

's rule holds and that $\Delta = 0$.

$$(50)$$

$$\frac{\rho_0}{\rho} \frac{\partial \ln \rho_0}{\partial \ln V} \quad (51)$$

ature of interest and $\frac{\partial \ln \rho_0}{\partial \ln V}$

can be deduced from these

50) we use the correct equa-

$$+ \Delta \quad (52)$$

$$\ln \frac{\rho_0}{V} + \frac{\Delta}{\rho} \frac{\partial \ln \Delta}{\partial \ln V} \quad (53)$$

d Basinski, 1967), it is found
st temperatures is similar in
d mean that if one deduced
asurements on such alloys,
ould be a factor or two or
slightly smaller) errors would

partures from Matthiessen's
 $\partial \ln V$ is seen in the measure-
two samples of Rb of very
ation.) The less pure specimen
efficient of phonon induced

USIONS

essure on electrical resistivity
to know how the properties
ocities and electron-phonon

matrix elements vary with pressure. At higher temperatures, this information is still needed, but recent work by Dickey *et al.* has shown that the main features of the volume dependence of resistivity, at least in the alkali metals, depend on the electron-ion potential. The full detail of this potential must be retained if the model is to reproduce the more important features of the experimental results. To get detail-

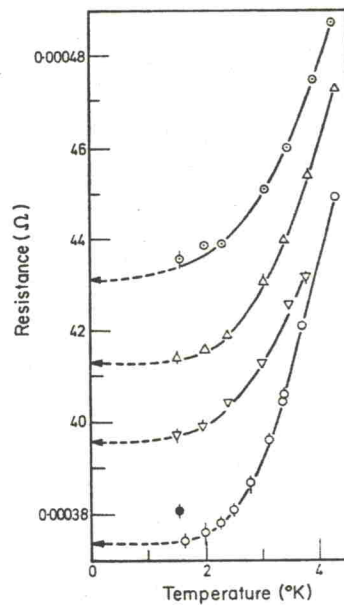


FIG. 28. Resistance versus temperature in Rb at various pressures at low temperatures. (From Dugdale and Phillips, 1965.)

ed numerical agreement will presumably require *both* this careful treatment of the potential *and* a more accurate treatment of the scattering geometry. For the present, however, the important thing is that the potential plays a vital role in these calculations.

This lesson would appear also to apply to the noble metals. Indeed many of the perplexing features of the transport properties of the monovalent metals (e.g., the anomalous sign of the thermo-power at high temperatures in Li, Cu, Ag, Au) may be resolved by paying more attention than hitherto to the electron-ion potential itself.

The work discussed in this article has been determined largely by my own interests. Nevertheless, here as elsewhere, there is now a clear and welcome trend in high-pressure physics: the theory is begin-