look much healthier.

Cuttings of the common Willow were taken from the bushes growing in Government House Garden and were inserted in lines in the nursery, they have made large growths averaging 3 feet 6 inches.

In ^{November} 1921 seed beds were made and sown with Scots Pine, ^{in December} this was found to be too late, but owing to the seed just arriving from England this could not be avoided. The seedlings are very small and are protected by rough frames made from packing cases. Many of them have damped off but a good few are left yet, which look like making strong healthy plants later, about 140 square yards were sown on beds 3 feet wide, in rows 4 inches apart. Small sowings of *Pinus maritima*, *insignis*, and *sylvestris* were made in the second week of October, these have done fairly well, a fine ^{BRAND} was got, the seedlings now measured 3 and 4 inches high.

Notes taken on Vegetation in general.

Strong cutting winds were experienced round Port Stanley in November 1921. The condition of trees, shrubs, and vegetables round Government House were noted. The Gorse and Veronica bushes suffered badly, all being blighted on the side exposed to the prevailing winds quite a number never survived others broke away at the base.

6.

The Vegetable Garden and nursery at Government House. is very well sheltered, being practically surrounded with corrugated iron fencing; ^{to} numerous buildings, ^{on the south side} and a dense gorse hedge. The whole area is divided into plots with cross hedges, of Willow, Poplar, Gooseberry, Currant and Veronica, many being double having a batter fence alongside. In spring, tree, flower, and vegetable seedlings suffered badly with the strong cutting winds. It was only close alongside the hedges that favourable results were met with. The wind seemed to strike down flat on the top and have a swirling action on the plants, with the result that many were torn out of the ground and others were twisted off ^{at} the surface of the ground.

The numerous Poplar trees growing in the garden have a very scrubby appearance. Where they have outgrown the shelter, their heads are cut off quite flat.

The strong winds in spring destroy the young growth, especially the buds and shoots at the apex of the branches, causing a fresh growth to break ^{out} at a bud further down the stem. It can be noticed where shoots have been checked in previous years, ~~and~~ that the length of growth between the two growth rings does not exceed $\frac{1}{8}$ of an inch. At the growth rings large swellings are found, showing where the young shoots have been damaged, at one time, and have formed a callous over to protect the wood from other enemies.

James Reid
Forest Officer

DATE.....

From Governor to Colonial Secretary.

~~14~~
2

The draft of a despatch to Sqs on
Experiments in tree planting is attached

J.R.

15 May 1922

Will you please see me have an extra (fleming) copy
of this despatch for Professor Bayley Bayley.

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3

FALKLAND ISLANDS.
No. 71.

GOVERNMENT HOUSE,
STANLEY,
16th May, 1922.

Sir,

With reference to Viscount Milner's despatch No. 117 of the 14th of October, 1920, I have the honour to transmit reports by Mr. J. Reid, Forest Officer, on the Forest trees and cuttings which were imported in December, 1920.

2. The earlier of these reports show that the trees, with the exception of Sitka Spruce, and the cuttings arrived in the Colony in good condition.

3. It had been suggested in paragraph 8 of Lieutenant-Colonel St.-Johnston's despatch No. 25 of the 17th of March, 1920, that a "Tree-Planting" reserve should be established on the Crown Lands of the peninsula, on which the town of Stanley is situated, as its position would be convenient and sufficiently exposed to afford a good test of the ability of trees to withstand weather conditions but on inspection the land was found to be unsuitable for an experimental plantation. Other sites were examined both from the point of view of their accessibility, as transport presented a practical difficulty, and from that of the protection which

the/

8th January,
1921. (2).
24th April, 1922.

THE RIGHT HONOURABLE

W. L. S. CHURCHILL, M.P.,

SECRETARY OF STATE FOR THE COLONIES.

the surrounding land would afford to young trees. The most suitable site, in the vicinity of Stanley, appeared to be on the eastern slope of Mount Low midway between Port William and Berkeley Sound. It is open to the east but on the west the ground rises sharply and there are protecting ridges on the south and north sides. In this position an area of approximately five acres was selected on which peat, to an average depth of three feet, overlies blue clay and rock. In February, 1921, main drains (2 feet deep, 9 inches wide at the base and 12 inches at the top) were cut parallel to the natural slope of the land at intervals of 50 yards. Side drains (1 foot deep, 8 inches at the base and 9 inches at the top) were cut at intervals of 12 yards.

3. It was originally intended that the trees imported in December, 1920, should be planted out in the following May but it was not possible to obtain, at the time, wire netting to make the enclosing fence proof against hares and planting was deferred until September. By that time many deaths had occurred and more trees were required to plant the ground which had been prepared. A further consignment of trees was therefore ordered from Messrs Dickson and Company, Chester. The trees ordered were 5,000 each of Common and Sitka Spruce and Scots Fir and 5,000 each Corsican and Austrian Pine. With the exception of the Austrian Pine the trees were shipped on the 3rd of November, 1921, but this consignment suffered so greatly on the voyage that none of the trees were received in a condition suitable for planting out. The Austrian

Pines, which were supplied later by Messrs Dickson and Company, Edinburgh, arrived in good condition in the end of January, 1922, and were at once planted out.

4. It will be observed that it was not possible to provide special shelter for the trees which have been planted out. The plants, which have been suggested for shelter, are Veronica Elliptica and Gorse but both grow slowly. There are no reliable records as to the rate of growth of the former but it has been observed that the growth of a hedge of it, which is not itself sheltered, has not exceeded two inches in the last twelve months. A Gorse hedge in the garden at Government House, which is sheltered by a corrugated iron fence, is nine yards wide and 6 feet high. The age of this hedge is not known but the plants were probably raised from a supply of 3 cwt. of seed which was received in 1843. Another hedge of the same plant, which was sown in the open 14 years ago, has an average height of two feet and a maximum height of four feet. Willows, the growth of which is more rapid, are being planted but they do not afford good shelter in winter.

From Secretary
of State No. 33
of 10th June,
1843.

C.O. to Crown
Agents No.
47325/20.

Crown Agents
to Colonial
Secretary 109
6/1351. 13th
October, 1921.

5. The order, which was given in September, 1920, for seeds of Scots Fir, Common and Sitka Spruce and Corsican Pine was overlooked by the contractor and the only seeds received up to December, 1921, were Scots Fir. Although late in the season steps were at once taken to sow the seeds in beds which had been previously prepared, the ground, which had already been cultivated and is provided with shelter, was available for a nursery except in the garden at Government House. A considerable part of the garden has been turned into a nursery

for/

for trees in order that the experiment of raising trees from seed may be tried under the most favourable conditions that are possible. Small sowings were also made in October, 1921, of *Pinus insignis*, *maritima* and *syvestris* from seed which had been obtained privately. Supplies of seeds of Sitka Spruce and Corsican Pine were received in April and will be sown in spring.

6. Supplies of seed of Scots Fir have been distributed to the following stations :-

Mr J. Robson, Port Louis
 Mr E. Slaughter, Darwin
 Mr G. J. Felton, Toal Inlet
 Mr R. Greenshields, Douglas Station
 Mr A. Pitaluga, Salvador
 Mr F. Langdon, San Carlos North
 Mr G. Dean, Pebbie Island
 Mr J. Hamilton, Beaver Island.

Small sowings were made in a few cases. The season was however too far advanced and at the time everyone was busily engaged in shearing. Sowings, on a scale which would afford any test of the experiment, cannot be made until next spring. Before that time seeds of Sitka Spruce and Corsican Pine will also be distributed and supplies of all seeds will be sent to other stations.

7. The reports of Mr. Reid, who has carried out the experiments with ^{commendable} ~~considerable~~ energy and perseverance show that

(a) The planting of imported trees has not proved successful and it is necessary to rely on trees raised from seed.

- (b) Conifers are less likely to fail than deciduous broad leaved trees.
- (c) The growth in Scots Fir has been better than in any other of the conifers which have been imported.
- (d) There is little difference in the growth of trees planted in turves and trees planted in the ground and after the turves have been turned up and exposed to weather the soil is blown or washed away leaving nothing but dry fibre.
- (e) The condition on arrival of the two consignments of Sitka Spruce, which was considered to be the most appropriate tree of all, do not admit of any estimate being formed of the possibility of this variety proving successful.

I have the honour to be,

Sir,

Your most obedient,

humble servant,

J. Middleton.

Royal Botanic Gardens, Kew,

July 28th, 1922. A

Sir,

I have the honour to acknowledge receipt of Colonial Office letter No. 31253/22 of July 15th, 1922, enclosing copies of despatches from the Governor of the Falkland Islands with reports by Mr. J. Reid, Forest Officer, regarding the possibility of afforestation in the Falkland Islands.

With reference to the final paragraph in His Excellency the Governor's despatch No. 69 of May 16th, 1922, I can find no authentic information as to the former existence of forests in the Falkland Islands.

The effect of constant and strong salt-laden winds on trees would be dwarfing and sheering. The heads might be expected to become dense, flat and most highly developed in the direction opposite to the prevailing wind. Trees with small hard-surfaced leaves might be expected to withstand the conditions better than trees with large and soft leaves. In large groups of trees those on the outskirts would protect the inner ones.

In the Scilly Islands and on the islands on the West coast of Scotland trees are plentiful and as a rule are not adversely affected by salt-laden winds but in a recent letter from Tresco Abbey, Scilly Islands, Major A.A. Dorrien-Smith refers to the damage recently caused by salt-laden winds to the young foliage and shoots of many of the trees on Tresco.

With young and recently moved trees damage of this kind is a serious matter, but with well-established

The Under Secretary of State,
Colonial Office,
Downing Street, S.W.1.

trees

trees and salt laden winds, do not cause very serious damage.

I have studied His Excellency's despatches and Mr. Reid's reports with very great interest and appreciate the useful work that has been done under the adverse conditions which prevail in the Islands.

With reference to Mr. Middleton's despatch No.71 paragraph 7, I agree that trees raised from seeds sown in the Islands are far more likely to succeed than trees imported from home especially as the establishment of our Northern Hemisphere trees is hampered by the inversion of the seasons.

The failure of many of the young trees imported from England in December 1920, should not I think be held to prove that tree-growing in the Falkland Islands is an impossibility.

From the Forester's Reports it is evident that the young trees experienced rather severe treatment. After being unpacked on December 30th 1920, they were laid in trenches in Government House Garden; a few weeks later they were planted in lines and then in September 1921 they were again disturbed and planted out in their permanent places. Had the trees been allowed to stand for another year in the nursery they would have become better acclimatised to the changed seasons and have been better able to battle against the adverse conditions of exposure and climate when planted out in their permanent places.

For a number of years the subject of forestry in the Falkland Islands can only be of an experimental nature but it is possible that as experience is gained ways and means will be found to overcome the adverse

conditions

DUPLICATE

1428



~~15~~
4

FALKLAND ISLANDS

NO. 90

STREET,

14 August, 1922.

Sir,

*No 69 in
90 16/20 attached
3/10/22*

With reference to your despatches Nos 69 and 71 of the 16th May, I have the honour to transmit to you, for your information, the accompanying copy of a letter from the Director of the Royal Botanic Gardens, Kew, relating to afforestation in the Falkland Islands.

2. I note with pleasure the appreciation of Mr. Reid's work expressed both by yourself and by the Director of the Royal Botanic Gardens.

I have the honour to be,

Sir,

Your most obedient,

humble servant,

(Signed) WINSTON S. CHURCHILL

GOVERNOR,

J. MIDDLETON, ESQ., C.M.G.,

etc., etc., etc.

28th July.

Copy.

698/22.

Tresco Abbey,

Isles of Scilly,

Cornwall.

July 31st 1922.

My Dear Hill,

Tree growing in the Falkland Islands.

I understand the climate had little or no frost, that it is boggy like the Chathams, and subject to sleet, heavy gales and much wet.

I recommend (1) Pinus insignis as the main shelter tree. (2) Olearia Traversii as the main shelter plant or small tree. Its wood is of considerable economic value for fencing purposes. Other small trees as shelter are (3) Corynocarpus laevigatus, (4) Pittosporum crassifolium, (5) Corokia macrocarpa, (6) Veronica gigantea.

These would make the foundation but will not grow in the acid undrained bog; but only in the drier rising grounds.

How can seed be sent?

I will supply seed of 1, 3, 4, and 6 from here in quantity, 2 must be got out there as a living plant somehow, 5 I might find some seed of.

On receipt of a definite order from you I will at once collect seed and send to you for shipment.

Yours etc.,

(Signed) Arthur Dorrien-Smith.



6 ROYAL BOTANIC GARDENS,
KEW, SURREY.

All communications should be
addressed to—THE DIRECTOR.

Dec. 21st 1922.

692/22

My dear Middleton

I think in one of my
letters I told you I had been
in correspondence with Major
A. A. Dorrion-Smith, Tresco
Abbey, Isles of Scilly about
some seeds of plants which
flourish at Tresco which might
be tried in the Falklands.

Dorrion Smith has just sent
me packets ^{seed of} of five different
plants in fair quantity and
I hope they may be of some
use to you. I fear

You may be too cold for them as the Scilly Island climate is milder than yours, but as all except the Pines come from New Zealand they may be able to stand your conditions.

I hope next time you write you will be able to give a more hopeful account of some of your planting work.

^{seedlings} If you can protect your ^{transplants} seedlings even with banks of earth I think you will give them a fair chance.

I am afraid this will reach you rather late in the New Year so good wishes, but one does not have many chances of sending you a line.

Yours sincerely
Arthur Hill

Seeds sent to Falkland Islands.

- 1 packet *Veronica gigantea*.
2 " s *Olearia Traversii*.
2 " *Pinus insignis*.
1 " *Corynocarpus laevigatus*.
1 " *Pittosporum crassifolium*.

received from Major A.A.Dorrien Smith.

(6)
698/22