

1921.

MIN/GEO/1#9

C.S.

Scientific (Minerals) (Research.)
No. 633/21

S. of S. Des No 58

SUBJECT.

1921

6th June

Previous Paper.

494/20

Line

Possibility of local preparation of.

S. O 294/20 774/22

MINUTES.

S. of S. Des No 58 of 6th June 1921

Encl 6

M.E. the Governor,

Submitted with C.S.494/20, containing the telegram to the S. of S. dated 26/2/21, and Mr. Martin's despatch No. 79 of the 19th August 1920.

B. Thompson

A. C. S. 23/7/21.

H.C.S.

S. O. 294/20 is attached

2. Please refer to D. Baker for any observations which he may desire to offer

3. Rain water from tank is generally used in Stanley: there is a reservoir near Admiralty College which is fed from Sapper Hill & is used in emergencies. Advise D. Baker kindly advise what specimens of water, if any, should

Subsequent Paper.

be sent to Imperial Institute.

27 July 1921.

Dr. Baker,
(Govt: Geologist)

Papers referred to you for your
observations accordingly. Please see C.S. 617/21
also sent to you with this.

A. C. S. 28/7/21.

Hon. Col. Sec.

With reference to the occurrence of Lime in the Colony:-
Lime, as calcium carbonate (CaCO_3) occurs in the
Colony in two forms (1) as a constituent of recent
shelly deposits found on beaches (2) as a constituent
of hard, compact grey limestone found occasionally
with the fossil-bearing layers of the Devonian -
Carboniferous rocks of the Colony.

In the case of occurrence (1) above, these beach -
deposits are by no means as common as has been
suggested. The deposit at Fitzroy is the only one of any
note that I have seen, and I should not describe it
as "very large". The material here appears to be
somewhat variable in character and quality, although
the whole of it would serve quite well to be burnt
for lime - production. An area of perhaps half an
acre (to the best of my recollection) covered to a depth
of about 2 feet, furnishes the best material.

The best example of occurrence (2) above, seen by
me so far, is that at Pebble Island, West Falkland,
at the low cliff section west of the settlement. The
site is that from which the celebrated fossils were
obtained in the time of Governor Allardyce. In fact
all the fossils here occur in nodules of limestone,
the nodules being themselves embedded in a
seam of limestone a few feet in thickness.
This occurrence is possibly the one alluded to by
the Stipendiary Magistrate Fox Bay, in his letter to
Hon. Col. Sec dated May 26th 1920 (G. C. 294/20, Encl. to despatch
No 79 of 19th Aug. 1920). Allusion is made to a beach "in the North
of this (West Falkland) Island."

I have also seen it stated in a German publication
on the Falkland Islands (circa 1900 - a book of
photographic views, with accompanying letterpress,
by one G. Schulz, I believe) that limestone occurs

Inside Minute Paper.

on the sides of Mount Osborne. I have had no opportunity, so far, of verifying this statement, but regard it as likely to be correct.

It would be desirable to arrange for an analysis of the Pebble Island limestone also, and I will, when opportunity offers, secure a suitable sample for shipment.

With regard to the further 2 lb. sample of the lime requested by D. I. D. in connection with the water-hardening experiments, the Fitzroy material should be forwarded.

2. With reference to the selection of water-samples for analysis: -

Rain-water from tanks will not be suitable. Water from the reservoir near Admiralty Cottage would be more suitable, and I suggest that a sample of this water be forwarded to D. I. D. with a statement to the effect that it is reservoir water. As there appears a possibility of concentration of the included solids in this water by evaporation, I suggest the sending of a second sample, taken from a running spring in the neighbourhood of Stanley - any suitable spring which is known to yield good water.

Herbert A. Baker,
Government Geologist,
28/4/1921.

H.E. the Governor

Submitted

K. Thompson
A.C.S. 29.7.21

H.E.S.

Arrangements should be made for obtaining 2 lb of limestone from Fitzroy.

2. With you please ask Colonial Surgeon

to arrange for taking of samples (to
be forwarded to Imperial Institute) of

(1) water from reservoir near Admiralty Club.

(2) water from Sappers Hill.

(3) water from Inch Pond.

(4) water from Moray brook.

(5) any other possible sources of supply for
Army.

H. H. Thompson

29 May 21

Hon! Colonial Surgeon,

For your information and

guidance please.

H. H. Thompson

A. C. S. 30/7/21.

Hon Colonial Secretary

May I be provided
with five (one gallon)
stone jars for three samples
of water please -

4/8/21. *F. H. Peane*

Colonial Surgeon

H.E. the Governor,

Submitted.

2. The necessary jars ^{required} may be purchase by
the Colonial Surgeon?

H. H. Thompson

A. C. S. 4/8/21.

H. H. Thompson
5 May 21

Hon:Colonial Surgeon,

The Governor has approved of
the purchase by you, of the Jars required.

W. Thompson
A. C. S. 5/8/21.

Hon Colonial Secretary.

(4) Samples of Water
herewith please. Delay in
obtaining these samples is
regrettable, but was unavoidably
owing to the very bad weather
that has prevailed.

12/10/21. *H. V. Pearce*
Colonial Surgeon

C.S.

Will you please pack these
jars and ship to the Imperial
Institute. The label should bear
a clear notice of the contents and also
the reference number 250/21. I will
also write to the Institute by this
mail.

TTTTT 12/12/21

The Hon. Col. Secy.,

A case containing these jars
and labelled "Ref. 250/21: Contents 4 one gallon
stone jars (Samples of water)", has been addressed
to the Imperial Institute and sent to the P.S.N.C.
Agents for shipment.

W. Moye
for Colonial Engineer.
18/10/21.

Letter to Imperial Institute 19th Oct 1921
Encl (3)

Govt. Geologist

Will you please see the
letter from the Mineral Resources
Bureau under cover of enclosure (2)
herein for report

19/X/21
TTTTT

Hon. Col. Sec.

This minute paper already
contains a report by me on the deposit of
shelly limestone at Fitzroy. The deposit
is, as Dr. Evans supposes, a superficial
one. It is, in fact, a raised beach, composed
of a mass of crushed clam-shells, which,
as the result of water-percolation, is now
being gradually transformed into a
compacted limestone. The deposit is only
very slightly (a foot or two) raised above
present sea-level. It is another of the very
numerous pieces of evidence that I am
accumulating showing that the Falkland
Islands are slowly rising.

The deposit could be worked without difficulty.
It is a simple matter of digging. Its extent,
however, is insignificant. It occupies perhaps
half an acre and cannot be of any great
depth (perhaps 2 or 3 feet). It would soon
be worked out. I see no reason why similar
deposits should not occur elsewhere in the
Islands, but have seen no others, so far.

The deposit seems to me to be unworthy
of the combined and continued attentions
of the Imperial Institute, the Imperial
Mineral Resources Bureau and the
Government Geologist.

Herbert A. Baker
Government Geologist.
21. 10. 21.

and the Government?

Y.M.

submitter

~~ttttt~~ 21/2/21

H.C.S.

I was on suggestion of W. Hamilton that samples of shelly limestone were sent for examination. Will you please send these papers to him for his information & for any observations which he may wish to offer.

H.

2500/1421

Mr. Hamilton

according to

~~ttttt~~ 26/2/21

Hon. Col. Sec.

Thank you. I have no further localities to add to those mentioned in my letter of 26th May 1920. ①

The chert in the North of West Falkland is I think at Shallow Bay, Hill Cove.

2. I would suggest that a notice as to the possibility of preparing this substance might be published for the information of those who have access to these "shell" beaches, in case they should desire to prepare smaller quantities of lime.

3. If the scheme would not be feasible it might perhaps be built at Fitzroy and the deposit worked on.

W. Hamilton
Magistrate, West Falkland
2500/10.21

4/3.

Submitted.

It scarcely seems worth while
taking further action now? ~~the~~

~~the report from the Imperial Institute~~
~~will as is usual be published~~
The
report from the Imperial Institute
will as is usual be published
as an Appendix to the Annual
Council Report

ttttt 31/12/21

H.E.S. I kept this paper in order to ~~submit~~ to D. Bala which I have now done.

Despatch as in draft attached may
go on: the cost of obtaining shells
deposits from Pigeon, is considerable. And
it is doubtful whether it would pay to
use of it for agricultural purposes nor
an experiment will be made in garden at
Yow Woon with supply which has been
obtained. The cost of quarrying limestone
at Pebb Island + transporting it would
be very heavy

8 January 1922

Despatch to S of S No 9 of 9th Jan
1922
Enclt.

C.S.O. No. 633/21

Inside Minute Paper.

Sheet No. 5

41.
Submitted with despatch

Tully 10/1/22

12 May 1922

Letter from Imperial Institute d 21 December 1921
Encl (5)

(1)

CS. 633/21

CC. 1.

FALKLAND ISLANDS.

No. 58.

DOWNING STREET,

6th June, 1921.

Sir,

With reference to your telegram of the 26th of February, I have the honour to transmit to you the accompanying copy of a letter from the Imperial Institute, forwarding a report on the sample of limestone referred to in Mr. Martin's despatch No. 79 of the 19th August, together with a copy of a letter which has been addressed to Dr. J. W. Evans on the subject.

2. I should be glad if you would forward, in due course, the sample of water desired by the Imperial Institute.

I have the honour to be,

Sir,

Your most obedient,

humble servant,

WINSTON S. CHURCHILL.

GOVERNOR

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

Copy

250/21

ENCLOSURE TO DESPATCH
No. 58 OF 6 June
IMPERIAL INSTITUTE

OF THE
UNITED KINGDOM THE COLONIES AND INDIA.

South Kensington.

London, S.W.7.

27th May, 1921.

Sir,

With reference to your letter No.9510/1921 of the 8th March last, I enclose a report on the results of the examination of the sample of limestone from the Falkland Islands which was forwarded to the Imperial Institute for investigation.

In the letter dated 26th May 1920 from the Stipendiary Magistrate, West Falkland, reference is made to three samples (A,B.and C) but of these only sample A, the crude limestone, was received at the Imperial Institute. Samples B, and C, however consisted simply of lime (slaked and un-slaked) made from the limestone in the Falkland Islands and it is not necessary to ask that further samples of these materials should be forwarded.

It will be seen from the report that the limestone should be quite suitable for the preparation of lime for adding to the water supply of Stanley in order to render it less soft, as suggested by the Administrator, but that before recommendations can be made by the Imperial Institute as to the quantity of lime required for the purpose it will be desirable to receive a sample of the water (about 1 gallon) for examination.

With reference to the question raised by the Stipendiary Magistrate as to the suitability of peat for lime-burning, no record is available at the Imperial Institute of any trials made with peat for this purpose, but it appears probable that it could be so employed. In view

however

The Under Secretary of State,
Colonial Office, S.W.

however of the large amount of ash produced in burning Falkland Islands peat (which judging from analyses made at the Imperial Institute may be as much as 10 per cent) it would be advisable to use a kiln of the "separate feed" type, in which the fuel does not come into contact with the limestone. The waste heat from the kilns might be utilised for drying the peat before burning.

I am, etc.,

(sd) Wyndham R. Dunstan.

IMPERIAL INSTITUTE
of the
UNITED KINGDOM THE COLONIES AND INDIA

REPORT ON
LIMESTONE FROM THE FALKLAND ISLANDS

The Limestone which is the subject of this report was forwarded to the Imperial Institute by the Crown Agents for the Colonies and is referred to in letter No. 9510/1921 dated the 8th March 1921 from the Colonial Office.

It was desired to ascertain whether the limestone was suitable, either alone or in admixture with other materials, for the production of building lime, and whether it would be utilised for hardening the water supplied to the town of Stanley.

DESCRIPTION

The sample weighed 1½ lb. and consisted of a very friable, slightly siliceous, dolomitic limestone.

RESULTS OF EXAMINATION

The material was analysed with the following results:

Lime	CaO	per cent. 49.70
Magnesia	MgO	2.65
Ferric oxide	Fe ₂ O ₃	0.52
Alumina	Al ₂ O ₃	0.20
Titanium dioxide	TiO ₂	trace.
Silica	SiO ₂	2.09
Sulphuric anhydride	SO ₃	0.35
Phosphoric anhydride	P ₂ O ₅	0.12.
Loss on ignition		44.26

This

This limestone would be quite suitable for the preparation of building lime, as the lime obtained on calcination would contain over 89 per cent of calcium oxide (CaO). Building lime of good quality should contain from 85 to 90 per cent of the oxide. The limestone could not be utilised for the production of hydraulic lime.

The lime could be used for hardening the water of Stanley, for which purpose it should be first slaked or converted into "milk of lime" with a little water, as in either of these forms it can be more readily mixed with a large volume of water. In this connection it would be desirable to forward to the Imperial Institute about one gallon of the Stanley water so that trials may be made to determine the most suitable quantity of lime which should be added to produce the desired effect. A further quantity of about 2 lb. of the limestone should also be supplied.

27th May 1921.

26387/1921

Bawning Street,

4 June, 1921.

Sir,

I am directed by Mr. Secretary Churchill to transmit to you, for your observations, the accompanying copy of a despatch from the Officer Administering the Government of the Falkland Islands on the subject of a sample of limestone, together with a copy of a letter from the Director of the Imperial Institute forwarding a report on the sample.

From O.A.G.F. Islands
19th August. 1921

1.1 27th May 1921

I am,

Sir,

Your obedient servant,

(Signed) G. GRINDLE

DR. J. W. EVANS, D.Sc., F.G.S.

FALKLAND ISLANDS.

No. 84.

Reference to previous correspondence:-
Secretary of State's Despatch No. 58 of
6th June, 1921.

Downing Street,
27th July, 1921.

Sir,

I have the honour to transmit to you for
your consideration the paper noted below on
the subject of Limestone Deposits in the
Falkland Islands.

I have the honour to be,

Sir,

Your most obedient,

humble servant,

WINSTON S. CHURCHILL,

The Officer Administering the
Government of the Falkland Islands.

Date.	Description.
1921.	
16th July.	From Imperial Mineral Resources Bureau.

M
ENCLOSURE TO DESPATCH

No.

84

OF

27 July

COPY 26387/1921.

IMPERIAL MINERAL RESOURCES BUREAU,

2, Queen Anne's Gate Buildings,

Westminster,

London, S.W.1.

16th July, 1921.

Sir,

The limestone deposits reported on at the Imperial Institute appear to be of excellent quality and suitable for use for all or any of the purposes suggested. The only question in my mind is whether it occurs in sufficient amount to be worth working. Apparently it forms a superficial deposit and a considerable amount of labour might have to be expended to obtain sufficient for practical purposes. On these points more information is desirable and Dr. Baker would be able to furnish a reliable report on the subject.

I am, etc.,

(Sgd) JOHN W. EVANS.

THE UNDER SECRETARY OF STATE,
COLONIAL OFFICE, S.W.1.

633/21.

19th October,

21.

Sir,

With reference to letter 250/21 which you addressed to the Colonial Office on the 27th of May, I am directed by the Governor of the Falkland Islands to inform you that a case containing four jars of samples of water taken from localities in the vicinity of Stanley has been forwarded to you.

2. In the sample taken from the reservoir there may be a possibility of concentration of the included solids by evaporation. The other samples are taken from running springs known to yield good water.

I am,

Sir,

Your obedient servant,

H. Henniker Heaton.

Colonial Secretary.

The Director of the Imperial Institute,
South Kensington,
London, S. W.

(4)

633/21

(4)

FALKLAND ISLANDS.

No. 9.

GOVERNMENT HOUSE,

STANLEY,

9th January, 1922.

Sir,

With reference to your despatch, No. 84 of the 27th of July, 1921 and connected correspondence, I have the honour to transmit copies of two minutes by Dr. H. A. Baker, D.Sc., Government Geologist on the occurrence of lime in the Colony.

2. Shelly deposits do not appear to occur so frequently as was supposed. The deposit at Fitzroy is reported to be insignificant but a small quantity of it has been obtained in order that it may be ascertained whether it is suitable for agricultural purposes.

3. Dr. Baker will visit Pebble Island at an early date and will report further on the occurrence of limestone there.

I have the honour to be,

Sir,

Your most obedient,

humble servant,

J. Middleton.

THE RIGHT HONOURABLE

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

SECRETARY OF STATE FOR THE COLONIES.

28th July, 1921
21st October, 1921.

No. 5169/21
Correspondence to be addressed—
"THE DIRECTOR,
IMPERIAL INSTITUTE,
SOUTH KENSINGTON,
LONDON, S.W. 7."
and the above number quoted.
Each letter should be confined
to one subject.

IMPERIAL INSTITUTE
OF THE
UNITED KINGDOM, THE COLONIES AND INDIA.

SOUTH KENSINGTON, LONDON, S.W. 7.

21 December, 1921.

Sir,

I have to acknowledge the receipt of your letter No. 633/21 of the 19th October, together with the four samples of water referred to therein, which are receiving attention.

I am, Sir,

Your obedient Servant,

Ernest Goulding
for the Director.

The Colonial Secretary,
Falkland Islands.

