

gave me a shilling for it, & I promised him it should be sure to go. So - (very unwilling to give for the trouble) may I ask you to do me the favour to give the same shilling to Mr. Kincaid if you happen to see him - or anyone else that will take charge of it. - I saw but the other day that though things are ruined on the whole, the distress in Teheran (or Isfahan?) is still appalling. — Dear miscreation!

And next - business ended - a bit of science. - (Such as may be interpreted from the little Inn Zum Althal.) You are too well acquainted with my scientific (or, as Lord Clarendon might call it, no-scientific) scepticism, to be surprised at my doubting the received idea, that the heat-undulations are only slower light-undulations gradually passing into visibility. If Seebeck's observations are worth anything, then with some fluid prism, (I fancy it was reines Wasser) the greatest heat is in the yellow ray, the idea must be wrong, & heat & light must be 2 distinct & partially superimposed spectra. The whole idea of simple, continuous, progressive undulation, however simple & beautiful, depends I fancy on some very slender foundation, & ought to be strengthened & tested. You could do it perfectly well, & you I presume would now have easy access to the means of doing it. No doubt many effectual means might be devised. I would only mention some that have occurred to me. —

You would want a delicate galvanometer - hollow & solid prisms - a rock-salt lens - (you said something about this - & that made me think you could manage the thing) & a Tyndall screen of iodine in sulphur of carbon, to filter out light. — Now take a well-developed spectrum of any light - throw it on a screen in which is a hole, through which you can admit any separate colour - receive that colour on the Tyndall screen, & ~~so~~ so place the rock-salt lens as to bring whatever through that screen to focus on the galvanometer. If the

theory is all right, it seems to me that the maximum of heat, whatever form it is employed, ought to ^{be} found beyond the visible red. In fact, on that theory I do not comprehend how there should be heat in the red itself, or in any coloured space - the undulations changing from heat into light, & ceasing to glow when they begin to shine. But let that pass - at any rate, if with any material, solid or fluid, the maximum of heat should be found removed down among the colours - e.g. anywhere beyond the red into the yellow, as Seebeck found - then it seems to me the theory will have at any rate to be considerably modified. It would be a worthy enquiry - I hope you will take it up - & I wish you all manner of luck with it. But should anything hinder the experiments, do please let me know "some day" what is the meaning of so-called dark heat being found in the red space - when the quickening of the undulations ought to have turned it into light - which as such would not affect the galvanometer. Tell? Is there any but dark heat?"

Pension Kaufmann, à Lucerne - Thursday nachmittags -
The Chute de Rhin was splendid - we had never seen it so well. The weather here has been sehr schlecht, but I hope we have brought amendment with us - it is very glorious here today with heavily capped dark purple mountains, still mantled with ritter Schnee. On our arrival here yesterday evening I found a letter sent on to me from Hardwick by Prof. Meyer - dated Stevens Institute of Technology (what in the world is that!) Hoboken, New Jersey - saying - Immediately on the receipt of your letter requesting that I should procure for you the photographs of the com taken by W. Whipple, I wrote to procure them; but failed in obtaining an answer from W. Winlock of Cambridge Obs. U.S.A. I have concluded that he is at present absent from his home. I have just written to Mr.