

Belair

Wudson Avenue

15/25

Belfast Apr 22 1891

My dear George

Your suggestion that water takes the potential of the faster ion seems to be good.

I send a few results which follow the rule with few exceptions - the values are the merest approximations but the signs are probably in most cases right.

The velocity of ions is from Kohlrausch. Electrolysis Rpt 1889. I confess to some scepticism as to these specific ionic speeds. I suppose it has been noted already that if water conducted part of the current there would be ^{anode} formation of water at the ~~cathode~~ (by secondary action of O) and

decompⁿ of water at ^{cathode} anode causing a dilution at former & consequent apparent migration of HCl with the current.

It is a complicated problem, I should be very glad if you can look over enclosed & perhaps suggest something worth trying next.

I am not sure of whether of Speed of Cl is 54 that of Cl₂ should be $\frac{54}{2}$ - Should it?

After you left the College that day J. Larmor came in & taking his stand on the pure ground of thermodynamics, warned me off the premises, accusing me of unlawful possession of a certain difference of potential to wit 1.4 D. for H₂SO₄/Ag. It being according to the law

in that case made and
provided, a gross misdemeanor
to extract 1.4 D out of what
~~only~~ contains only .35 D.

The plea of an enormous
temperature coefficient was
disallowed.

Nevertheless the 1.4 is there,
How do you account for it?

Negative heats of dilution
are also awkward.

Might I ask you to mention
to Prof. Sallas about lecturing
here next winter and see if
he takes kindly to the notion.

Munroe will be president
or should I write direct?

I hope all are well with
you -

15/25. Yours faithfully
I Brown

$$P = P_0 + P_1$$

$$I = \frac{dz}{dx} + P_1$$

$$\alpha = \alpha_0 + \alpha_1$$

$$\lambda = \frac{d\Omega}{dx} + \alpha_1$$

$$\frac{\alpha_1}{\beta} = \frac{1}{V} \left(\frac{Qw - Rv}{\pm z} \right)$$

γ & Ω being
indep. of time

$$V \frac{dI_1}{dt} = \left(\frac{dy}{dz} - \frac{d\beta_1}{dy} \right)$$

But if I_0 is indep. of time
as α_0 " " " " " " " " " " " "

$$\left. \begin{array}{l} \beta_1 - \gamma_1 w \\ = \frac{1}{V} P_1 \end{array} \right\}$$

$$V \frac{dI}{dt} = \left(\frac{dy}{dz} - \frac{d\beta}{dy} \right)$$

$$P_1 \alpha_1 + Q_1 \beta_1 + R_1 \gamma_1 = 0$$

$$P_1 u_2 + Q_1 v + R_1 \gamma = 0$$

$$\alpha u + \beta v +$$

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$$\pi u = (R_{1\gamma} - R_{1\beta})$$

$$\frac{\pi u}{V} = \sigma$$

$$\pi = I(\Sigma, \beta)$$

$$\sigma u = \sigma(\Sigma, \beta) = \sigma V(\Sigma, \beta)$$

$$\delta \Sigma, \beta = 0$$

$\pi = \frac{1}{2} \pi$
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