The assumptions are made that the temperature coefficient of resistance at constant order in the range from 368 to 298°C is only slightly dependent on the degree of order, and that this coefficient is a constant for each state of order in the temperature range of measurement. Plots of equilibrium resistance vs. temperature and resistance at constant order vs. temperature appear in Fig. 9.

(2) The order-dependent portion of the resistance, represented by the difference in resistance between the two curves of Fig. 9. is plotted against the order-dependent lattice parameter data of Feder et al, which were taken at 25°C. This plot is shown in Fig. 10. The assumption that the order dependent portion of both the lattice parameter and the resistance reflect the degree of order in the same way is verified by the linear relation exhibited in this plot.

The resistance at perfect order and 25°C, $R_o(25°C)$, is determined by extrapolation of the plot to $a_o = 3.7465$ Å. This is the value of the lattice parameter at perfect order and 25°C as determined by Feder et al by equilibration of their sample at temperatures in the range from 368 to 200°C. At 200°C, the ordering process occurs extremely slowly, and the equilibrium degree of order is nearly perfect.

(3) Since the specimens to be used in the kinetic experiments were subjected to the identical heat treatment as the monitored sample, the ratio (R_o/R_q) at 25°C should be the same for each specimen. This ratio was found to be