

" $\mu\phi$ " principle. Shall I go to Elliott  
& get thermopiles made as mine is  
made, & exact kudos?

What do you think of that great discovery  
of modern physics that —

The Principle of D'Alembert is not true  
in particular states of matter?

The Holy Man, II, and Max M expressed  
an opinion that my experimenting,  
physical ideas, &c., would lead to nothing.  
You may tell them, one & all, that I  
mean to give them The Lie Direct.

$dZ$

M

$$\frac{dZ_0}{dt} = \frac{dZ_0}{dt} \frac{dt}{dt} = f \frac{dZ_0}{dt}$$

$Z_c = \bar{Z}_0$

$$Z = \bar{Z}_0 + t \left( \frac{d\bar{Z}_0}{dt} + \frac{dZ}{dt_0} \right)$$

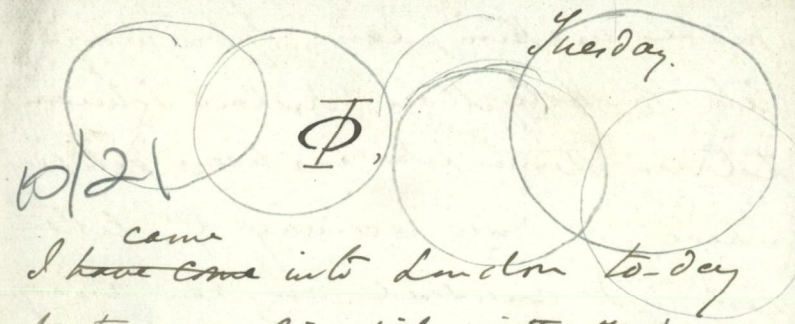
$$Z - Z_c = t \left( \frac{d\bar{Z}_0}{dt} + \frac{dZ}{dt_0} \right)$$

$$\frac{dZ_c}{dt} = \frac{d\bar{Z}_0}{dt} + \frac{dZ}{dt_0}$$

$$= \frac{dZ_c}{dt} + \frac{dZ}{dt_0}$$

$$\therefore \frac{dZ}{dt_0} = 0 \quad \checkmark$$

$Z = f \frac{dZ_0}{dt} \frac{dt}{dt}$



I <sup>came</sup> ~~have come~~ into London to-day  
to try my live pile with the proper  
galvanometer at South Kensington.  
Result splendid! Guthrie says  
that it is the best pile he ever  
saw, & that it is just the thing  
for him in investigating the heat  
in the spectrum. This is exactly  
what I want it for. The pile contains  
about 93 couples. When a change  
of temperature is occasioned by  
opening the door of the room, away  
goes the spot! When the hand is  
held several feet away, away  
it goes also! Nothing could be  
better. No doubt piles will now be

made on this plan. You may tell The Holy Man (Richard Johnson) that his therm scale has been eclipsed.

I have not, since receiving yr. letter last night, considered any new arrangement of plates in the balance electrometer, but it strikes me that by using several thin plates separated by a dielectric of high sp. induc. capacity (in fact a battery of plates) the attraction & repulsion effects might be increased.

I am very glad indeed that you have not rejected the Spectroscope idea, because Clark says that it won't work. I am strongly convinced that it will.

As to the law connecting the time with the quantity burnt, very probably it is something like the exponential law you suggest; because the time

taken by a substance to reach the temperature  $T$  from the temp.  $t$  is exactly the same as the time taken to cool, & this is expressed by DuRoi & Petit's law or Newton's as an exponential form. For small quantities, the time would, as you say, be prop. (probably) to the quantity.

10/21  
We go down on the 19<sup>th</sup>. How unfortunate that <sup>you</sup> go on the 18<sup>th</sup>! When will you return to Dublin?

I should greatly desire to consult & experiment with you in Dublin, but as far as experimenting goes, I can manage that at South Kensington with all apparatus. Let me know when you return. It is really very important, & all instruments, discoveries, &c., can be called on the