

depend upon how much sulphur &c is burned  
and how near it is burned to him. If I  
knew these facts it would be an easy sum  
to find the answer.

These are sent for the benefit of  
Max<sup>n</sup>,  $\pi$ , The S<sup>r</sup>. M<sup>r</sup>, Kroulins,  
and Master James.

Show them about at once, & with  
due adequacy.

M.

Absolute sine Electrometer nearly  
finished.

Your obj<sup>n</sup> about resistance in my  
new machine is skittles. The  
resistances might be all great &  
all very different. Reply. Carey Foster  
made some obj<sup>n</sup> on the score of Earth currents  
& difficulty of making proper contact (unless by  
hand). Mercury contacts w<sup>d</sup> be easy, though.

A. Cornwell  
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Coopers Hill, Staines.

10/12

June 5.

$\Phi$ ,

I have not made many exp<sup>s</sup> since; but  
I have at last got the eosine emulsion  
to keep on the plate without going into  
the liquid. Having coated the silver  
plate with an emulsion of eosine &  
gelatine, I dip it for a short time into  
a solution of Nitrate of Barium. When  
it has tolerably dried & got set, I coat  
it again with a layer of ~~gel~~ gelatine  
(with nothing in it), & wash the whole  
over with a solution (in H<sub>2</sub>O) of  
Bichromate of Potash, <sup>& then expose it to light.</sup> The resulting  
plate is permanent, & shows the  
faintest variation of Sun light by  
Salvanometer. Red & yellow light give  
results opp. to those of green (faint), blue &

violet (strong).

10/12

I am trying some further dodges with the Balmain point; but as I have just got a present of 6 Indian birds from a Cooper with man, & as I am bringing up from very tender infancy a Starling (a wonder of a pet now) & two Chaffinches, my time is encroached upon.

I do not quite know yet whether the <sup>when</sup> cosine in the cell gives a current or not; but in some exp.<sup>s</sup> I found that it did, & that it was opp. to that given when it was on the plate.

I am going to visit the Observatory at Greenwich today with the Committee of Council of Royal Society.

They will allow me to try some exp.<sup>s</sup> there with star & planet light; but it w<sup>d</sup> be tedious for me. What do you say to trying the med exp.<sup>t</sup> at Drumbek, as soon as I can suggest the best arrangement? Answer.

At the recent exam. in connexion with South Kensington the following questions & answers were given & received:—

Q. Explain why, in order to cook food by boiling at the top of a high mountain, you must employ a method different from that used at the sea level.

Ans. It is easy to cook food at the sea level by boiling it, but once you get above the sea level the only plan is to fry it in its own fat. It is in fact impossible to boil water above the sea level by any amount of heat. A different method would therefore have to be employed to boil food at the top of a high mountain, but what that method is has not yet been discovered. The future may reveal it to a daring Experimentalist.

Q. Why do the inhabitants of cold climates eat fat? How would you find experimentally the relative quantities of heat given off when equal weights of Sulphur, Phosphorus, & Carbon are thoroughly burned?

Ans. An inhabitant of cold climates (called Frigid Zoans) eats fat principally because he can't get no lean, also because he wants to rise in temperature. But if equal weights of Sulphur Phosphorus and Carbon are burned in his neighbourhood he will give off eating quite so much. The relative quantities of heat given off