A glance at these tables shows that if regard be had to sign, Grotrian's conclusion as to the temperature-coefficients for conductivity and fluidity applies to all the coefficients for all the properties tested. A given change in the concentration produces a change in the coefficients in the same sense. Too much importance, however, must not be attached to this; for it is obvious that if we should tabulate, say, the coefficients for conductivity, surface tension, viscosity (instead of fluidity) and specific volume (instead of density), it would be found that the changes produced in the first two are in the opposite sense to those produced in the last two. It is interesting, however, to note that the expectation suggested by the above formulæ is distinctly realized.

At very great dilution of electrolytes, the temperature-coefficient becomes, approximately,

$$\frac{1}{P}\frac{\delta P}{\delta t} = \left(\frac{\delta P_w}{\delta t} + n\,\frac{\delta l}{\delta t}\right) / (P_w + nl), \quad \ldots\ldots\ldots\ldots \quad (9)$$

the pressure-coefficient having the same form. The concentration-coefficient becomes

$$\frac{1}{P}\frac{\delta P}{\delta n} = l / P_w + nl) \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad 10)$$

If we compare (9) and (10) with (7) and (8), it becomes obvious that the variation with concentration of the temperature and pressure coefficients will probably be more closely related at low than at high concentrations, but that the opposite will be true of the concentration coefficients. Accordingly, having plotted Grotian's coefficients and those of the above tables as functions of the concentration, I find that the temperature coefficient curves, for any one substance in solution, are in general more closely similar at low than at high concentrations; but that this is not the case for the concentration coefficient curves. In the case of the pressure coefficients the data are insufficient.

A corresponding similarity holds for the absorption spectra of solutions though it cannot be expressed in coefficients. In a former paper * I have shewn that for all solutions for which

* Trans. Roy. Soc. Can., ix (1891), sec. 3, p. 27.