

RESULTS

Figures 4 through 8 display the data taken from samples annealed at various temperatures at 25 kilobars pressure. These five plots are included to represent the more than 90 diffusion runs made to date in this study.

It would be extremely difficult to accurately account for the diffusion which takes place during the time between when a sample is plated and when it is annealed, and while it is being taken to and returned from the anneal pressure; therefore, an experiment was conducted to see if such extraneous diffusion could be neglected. A sample was subjected to the extremes of the experimental technique. It sat at room temperature for one month prior to being annealed and was heated to a temperature greater than 210°C for one hour while being pumped to a pressure of 38 kilobars, but it was not annealed. The results of this experiment are displayed in Figure 9. The coordinate representing the square of the penetration distance is expanded to ten times that of Figures 4 through 8.

The results of many of the runs were questionable because of one experimental difficulty or another. The results of all runs for which there was no apparent experimental difficulty are displayed in the conventional $\log D$ vs $1/T$ form in Figure 10. Included also on this plot (Figure 10) are values reported by Seith and Keil⁴ for diffusion of silver into lead at