gravities of very dilute solutions is clearly shewn in the results of Kohlrausch and Hallwachs's observations§.

So far as Sodium and Potassium Chlorides are concerned, Bender found that in respect to their density at 15° C.;

$$\text{For } n = \quad 1\text{·}0 \quad\quad 2\text{·}0 \quad\quad 3\text{·}0$$
$$(P_1 - P_2)/n = \quad \cdot 0_2 43 \quad \cdot 0_2 49 \quad \cdot 0_2 51$$

The value of $l-k$ for NaCl is $+0\text{·}01424$ and for KCl $+0\text{·}01316$, while a glance at the first table (p. 221) shows that the ionisation coefficient of solutions of the former salt falls off with the concentration somewhat more rapidly than, indeed for some concentrations, about twice as rapidly as, in the case of the latter. There cannot, therefore, be a close approximation to constancy in the absolute values of $(P_1 - P_2)/n$, but as these values are comparatively large, the percentage difference between them is comparatively small.

For the thermal expansion of these salts we have from Bender's observations,

$$\text{For } n = \quad 1 \quad\quad 1\text{·}5 \quad\quad 2 \quad\quad 2\text{·}5$$
$$(P_1 - P_2)/n = \quad \cdot 0_3 108 \quad \cdot 0_4 85 \quad \cdot 0_4 815 \quad \cdot 0_4 78$$

The value of $l-k$ in this case for NaCl is $+ 0\cdot 0_3 91$, and for KCl $+0\cdot 0_2 13$. There is thus a closer approximation to equality in the values of $(l-k)\,\Delta\alpha/\Delta n$ for the two salts, for thermal expansion than for density. Accordingly the absolute differences in the values of $(P_1 - P_2)/n$ are smaller than in the case of density. But as the values themselves are much smaller, the differences between the values when expressed as percentages of any one of the values are greater. And thus the approximation to constancy, of $(P_1 - P_2)/n$, in the case of thermal expansion is not so great as in the case of density, when judged in this way.

For viscosity $l-k$ for NaCl is $-0\cdot 0022$ and for KCl $-0\cdot 0028$. The values of $(l-k)\,\Delta\alpha/\Delta n$ will thus be less nearly equal than in the case of the thermal expansion and the

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§ Wied. *Ann.*, liii. (1894), p. 14.