metals. As we have already emphasized, there exists an approximate reduced equation for the resistivity of the monovalent metals at temperatures above about $\frac{1}{4}\theta$. *A fortiori* we may expect that this is also true for one metal at different densities. If equation (1) is valid at different densities over a certain temperature range, then equation (2) should be valid over this range for any single metal. This, we believe, is why the simple theory for the temperature dependence of $\partial\ln\rho_i/\partial\ln V$ works so well.

The differences in the temperature dependence of ρ_i that become conspicuous in the different metals below about $\frac{1}{4}\theta$ may arise from a number of different causes; two of the most important are differences in the phonon spectra of different metals and different degrees of distortion of the Fermi surfaces. Bailyn (1960) has investigated the first of these effects in detail and Collins & Ziman (1961) the second. Their results show that the differences in the functional form of the resistivity curves for different metals can indeed be explained on the basis either of anisotropies in the phonon spectrum or of distortion of the Fermi surface: this would also imply that if the effect of pressure (on any one metal) changes either of these anisotropies, then the functional form of the resistivity curve will change and that we should then expect deviations from equation (2). Indeed we would expect this to be the normal situation. For the metals we have studied it appears that (2) is obeyed fairly well on the whole. Only for potassium, however, do we have reasonably accurate results in much of the region below $\frac{1}{4}\theta$, and we find that here there appear to be departures from equation (2). In sodium the martensitic transformation makes uncertain the interpretation of our measurements at the lowest temperatures (see §3·2·2 above) so that we can only test equation (2) down to a temperature of about $\frac{1}{6}\theta$. Within this range, however, the equation does seem to hold for sodium.

We can understand this result for sodium because it is generally agreed that sodium has an almost spherical Fermi surface which remains practically unaffected by pressures of the order of those we have used,† and because, as one can deduce from the measurements of the pressure dependence of the elastic constants (Daniels 1960; Beecroft & Swenson 1961), the anisotropy of the phonon spectrum is also practically unaffected by pressure. For potassium there is no firm knowledge about either of these effects, but our results suggest that the anisotropy of the Fermi surface and/or that of the phonon spectrum is changing with volume.

We have seen that our results, broadly speaking, confirm that γ_R is almost equal to γ_G. It is clear that *exact* quality would be most unlikely even for $T \gtrsim \frac{1}{4}\theta$ since θ_R and θ_D are in fact different averages over the normal modes of the lattice vibrations. The ideas of Bailyn and of Collins & Ziman would certainly suggest that when pressure changes the anisotropy of either the phonon spectrum or the Fermi surface there will be, in addition to the deviations from equation (2) below $\frac{1}{4}\theta$, differences between γ_R and γ_G. It is perhaps significant then that for sodium, where we find no deviations from equation (2), we also find close agreement of γ_R and γ_G. For potassium, where there *are* deviations from equation (2), the average value of

† Measurements of the pressure dependence of the Hall constant of the alkali metals by Deutsch *et al.* (1961) indicate that even in sodium the Fermi surface probably changes shape at least slightly under such pressures.