some miles east of the City." Later in the same article he refers to the firm's warehouse in Nicholas Street. Matthews' plan of 1815 while showing a number of glassworks in and around the city does not place one in Nicholas Street. The question of Nicholas Street vs. St Nicholas Street has been addressed in the main Introduction to the study. H St George Gray, 1923, also suggests that Lucas had a glass house "probably at Wick," as well as at Stanton Drew. The writer is indebted to David Evans, SMR Officer for S. Gloucestershire Council, for the information that there is no known glassworks at Wick, S.Gloucestershire. From the Bath & North East Somerset SMR BN2247 it is clear that Stanton Wick is indeed the works in question, sitting within the parish of Stanton Drew, some miles south of Bristol. [It was difficult to know where to place this digression, but is was felt that the points should be clarified.]

Latterly, on the evidence of Eyres, some 'fancy goods' were made, but primarily in window glass it would seem. It has been stated that the works even exhibited glass window poles at the Great Exhibition, but window glass appears to have been developed as the primary business, once bottles had been given up.

This part of the study has not been intended as an in-depth study of 19th century glassmaking technology, so further reading is recommended. No particular recommendations can be made, because much depends on where the reader's particular interest lies.

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A/BHQ/1 (2 parts): Various relevant Chance papers, correspondence etc.

T/PH/isr 1-3: Hartley family history notes

Nailsea Local Studies Library

Copies of various items of correspondence from Box File: 'Nailsea Glassworks (photocopies of Chance collection)'

APPENDIX 1 - C T Coathupe's notes 1836-7

As an introduction, some of the units may need some explanation to modern readers, and to save confusion an attempt will be made to translate these simply.

Measures of length

12 inches (ins.)	= 1 foot (ft.)	One foot is equivalent to 30.48 cms.
3 ft.	= 1 yard (yd.)	
22 yds.	= 1 chain (ch.)	

N.B. When he refers to "feet" on pages 90 and 104 – 109 it is not certain what his unit really represents. It is thought that it may be square feet, but alternatively it could be linear feet of glass at a standard width, which has not been given or determined. As the thickness is a variable that is not given, attempts to check mathematically have been frustrated.

Measures of area

144 square inches (sq. ins.)	= 1 square foot (sq. ft. or ft^2.)	
9 sq. ft.	= 1 sq. yard	One square yard is equivalent to 0.84 sq. m.
4840 sq. yds.	= 1 acre	One acre is equivalent to 0.40 hectares.

Measures of volume

20 fluid ounces (fl. oz.)	= 1 pint (pt.)	One pint is equivalent to 0.568 litre
8 pints	= 1 (Imperial) gallon (gal.)	
8 gallons	= 1 bushel	
8 bushels	= 1 quarter	

Measures of weight

16 ounces (ozs.)	= 1 pound (lb.)	One pound is equivalent to 454 grams
28 lb.	= 1 quarter (qr.)	
4 qrs.	= 1 hundredweight (cwt.)	
20 cwt.	= 1 ton	One ton is equivalent to 1016.96 kilograms.

Currency

Coathupe expressed this in Pounds, shillings and pence (£..s..d)
The smallest denomination was a farthing, four to the penny, or $\frac{1}{4}$d.

2 farthings	= 1 halfpenny {'hape-nee'} or $\frac{1}{2}$d.
2 halfpennies	= 1 penny (d.)
12 pence (d.)	= 1 shilling (s.)
20 s(hillings)	= 1 pound (£)

Shillings and pence may also be shown separated by / (forward slash). For example five shillings would be 5/-, while two shillings and sixpence would be 2/6. He also occasionally uses this notation for weight. Look at the context, therefore. No attempt has been made to relate 1836/7 values to those of the present day, but the equivalent of 5/- post decimalization is 25p.

[Notes, etc., in the following transcript by the present writer are in red. Very few minor editorial liberties (not so highlighted) have been taken, only where it was thought that they would not alter the 'feel' of the document. However, most significant has been the change from the first transcription of the first 's' in 'ss' from 'f', representing the cursive 's' originally used. E.g. 'glass' had been originally written and transcribed as 'glafs' and 'potass' as 'potafs'. It was felt that to retain this was intrusive, as CTC thought and meant "glass" when he was writing. Inconsistencies by C.T.C. have not necessarily been corrected**]**

The Notebook

Nailsea Alkali Wks.

1836

£3,500

"Tophaceus" [Anagram for "Coathupe"]

1

Vitriol Chamber

Dimensions

Back: 74 feet.

Front 64 feet.

2⟌138

Average 69 ft. x 24 ft. wide.

& 12 feet high.

Capacity, 19872 cubc. feet.

∴ The contents will be

69 x 24 x 144 = 238464

cubic inches, or 238464

277.2738

= 860 Imperial gallons.

for each inch in depth.

2

The ordinary density of the

Acid in the Chamber is 1.30.

	Impl. Gals.	ttr.*	
∴ $\frac{1}{16}$ inch =	53.75	= 280	Oil of Vit:
$\frac{1}{8}$ do.	107.5	$561\frac{5}{8}$	do
$\frac{1}{4}$ do.	215	$1121\frac{1}{4}$	do
$\frac{1}{2}$ do.	430	$2242\frac{1}{2}$	do
$\frac{3}{4}$ do.	645	$3363\frac{3}{4}$	do
1 do.	860	4485	do
2 do.	1720	8970	do
3 do.	2580	13455	do
4 do.	3440	17940	do
5 do.	4300	22425	do
6 do.	5160	26910	do
7 do.	6020	31395	do.

Ap. 1836.

[* What this is has not been determined.]

3

Vitriol Chamber

$\frac{1}{16}$	inch	= $8\frac{5}{8}$	Cubc. feet
$\frac{1}{8}$	do	= $17\frac{1}{4}$	do.
$\frac{1}{4}$	do	= $34\frac{1}{2}$	do
$\frac{1}{2}$	do	= 69	do
$\frac{3}{4}$	do	= $103\frac{1}{2}$	do
1	do	= 138	do
2	do	= 276	do
3	do	= 414	do
4	do	= 552	do
5	do	= 690	do
6	do	= 828	do

N.B. To the guage [*sic*] in the Guage Pan, add $83\frac{1}{2}$ cubc. ft. or to guage in whole, subtract $37\frac{1}{4}$ cubc. ft. [The function of the Gauge Pan has not been determined.]

4

Wages paid for Vit^{l}. Cham^{br}

Pemberton,	£0..18..9
Baldwell,	0..10..0
l/3rd Gainer,	0..10..0
Per. week.	£l..18..9
2692 lbs. Sulpr.	£8. 8..3
154 lbs. Nitre.	2.. 4..$4\frac{1}{2}$
Wear of Chambr.	1.. 5..0
Exps. fr. week	£13..16..4

Produce, @ £3..14..3 per ton.

7882 lbs. Ol. Vit^{l}. - £13..1..4

140 lbs. Sulpte. Potass. 15/-

5

No. 2 pan

Each inch of Acid @ 1.600

from No. 2 Pan is equivalent

to 419 lbs. of Oil of Vit^{l}.

C.T.C. July 1837

6

Decanting Pan.

Each inch of Acid @

1.600, from the decanting

Pan, is equivalent to

48 lbs. of Ol. Vit^{l}. (July 1837).

7

Dft. Pipe.
Each inch of the Dft. Pipe
Contains $6\frac{1}{4}$ cubic feet.

8

Sulphur 16 - Sulp^{c}. Acid 49
Produce &c.
Average { $384\frac{1}{2}$ lbs. Sulph^{r}.
22 lbs. Nitre.
Per day, consumed.
Produce, 1126 lbs. Ol. Vit^{l}.
Per day: or very nearly
2 lbs. 15 oz. Ol. Vit^{l}. from
each lb. of Sulp^{r}. consumed.
C.T.C. July 1837
Sulphate of Potass about 20 lbs. per day.

9

Chloride Sodium 60
Salt Cake Furnace
Sulph^{te}. Soda. 72.
4 cwt. Fine Salt, decomposed
with $8\frac{1}{4}$ inches of
acid at 1.600, from the
decanting Pan (= 396 lbs.
Oil of Vit^{l}.), yields 4..2..14. [cwt..qr..lbs.] to
* 4..2..21 of good Sulphate
of Soda. C.T.C. .July.37.
* Atomically, we should
cwt..qrs..lbs
get 4..3..5 of Sulpte. Soda.

10

3 Batches are produced
in 12 hours = 14 cwt.
Wages 1/- per Batch.
Coal consumed, 15 Quarters
per week, when working
by day only; and 21 Qrs.
per week, when working
night, and day.
Excess of Vit^{l}. made, when
working only by day, is
754 lbs. per week.
(Turn over)

11

Sulphate of Soda [S.S]
(Working by day)

	cwt. [qrs.] lbs.
18 Batches =	83.. 1.. 0.
72 cwt. Salt @ 30/6*	£ 5.. 9..$9\frac{1}{2}$
7128 lbs. Ol. Vit^{l}. @ 75/-*	11.18..8
Wages,	18..0
Coal, 15 Quart^{rs}.	1.. 0..0
Hauling do	1..8
	£19.. 8..1

Vide p.17
£4..13..$2\frac{1}{2}$ per Ton.
Difference 1/6 per ton.

[* cost per ton.]

12

Sulphate of Soda
(Working day and night)

	cwt.qrs.lbs.
36 Batches. =	168.. 3.. 0
l44 cwt. Salt. @ 30/6	£10..19.. 7
14256 lbs. Ol. Vit^{l}. @ 75/-	23..17.. 4
Wages,	1..16.. 0
Coal, 21 Quarters, @ 1/4	1.. 8.. 0
Hauling do.	0.. 2.. 4
	£38.. 3.. 3

Vide p.17
£4..10..6. per ton
C.T.C. July, l837
@ £4..10..0 per ton, Sept. 1837.

13

All the Excess of Vitriol
made, is only 754 lbs.
per week more than is used. when making
S.S. by day only, we could
not afford to work the
S.S. furnace by night
and by day for more than
one week in about 2 mo^{s}. [months]
without reducing the
proper stock of acid in
the Chamber.

14

Black Ash Mixt^{re}.

S.S.	192	
Hyd. Lime	l40	Jan^{y}. 1837
Coal.	100	

Wages paid. -

Pan men,	0..16..4 per week
Yardsmen,	0..14..0 (7 days)
Mixing men	0..10..0 per week
Blk. Ash. (57 balls)	18..0 .
Sulph^{te}. Soda. (18 Batches).	18..0
Finishing, 3d per cwt.	