

Cupola House,
26, Carlyle Square,
Chelsea. PM

July 9th 49
Wednesday

My dear O'Connell
we have a few
pieces doing here
on Tuesday next at
 $\frac{1}{2}$ past seven your
Conc. I believe among
the number. if you
are not engaged will
you do so

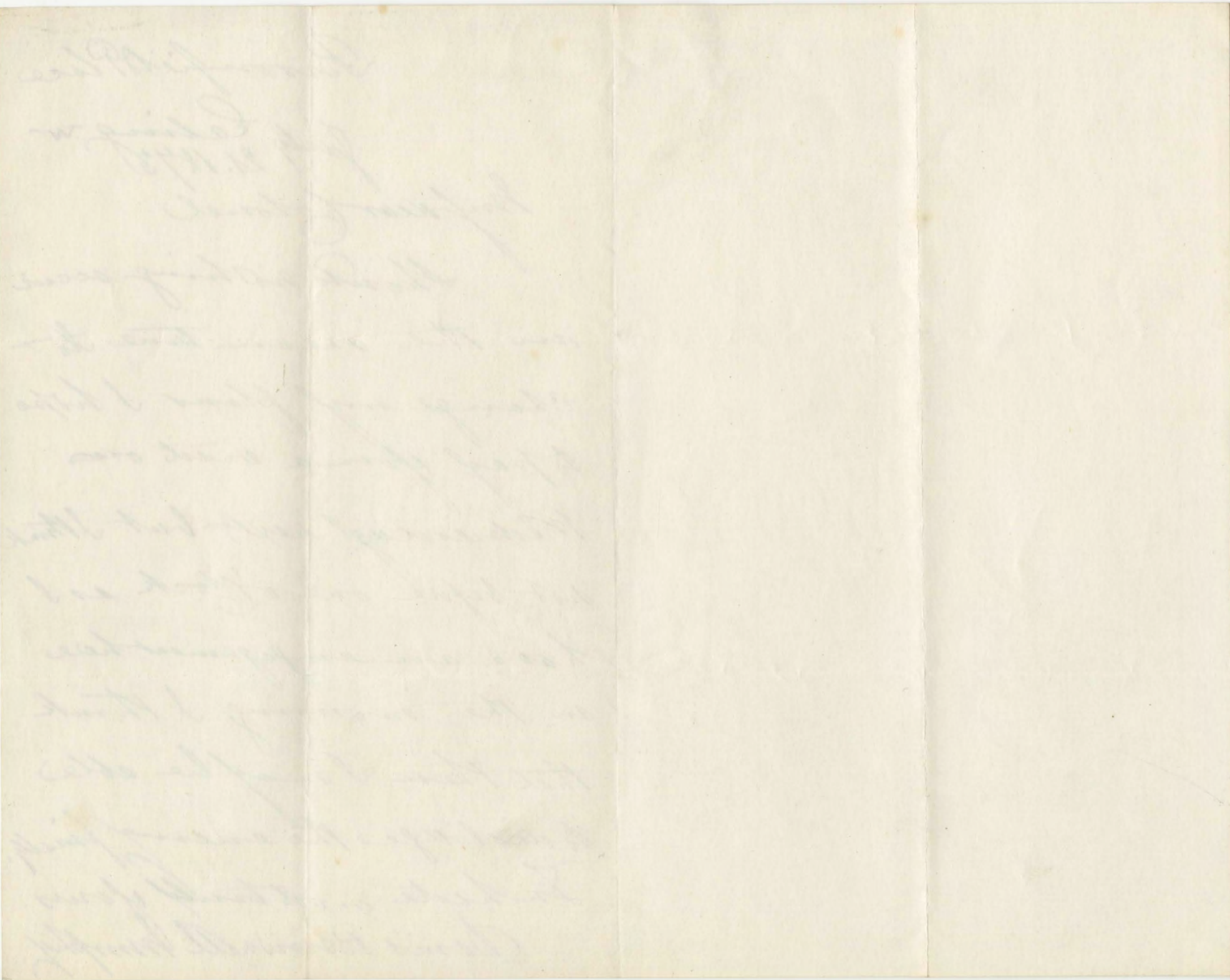
Sincerely yours
William Thackeray

Broomfield Place

July 21. 1843

My dear Colonel

Should nothing occur
in the mean time to
change my plans I hope
to pay you a visit on
Wednesday next, but I think
not before one o'clock as I
have an engagement here
in the morning. I think
that then I may be able
to dislodge the enemy finally.
In haste most truly yours
Denis Brownell Murphy



July 22, 1873

Colonel Richards
begs to inform
Colonel The Oghman
Mahon that it
is a week since
he sent the parcel
from his Brother
as addressed
to The O.G.M.'s
Club, The Civil

& Military in
Regent St, by
a Special messenger

22 July 1873



18, Lower Seymour St.,
Portman Square. W.

th
July 29. 1843

Dear Colonel,

Miss Mahon & Mr.
Delaney are going to Greenwich
to have a little plain dinner
on Thursday next. If you
Colonel I should have nothing
better to do, I would be glad
if you would join us, to be
a ^{Steyn} ~~thunderford~~ Boat Pair at



2 o clock precisely on -
Thursday next. an answer
by return of Post will oblige
as I have to write to Miss
Mahon. at Lunbury she
does not return until to:
Morrow Night.

With Kind Regards -

Yours faithfully
J. M. Brand

London
July 29 1873

My dear Colonel
On enquiring I
find that the
War Office do
take the opinion
of C O, of militia
as to appointing
officers; on which
account I can very
well serve you

nephew - I shall ask for
a company for him
from which he can
if he pleases get
back into the army.
You told me that
his name is Charles
George Mahon, but
I must also know
his exact age and
anything else that
I can learn. His
height for instance.

I do not know
of any vacancy at
this moment but
there are 5 battalions
in M^x so that
it is not likely
that he will have
long to wait -

Yours sincerely

W. M. Kingston

No. 1 St. Swithin's Lane

July 31st 1873

To the Chairman & Directors
of the Agricultural & General Drying Co. Limited
Gentlemen

I have the honour to report to you
the results of the experiments made with the
Drying Cylinders at Mess^{rs} Schroder's Quays Works
Victoria Docks from the 16th of June to the 19th July
1873 -

Interpretations

No. 1 shall be understood to refer to the Old
Cylinder belonging to Mr. Alfred Borwick

No. 2 shall be understood to refer to the
Cylinder belonging to Mr. H. A. Gibbs.

Description of Machines

No. 1 consists of a wrought iron Cylinder about 25 feet
long, revolving in a stationary wrought iron casing
leaving a space of about 2 inches between the
casing & cylinder; the Fire grate is underneath
the casing, the hot air passes thro an 18 inch pipe
to the air duct which is made to revolve the
opposite way to the cylinder; is then distributed
inside the Cylinder, and is drawn off at the far
end by the Chimney.

No. 2. This machine consists of a wrought iron revol-
-ving cylinder about 24 feet long, having a stationary
air duct passing thro the centre; the Fire Grate
is detached from the Cylinder; a large fan is
placed over the top with its suction pipe commu-
-nicating with the furnace, which draws the hot
air from the fire and passes it directly thro the air
duct into the cylinder, this is also drawn off into a
chimney at the opposite end -

It is to some extent useless for me to describe to you ~~the~~ machines with which you are so well acquainted, I have however done so that you may be better able to follow me in the results and remarks on each machine.

Remarks on each machine

No 1 This machine was quite unfit for accurate trials, but I was of opinion that it would run long enough to give some data as to the quantity it would dry & its consumption of fuel.

It was faulty in every part, and when I strengthened it in one place it gave way in another, and at last so buckled & twisted that it became useless, one great fault in its construction is the narrow space between the cylinder & casing being only 3 inches, the draught it almost null & the consequence is the fires will not burn & the small space would soon become choked with soot.

The required particulars were just obtained when the cylinder positively broke down altogether. I have given you a table of results & you will see by that, we ran 8 1/2 hours the day before it collapsed.

No 2 The results obtained by this machine were very satisfactory & exceeded my utmost expectations, and when the larger pulleys were placed on ran very steadily, and turned out the guano dry, and with the exception of the wet lumps, did its work well; this machine was not constructed to dry such materials and could be modified to dry the average quality of guano that has been run thro.

The Fan bearings became very hot, necessitating free use of oil.

See Table for results. These were taken by my assistant, which no doubt Mr. Sawell will verify.

my constant, which on board Mr. Smith's ship
has been for several years now, and
this has been of use -
The two bearings have been very far
from true -
I say the average grade of ground that has
my oval materials and could be made
to work well, the machine was not constructed
any, and with the exception of the one bearing
on one very small, and turned out the same
pattern, and when the paper pattern was placed
very satisfactory & excellent my present copy
No 2 the results obtained by this machine are
very far from true -
I have given you a table of results & you
will see by that, we can't have the day
before it collapsed.

No 3 the results obtained by this machine are
very far from true -
I have given you a table of results & you
will see by that, we can't have the day
before it collapsed.

No 4 the results obtained by this machine are
very far from true -
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will see by that, we can't have the day
before it collapsed.

No 10 the results obtained by this machine are
very far from true -
I have given you a table of results & you
will see by that, we can't have the day
before it collapsed.

Other matters beyond actual production and consumption have to be considered viz. The power to drive the machinery. Consumption of fuel in furnace, labor & cost of construction. It may be interesting to compare these points -

1st Horse power required. The two cylinders took about the same power to drive them, viz from 2 to 3 Actual Horse power, but No 2 has a fan to ^{be} driven, which takes not less than 7 Actual Horse power to drive it, this I consider a great hinderance to the economical working of the principle, this extra Horse power representing in fuel, oil, straps, water to not less than 10/- per day of 12 hours for each machine -

2nd Consumption of fuel. For this I must again refer you to the Table of results, it shows that No 1 requires 104 lbs of coal per Ton dried & for No 2 - ~~132~~ lbs of coke - but both might be constructed to consume much less.

With regard to No 2, part of the principle is to draw the hot air from the Boiler flues with a view to the utilization of the waste heat. I considered this matter very carefully, making the experiments shown in the Table.

On applying the pyrometer to the Top part of the furnace it immediately sent the indicator to its full height viz 1500° so that I cannot tell how much it was above this, on placing the instrument in the Fan suction just before entering the fan, it registered from 1100° to 1150° (see Table) and at the Bottom, Discharge from Loom between 500° to 800°, the Chimney bottom indicating from 350° to 250° -

These results show a serious loss of heat in passing thro' the fan. The loss of heat from a direct fire being so great, it would be of no practical use to attempt to utilise the heat from a Chimney.

I think I can explain this more fully. The heat at the bottom of a chimney should not be more than 500% and in the proportions above this would be 300% on passing thro' the fan, this is only the heat shown in the bottom of the cylinder chimney, and if you draw the Boiler Fires etc will give the extra consumption of fuel by the stronger draught.

As the results of my investigations & experiences, I should propose to construct a machine as follows. A cast iron cylinder, 4 feet in diameter and about 16 feet long on the principle of No. 1, to revolve over the fire, but with a stationary air duct as in No. 2 and an arrangement for spreading out the lumps; if the guano is to be the same as the samples we have been drying up to Friday, but if they intend to dry such Guano as we dried on Friday, it will require a revolving air duct with spreaders & scrapers, for the guano was so soft that it was with difficulty the men could throw it off the shovels, and we were obliged to run a considerable quantity thro' a second time. I should propose the cylinders to be set in brickwork on the plan of those at Leeds.

I estimate the quantity (the same as we have dried up to Friday the 18th of July) each machine would turn out would be 22 cwt of dried guano with the consumption of 1 cwt of coal at most - per hour. and that the cost would be about

£4.00 per pair including brickwork, or the probable cost of a pair of well constructed No. 2 cylinders

I have endeavoured to give an independent report confirming myself to the actual facts taken from daily working & I shall have great pleasure in attending your Board to make any explanations or answer any questions.

I feel confident that Mess^{rs}. Schroders will not meet with any machines to do their work more thoroughly or economically

Believe me Gentlemen

To remain

Yours very Faithfully

Thos. S. Wilson M. J. M. E.

I have the honor to acknowledge the receipt of your letter of the 11th inst. in relation to the proposed purchase of the land for the purpose of erecting a building for the use of the school. I have the honor to inform you that the same has been referred to the Board of Trustees, and they have decided to purchase the same. I have the honor to inform you that the same has been referred to the Board of Trustees, and they have decided to purchase the same.

[illegible]

Results of Trial of No. 1 Cylinder

Monday June 23rd 1873

Time working 6 hours

Weight of Guano dried 66 cwt 48 lbs

Coals used 4 cwt 56 lbs

Guano dried per hour 11 cwt 8 lbs

Coals used per Ton 1 cwt 41 lbs

N.B. This was before speeding
This was to dry.

Tuesday June 24th 1873

Time working 5³/₄ hours

Weight of Guano dried 101 cwt

Coals used 4 cwt 56 lbs

Guano dried per hour 17 cwt 63 lbs

Coals used per Ton 91 lbs

N.B. The lighting the fire is included in the coal

Wednesday June 25th 1873

Time working 5¹/₂ hours

Weight of Guano dried 70 cwt 90 lbs

Coals used 3 cwt -

Guano dried per hour 13 cwt

Coals used per Ton. 96 lbs.

Thursday June 26th 1873.

Time working 8¹/₂ hours

Weight of Guano dried 142 cwt 92 lbs

Coals used 8 cwt.

Guano dried per hour 17 cwt

Coals used per Ton 1 cwt 13 lbs.

Mean results after speeding

Time	Guano dried	Coals used	dried per hour	Coals per ton
5 ³ / ₄ hours	101 - 0	4 - 56	17 - 63	91
" 5 ¹ / ₂ "	70 - 90	3 - 0	13 - 0	96
" 8 ¹ / ₂ "	142 - 92	8 - 0	17 - 0	125
Total	314 - 40	15 - 56	47 - 63	312
Mean	104 - 95 (6)	5 - 19	15 - 96	104

Dr. 1
To the
of

Monday June 23rd 1873

James M. Smith

... before

1870

1875

1840

Good night

~~Don't forget to write to me~~

1890

James D. B.

James Watson Esq

Length of Column 1000

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[Faint handwritten notes at the bottom of the page]

1041

(2)

Results of Trial of No 2 Cylinder

Tuesday July 15th 1873

Time working	5 hours
Coke used	5 cwt 56 lbs
Weight of Guano dried	119 cwt 36 lbs
Guano dried per hour	23 cwt 96 lbs
Coke burnt per Ton	103 lbs

Wednesday July 16th 1873

Time working	5 hours
Coke used	6 cwt 83 lbs
Weight of Guano dried	104 cwt 45 lbs
Guano dried per hour	20 cwt 98 lbs
Coke used per Ton	1 cwt 31 lbs
Weight of Raw Guano	122 cwt 69 lbs

NB. 18 cwt of this came out in round balls hard on the outside but quite wet inside.

Thursday July 17th 1873

Time working	4 hours
Coke used	9 cwt 88 lbs
Weight of Guano dried	147 cwt 12 lbs
Guano dried per hour	21 cwt 2 lbs
Coke used per Ton	1 cwt 36 lbs
Weight of Raw Guano	162 cwt 10 lbs
Net humps not weighed	

Friday July 18th 1873

Time working	8 1/2 hours
Coke used	5 cwt 7 lbs
Weight of Guano dried	80 cwt 135 lbs
Guano dried per hour	9 cwt 60 lbs
Coke used per Ton	1 cwt 29 lbs
Weight of Raw Guano	92 cwt 92 lbs

A large quantity of this sample was like thick mud it stuck to the shovels and was difficult to feed. Stopped machine 2 hours, this is taken from the time.

NB. I have not taken the last result as it was not a fair sample

Time hours	Guano dried cwt lbs	Coke used cwt lbs	Guano dried per hour cwt lbs	Coke per Ton. cwt lbs
5	119 - 36	5 - 56 lbs	23 - 96	1 - 103
5 1/2	104 - 45	6 - 83 lbs	20 - 98	1 - 31
4	147 - 12	9 - 88 lbs	21 - 2	1 - 36
Total 14	370 - 93	22 - 3	65 - 84	3 - 58
Mean 5 2/3	123 - 68	7 - 38	21 - 103	132 lbs

(7)

	Time hours	Guano Dried lb ₂	Coal or Coke used lb ₂	Dried Guano per Hour lb ₂	Coal or coke per Ton
Mean No 1	6 ¹ / ₁₂	104.95	3.19	15.96	104 lbs
No 2	5 ² / ₃	123.68	4.38	21.103	132 lbs.

In No 2 the coke consumed to light the fires is not included would be about 56 lbs -

Temperatures taken from No 2.

Top of Furnace Over the furnace the heat was about 1500°: pyrometer does not indicate higher	Entrance into Fan	Discharge from Fan	Chimney Bottom
	1150°	500°	325°
	1100°	600°	250°
		600°	300°
		700°	250°
		500°	350°
		700°	350°
Mean	2 $\overline{2250^\circ}$ 1125°	6 $\overline{3900}$ Mean 650°	5 $\overline{1475}$ 295°

Could not take more at entrance of fan on account of shaking the pyrometer with the draught.



Colonel
The J Gorimar Mahon
37 Maida Vale



delay, for he goes to
Scotland to shoot
grouse.

Yours sincerely

W. Minstons

I am going away
in an hour.

Hurdon
Aug 5 1873

My dear Colonel

It is a pity
that you don't
tell me in which
of the 5 Regiments
of M^x Militia
the vacancies are.

I had told you
that there were
5 and that
the vacancies are
filled up by the

government on
the recommendation
of the C O's direct

as no report
is made to the
offce of the
Lieutenancy I
cannot possibly
know when vacancies
occur.

If the Clerk of
the Lieutenancy has
not yet com-

municated with
all the Lt Col's
your nephew
may miss these
vacancies, not
by my neglect.

I send you
note to R Nicholson
Esq, 23 Spring Garden,
the Clerk of the
Lieutenancy, and
I recommend you
to call there, without

No. 1 Swythens Lane

Aug. 6th 1873

To the Agricultural & General Drying Co. Limited

Mr. Chairman

Sir

At your request I have made the following report on the performance of the present Cylinders at Leeds, and will as far as I possibly can, answer your questions seriatim.

The undermentioned figures are from the daily reports which are signed by the manager and from these I will answer the vital questions viz^t work done for coal consumed. The others I will answer, ~~unseen~~ and am prepared to verify my statements to the satisfaction of all interested.

Question 1st Amount of Water expelled per hour?

Answer 1st 559 lbs.

2 2nd Amount of fuel used per hour?

A 2nd 86.9 lbs of coal

2 3rd Amount of power used?

A 3rd About 1 1/2 Horse Power (Actual)

2 4th How long have they been continuously at work?

A 4th About 3 months started 26 of April 1873

Q. I have any of the facts before me, I do not
know. I have seen some of the objects and
the objects are different, but in all the
specimens, that has been shown to me, it is
the same.

Q. I have seen of the objects in our
collections or objects of view of our country
in the No. 1, but the least sign of anything in
the No. 13, but has been found the same
as the No. 1.

Q. I have the same specimens in the
No. 1, but the least sign of anything in
the No. 13, but has been found the same
as the No. 1.

Q. I have the same specimens in the
No. 1, but the least sign of anything in
the No. 13, but has been found the same
as the No. 1.

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as the No. 1.

Q. I have the same specimens in the
No. 1, but the least sign of anything in
the No. 13, but has been found the same
as the No. 1.

- Q. 5th Have any of the parts broken, if so which?
A. 5th A segment came off thro defective workman-
ship, which was replaced, this is all the
repairing that has been done to either
since commencement.
- Q. 6th Have either of the cylinders or air ducts
choked or stopped by reason of an overcharge?
A. 6th No, not the least sign of choking, and
14 Tons 13 cwt has been passed thro once in
22 hours.
- Q. 7th Has the Guano accumulated on either
scrapers or air ducts, or in any part of
the Cylinders?
A. No. We have sometimes to remove rags
or woolen of which there are large quan-
tities in the Leeds Sewage, but no
manure. The cylinders are examined
say about once in 2 months.
- Q. 8th & 9th What is the temperature of air
going into the air duct? and what at
the base of suction shaft?
A. 8th & 9th This has never been tried

Having answered all queries,
I will now take the daily reports
for one month, and from the
average prove the above. I have
taken No 3 cylinder through out.

All these figures are those of the managers
of the Leeds Sewage Works, and are signed by
him in the daily reports, which can be seen at the
office of the Native Guano Co. Office.

1. Class of animals
 2. Quantity of bones at 1st number
 3. Quantity of bones in bone before dry
 4. Name of bone now remaining
 5. Quantity of bone used
 6. Remarks

A	B	C	D	E
18.5	10.0	10.0	10.0	10.0
19.0	10.0	10.0	10.0	10.0
19.5	10.0	10.0	10.0	10.0
20.0	10.0	10.0	10.0	10.0
20.5	10.0	10.0	10.0	10.0
21.0	10.0	10.0	10.0	10.0
21.5	10.0	10.0	10.0	10.0
22.0	10.0	10.0	10.0	10.0
22.5	10.0	10.0	10.0	10.0
23.0	10.0	10.0	10.0	10.0
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27.0	10.0	10.0	10.0	10.0
27.5	10.0	10.0	10.0	10.0
28.0	10.0	10.0	10.0	10.0
28.5	10.0	10.0	10.0	10.0
29.0	10.0	10.0	10.0	10.0
29.5	10.0	10.0	10.0	10.0
30.0	10.0	10.0	10.0	10.0
30.5	10.0	10.0	10.0	10.0
31.0	10.0	10.0	10.0	10.0
31.5	10.0	10.0	10.0	10.0
32.0	10.0	10.0	10.0	10.0
32.5	10.0	10.0	10.0	10.0
33.0	10.0	10.0	10.0	10.0
33.5	10.0	10.0	10.0	10.0
34.0	10.0	10.0	10.0	10.0
34.5	10.0	10.0	10.0	10.0
35.0	10.0	10.0	10.0	10.0
35.5	10.0	10.0	10.0	10.0
36.0	10.0	10.0	10.0	10.0
36.5	10.0	10.0	10.0	10.0
37.0	10.0	10.0	10.0	10.0
37.5	10.0	10.0	10.0	10.0
38.0	10.0	10.0	10.0	10.0
38.5	10.0	10.0	10.0	10.0
39.0	10.0	10.0	10.0	10.0
39.5	10.0	10.0	10.0	10.0
40.0	10.0	10.0	10.0	10.0
40.5	10.0	10.0	10.0	10.0
41.0	10.0	10.0	10.0	10.0
41.5	10.0	10.0	10.0	10.0
42.0	10.0	10.0	10.0	10.0
42.5	10.0	10.0	10.0	10.0
43.0	10.0	10.0	10.0	10.0
43.5	10.0	10.0	10.0	10.0
44.0	10.0	10.0	10.0	10.0
44.5	10.0	10.0	10.0	10.0
45.0	10.0	10.0	10.0	10.0
45.5	10.0	10.0	10.0	10.0
46.0	10.0	10.0	10.0	10.0
46.5	10.0	10.0	10.0	10.0
47.0	10.0	10.0	10.0	10.0
47.5	10.0	10.0	10.0	10.0
48.0	10.0	10.0	10.0	10.0
48.5	10.0	10.0	10.0	10.0
49.0	10.0	10.0	10.0	10.0
49.5	10.0	10.0	10.0	10.0
50.0	10.0	10.0	10.0	10.0

18 days 86.0 110.0 110.0 110.0
 19 days 86.0 110.0 110.0 110.0

Daily Reports For June 1873 Leeds.

A = Date of Month

B = Quantity of Manure dried at 14% moisture

C = Quantity of Moisture in Mud before drying

D = Time Cylinder was running

E = Quantity of Coals used

F = Remarks.

A 1873	B cwt. grs.	C o/o	D hours	E cwt.
June 4	96. 0	60.93	24	22
" 5	109. 0	54.68	24	13
" 6	23. 1	79.68	14	12
" 7	50. 2	57.81	12	11
" 9	52. 2	56.25	10	11
" 10	53. 0	56.25	11 1/2	12
" 11	69. 2	51.50	12	8
" 12	79. 3	57.81	12	8
" 13	58. 3	53.12	12	12
" 14	38. 3	43.75	7	2
" 17	21. 3	85.93	1 1/2	14
" 18	6. 3	79.68	5	2
" 19	33. 3	64.06	12	8
" 20	38. 1	62.50	12	11 3/4
" 21	26. 0	48.43	7	5
" 23	13. 1	92.18	1 1/3	8
" 24	30. 0	59.37	9	98
" 25	31. 0	64.06	12	
" 27	37. 2	62.50	12	
19 days.	869. 1	1190.49	235 1/2	182 3/4
Average 1 day	45.75	62.7	12.4	9.62.

These figures show that about 6.5 lbs of water
 are evaporated by 1 lb of coal, which is a very
 good result when it is considered that the
 cylinder is exposed to the weather, and
 that it is generally stopped at night, the
 amount of coal includes the coal required to
 light and heat the cylinder & other matters
 there. From these facts I deduced that for
 better results would have been obtained
 by Mr. Barwick's cylinder at that station
 and this would have been obtained with
 a perfectly constructed machine.
 It may be interesting to compare
 this report with the one from
 I was entitled to ascertain the right
 of some persons and in the meantime
 have been saying, but there will never
 for a good comparison

Coal	Water	Evaporated	Waste
10.00	10.00	10.00	10.00
11.00	11.00	11.00	11.00
12.00	12.00	12.00	12.00
13.00	13.00	13.00	13.00
14.00	14.00	14.00	14.00
15.00	15.00	15.00	15.00
16.00	16.00	16.00	16.00
17.00	17.00	17.00	17.00
18.00	18.00	18.00	18.00
19.00	19.00	19.00	19.00
20.00	20.00	20.00	20.00
21.00	21.00	21.00	21.00
22.00	22.00	22.00	22.00
23.00	23.00	23.00	23.00
24.00	24.00	24.00	24.00
25.00	25.00	25.00	25.00
26.00	26.00	26.00	26.00
27.00	27.00	27.00	27.00
28.00	28.00	28.00	28.00
29.00	29.00	29.00	29.00
30.00	30.00	30.00	30.00

I remain Dear Sir
 Yours very truly
 J. H. Barwick

These figures show that about 6.5 lbs of water are evaporated by 1 lb of coal; This is a very good result when it is considered that the cylinder is exposed to the weather, and that it is generally stopped at night; the amount of coal includes the coal required to light and heat the cylinders & entire construction, From these facts I hoped that far better results would have been obtained by Mr. Borwick's cylinder at Mess. Schröder's and they would have been obtained with a properly constructed machine.

It may be instructive to compare this report with the one from Schröder's

I was not able to ascertain the weight of raw gum only in the undermentioned case before drying, but these will serve for a rough comparison

	Weight of Raw Gum	Weight of Dried Gum	Moisture evaporated. C. lbs	Coke used. C. lbs
July 16 th 1873	122.69	104.49	18.20	6.83
17 "	162.10	147.12	14.110	9.88
18 "	92.92	80.35	12.57	5.7
			<u>45.75</u>	<u>21.66</u>
			112	112
			9.0	4.2
			49.5	23.66
			<u>51.5</u>	<u>24.18</u> lbs.
			4836	
			2790	
			<u>2418</u>	
			3720	
			<u>2418</u>	
			1302	

Thus present cylinders at Leeds evaporate about 6.5 lbs those at Mess. Schröder's 2.11 lbs of water per 1 lb of coke.

I remain Dear Sir
Yours very faithfully
Thos. S. Nelson R. I. M. E.

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[Faint, illegible handwriting in the middle section of the page.]

[Faint, illegible handwriting in the bottom section of the page, including a signature and possibly a date or reference.]

August 15, 1873



L. E. Couch
Dublin and
10th 1873

My dear friend

Unless a
reference has been
made within
a year, to the
point of view,
the preceding
pages

to the young

The answer
to your queries

And your
wishes

G. L. Guernsey

Oct 8 Breane

Walmer Castle,
Deal.

Aug 25/73

My dear Sir,

I enclose your letters
from the two Chancellors
which I ought to have
forwarded earlier.

Yours sincerely
Granville
The
Governor Nelson

1860
1861