

At higher temperatures there are experiments by Woltjer & Kamerlingh Onnes (1924), Meissner & Voigt (1930) and, more recently, a careful series of experiments by Bradshaw & Pearson (1956). These experiments were all on capillary tube specimens and we compare them with the results from our capillary and bare wire specimens in table 7. As in the case of potassium, there is clearly a systematic difference between the results of the capillary tube experiments and the experiments on bare wires. As before we attribute this to the capillary tube constraints.

TABLE 6. THE IDEAL RESISTIVITY OF B.C.C. SODIUM AT ZERO PRESSURE AND AT CONSTANT DENSITY

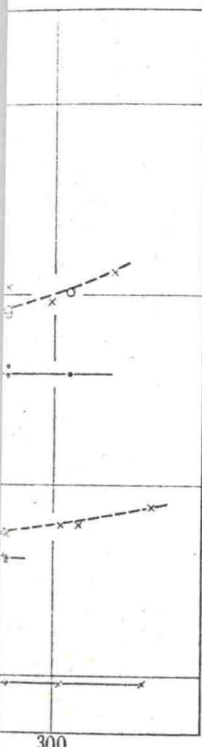
$T$ (°K)	$\rho_i/T^*$ ( $10^{-8} \Omega \text{ cm deg K}^{-1}$ )	$\rho'_i/T^*$ ( $10^{-8} \Omega \text{ cm deg K}^{-1}$ )
50	0.6338	0.6284
60	0.7913	0.7815
70	0.9108	0.8954
80	1.0063	0.9845
90	1.0835	1.0543
100	1.1455	1.1080
110	1.1956	1.1487
120	1.2367	1.1797
130	1.2719	1.2040
140	1.3025	1.2231
150	1.3295	1.2382
160	1.3535	1.2503
170	1.3754	1.2605
180	1.3966	1.2688
190	1.4171	1.2763
200	1.4371	1.2831
210	1.4571	1.2894
220	1.4760	1.2946
230	1.4938	1.2985
240	1.5109	1.3014
250	1.5286	1.3047
260	1.5472	1.3082
270	1.5653	1.3109
273-15	1.5703	1.3115
280	1.5828	1.3127
290	1.6011	1.3149
295	1.6102	1.3160

\* The random error in these values is  $\sim \pm 0.0003$  at all temperatures. The systematic error in  $\rho'_i/T$  (cf. table 2) is about the same size as the random error.

3.2.2. The dependence of resistance on pressure

Four specimens were studied in these experiments, Na (1), Na (2), Na (3) and Na (9). The results of our experiments are given in tables 8 (for the pure b.c.c. phase) and 9 (for two-phase mixtures). In table 8 we have included values obtained by Bridgman (1921) from experiments on bare wires. Our results can be adequately represented by a quadratic dependence of ideal resistance on pressure,  $R_i = R_0$

low-pressure apparatus. The agreement with one another, made in a glass capillary tube, resistance-temperature curves  $^{\circ}\text{K}$  and the only uncertainty



of lithium (b.c.c. phase), sodium  
temperature: ---, at zero pressure,  
at zero pressure. x Values from

measure the residual resistivity that the residual resistivity (Gugan 1960) so we have used resistivity. These results are given

tion of temperature has been temperatures is that of MacDonald, transformation on the resistivity results in general refer to two-