

14, 16  
Date note 13 August  
1777 - Oct 13 4 Oct 1777  
12 14 17 2 1/2

Cheshire

History of the rise and progress  
of Elm

Thiopteraslus -

J. Gilbert 1600

M<sup>r</sup>. Boyle 1600

M<sup>r</sup>. Mowbray - 1710

Newton

M<sup>r</sup>. Grey - 1730

M<sup>r</sup>. Du Fay - 1740

M<sup>r</sup>. Gordon 1744

J. Murchison 1745

J. Franklin 1752

Electrophorus by  
N. Volta - Pile -

## Elud' Machine

A Cylinder of Glass is turned on its axis by a Multiplying wheel or simple wrench to this is applied a rubber stuffed with hair wool or flannel. From the upper part of the rubber a piece of silk extends almost half round the Cylinder. By a sliding groove <sup>and slider</sup> and adjusting screw the rubber is made to press more or less <sup>fully</sup> on the Cylinder, and by a spring on the upper part of the stand it conforms to any inequalities there may be in the motion of the Cylinder. Eluticians are not agreed with respect to the most advantageous velocity of the Cylinder some prefer a simple wrench others

2 multiplying wheel.

x I am of opinion that a  
wheel is preferable

The silk may be either oiled  
or not - and should not reach  
the points -

The rubber suspended on glass

x I now from twenty <sup>three</sup> years  
experience, am convinced  
that a wheel is unnecessary  
Calcutta 24 Dec. 1801

x To repair cracked glass - First  
lay on the outside a coat of sealing  
wax rather thicker than the glass.  
Then spread the following comp<sup>d</sup>.  
on either side and apply it over  
the wax and a little farther on the glass  
4 pt. Resin 1 lb. 1 Koin. 1 Temperbe  
and a very little oil of olives

## Hypothesis

All natural bodies contain  
E.L. but in very different  
proportions. As long as any  
body contains neither more nor  
less than its natural share  
no effects are observed, but  
no sooner is this equal Distri-  
bution disturbed and a body  
becomes possessed of either more  
or less than its natural share  
electrical Phenomena  
The means of disturbing this  
equilibrium are various —  
Principal is Friction — Now  
simple the cause how im-  
portant the effects. —

When the machine is turned  
a quantity of Ele<sup>tr</sup> is found  
accumulated on the Cylinder.

— Gathers from the Air, Glass or  
rubber from the latter. —

— Quantity of Ele<sup>tr</sup> in the Rubber  
small — must be connected  
with the earth — Ele<sup>tr</sup> ma-  
chines like a water pump.

— Conductors — non conductors

metals  
Fluids

Animals

Green Veg.

Charcoal

Glass  
Resinous &c

Wax

Silk

Sulphur

Oil.

air —

X Green wood — Dried wood  
Charcoal & Dust —

— Metal — Calc —

\* The one pos. the other neg.  
we cannot determine a priori  
which will be Pos. or Neg.

\* Exp<sup>t</sup> shows fringing on the con-  
ductor -

If two conductors are cut  
together no electricity is  
produced - If two non-con.  
or a non-con. with a cond.

\* Then both are electrified -  
- Glass conductor supported  
on glass - furnished with  
points - Ele<sup>tr</sup> accumulates  
on the conductor - extends  
or at least casts its power  
at a considerable distance

- Ele<sup>tr</sup> would return to the  
earth - but for the non-con.  
\* stand of the conductor - Exp<sup>t</sup> -

+ Properties - Attraction -  
Repulsion -

+ Zinc atelec<sup>tr</sup> in Cavalletti  
N. Philosophy vol: 3 p. 384 note

+ Ele<sup>tr</sup> Cement 5 Parts 4 Wax  
2 powdered red ochre -



Experiments

1. Electrometer
2. Dancing figures
3. Balls
4. Head in despair
5. Dancing balls
6. Fluo
7. Overy
8. Sparks fired
9. Cannon
10. Charging
11. Cards
12. Wire
13. Gun powder fired
14. Medical Elec<sup>n</sup> Bucket
15. Points
16. Thunder house

Experiment

48. Gift. bell in Wat
49. Fil. dial of different metals on Glass by Varnish
50. Solomian Phosphorus
51. To burn iron wire in oxygen Gas
52. Iron ball burn in air
53. Cotton with powdered iron
- 54.

Experiments—

- 33. X Eggs - Euhesperia - Table
- 34. Soap bath with  
coloured water
- 35. Plate for hanging
- 36. Magni Futuri
- 37. Euhesperia
- 38. Diamond jar
- 39. Gold leaf into glass
- X 40. Obelisk
- 41. Ship - Punch
- 42. Luminous Star
- X 43. Powder magazine
- X 44. Spangled Collar
- 45. Ditto Obelisk
- 46. Luminous Conductor
- 47. Fly and Head

- 17. Church and Steeple
- 18. Lady  
— Dark —
- 19. X Spiral tube - all -
- 20. X Aurora Flask
- 21. Aurora tube X
- 22. Varnished silk X
- 23. X Luminous words
- 24. Moon and Stars X
- 25. Various forms of light
- 26. Silk machine X
- 27. Powder Magazine
- 28. Candle Light
- 29. Snake
- 30. Glass tube burst
- 31. Melt of oil - hole
- 32. X Chain across the table

1001

- \* remarks on the Orery
- \* Spirits find heat in the air  
Phlogiston evolved  
De-phlogisticated air
- x Head in despair - fight  
sensitive plant
- x Orery - Motion of the planets
- x Changing - various ways
- + new Experiment
- + Burn occasioned by the gene-  
ration of elastic vapour in the  
cord
- + Medical Electricity - Syphon  
- Circul: australis (Doubtful)
- Stomach exp<sup>d</sup> with a powerful  
machine did not produce any  
change in the circulation
- + Van Marum's great plate did  
not quench the pulse -

## Lightning

- Similarity of Electricity to  
Lightning.
- 1 - Darts in zig-zags -
- 2 - strikes the highest pt.
- 3 - prefers the best conductor
- 4 - melts metals
- 5 - sets fire combustible bodies
- 6 - Smells of Phosph<sup>r</sup> or Sulph<sup>r</sup>
- 7 - strikes animals, birds
- 8 - destroys and insects, insects

9

Doctor Franklin  
- Write - with handkerchief  
- wet pack thread - wire  
- Key - ribbon -  
10<sup>th</sup> June 1752 - French  
15<sup>th</sup> May - Greatest disco-  
very of modern times  
- accident gave birth to  
the Telescope, Barom.  
and most useful invention  
- First train of reasoning  
- most perfect Analysis  
- Synthesis -  
With the Electric fluid  
we can imitate every part  
of lightning and with light  
brought from a cloud we  
can perform every experiment  
in Electricity.

Air always Electrical  
- Cause - Heating and cooling  
Friction - air Gun -  
Proof - Lights on specks  
marks - hair of  
+ Denong a ~~hot~~ shower: pro:  
+ Fog strongly Elect.  
may be felt on the face  
- Lambert light -  
+ Clouds clear part as they  
- Sup: two clouds charged  
with opposite Elec.  
- Flash of light - Sup of them  
Large cloud near the earth  
small clouds discharge silently  
attracted to the main cloud  
+ main cloud within the  
striking distance - Flash  
down into the earth or the  
contrary

## Appearances

- Red lips dangerous
- Sal yellow - Falls next
- Dangerous
- + omnipresence -
- Thunder bolt metaphorical
- Double triple flash
- bones not always softened
- Clouds move in contrary
- directions - attracted by the
- great cloud -
- Returning stroke does
- great mischief -

## Situations

1. Low ground
2. On high ground
3. Near a gun or shell
- upright -
4. Under a hedge or tree
5. Stand near a tree
6. Down the leaves of tree!
7. In a house but not near
- the chimney - looking G.
- best way - look not out
- at a window - stand
- in the door - x cork
8. Safest situation is in
- the middle of the room
- on the carpet - further
- bed - shut with glass
9. Safest room safest
10. Dangerous to cross a river
11. Safer out in than in the
- xx house -

Conductors

1. A bar 1 inch square
  2. Continuous.
  3. Connected with the Earth
  4. Laid on proper height
  5. Finely tapered and pointed
  6. Sweet points on the building all connected
  7. Painted or covered with lead
  8. Upper part a gold needle -
- x New Coat of the Maranda house  
Church - Stupples  
- Lady -

Phenomena

- Aurora Borealis -
- immense height -
- affect the magnetic Needle
- appear in cold regions and  
more frequently in the winter
- have some connection with  
the Sun -
- upper part white, lower  
purple -
- Sun more frequent now

Earthquakes —

— supposed to be owing to  
Electric Vapors —

— Explorations of Electric Vapors  
would not correspond to  
the observed Phenomena. —

— Doctor Munkely ascribes Eqs  
to Electricity — ~~Electricity~~

+ (During an Earthquake  
the air is in a highly Electric  
state — Vapors: forward —

rumbling noise — rattling  
among the leaves of trees

— all consequences of the Electric  
Pyrotheria — Spours on a

Dry sandy, or rocky ground  
most aptly by an Earthquake.

— More loud on wet muddy  
ground or over

x Two clouds Eled apparently



# Water Sports

## Phenomena

- A dense black cloud hangs over some part of the ocean - the water under it appears violently agitated in circular waves rise. the cloud descends - they meet and form a wall, small in the middle and thick at both ends - it sometimes moves sometimes it is stationary -
- Perpendicular - Oblique
- Whirling motion -
- X Pressure of the atmosphere will not account for the Phenomena - could not exceed 32 feet -
- X Elect. Cloud -

Volcanoes

Electricity concerned

Flashes of lightning - do  
great damage in the neigh-  
borhood of St. W. Point

Fire Balls

Electret - Perhaps in-  
flammable air concerned

Great difficulty arises for  
the judicious height -

From above the sun is us-  
ually ascribed to our At-  
mosphere -

x Fire ball in Aug. 1823.  
of an oval form long thin  
which appeared very near  
and then - seen at the same  
time throughout all great  
Belt: and Ireland -

Lark and Lantern  
- Inflant<sup>h</sup> air probably  
concerned in this - leads  
people astray - will not  
pass a river -

- Luminous speck on  
the Hair - Hummel Ollivier  
- Great wool - Bark of a Cat  
- Hair combed -

- Club<sup>h</sup> hump fermentable  
- Omm - Hair -  
+ Electricity and common fire  
do not act on each other -  
- Wispado - Electric Coat -

The same quantity of Elm bark  
thrown into two jars of unequal  
size gives very different shades.  
The larger has the smallest green  
why? —

W. Merri's list

Queen's Menon' oil } 4 2

12 Salt water } 6 1/2

1 Gall. —————  
Went: —————  $\frac{1-11-6}{6-2}$

W. Merri's Weather Paper  
Height about 100 —————

Silk Machine

Almon<sup>m</sup>

Prison - Mass Lady

- Church - fern powder

- one Miller - Eggs -

- tubes - words -

- W. Datzell Gould Square

Antique pieces

- Mr. Reid Angel Court

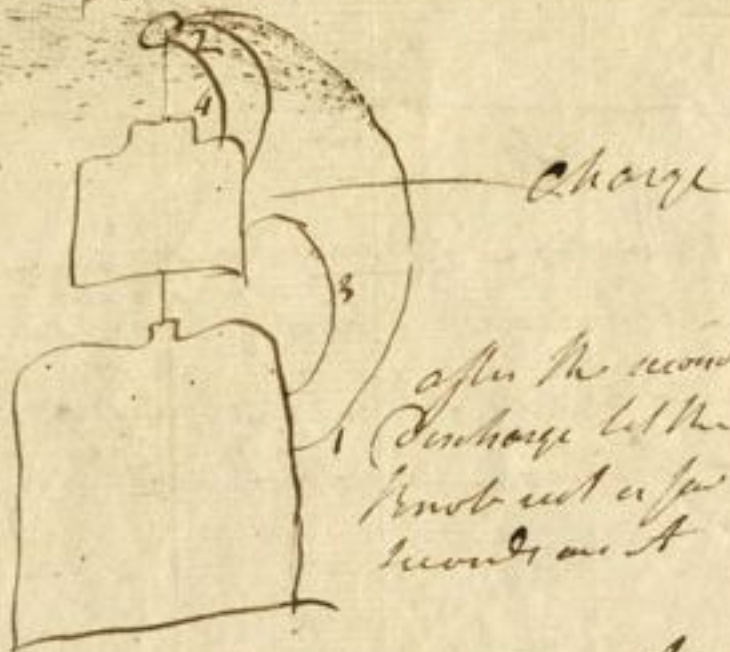
Throgmorton St

- Mr. Parson St

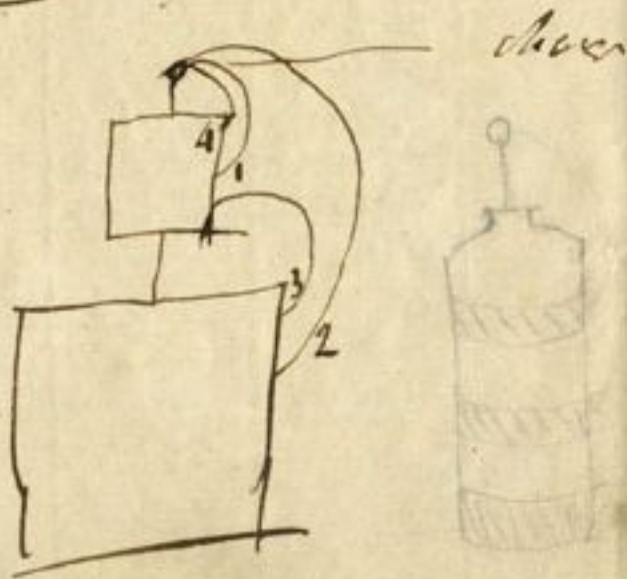
Mr. Henderson 1. White Court

Mull St

Double Bottle



after the second  
Charge let the  
knob out a few  
seconds on A



Mr. [unclear]

Comd. [unclear]