The behaviour of sample II at low temperatures requires special mention. The effect of pressure on its residual resistance was measured on two separate occasions. On the first, the results, while not strikingly unusual, showed a greater scatter than

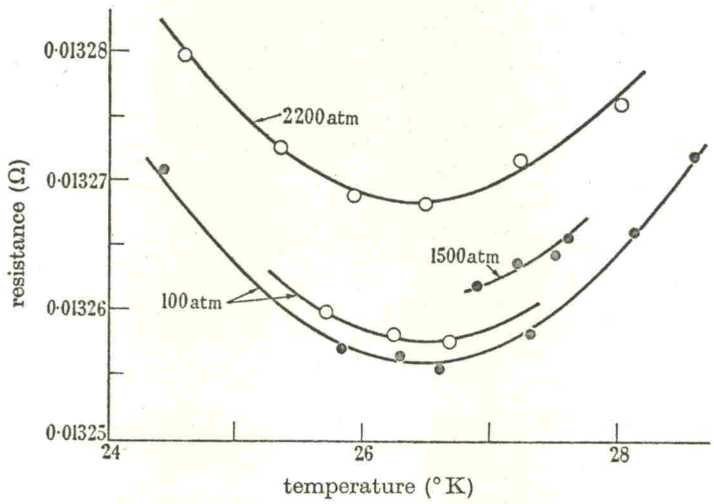

FIGURE 2. The resistance of a copper-iron alloy (0·056 % iron) in the neighbourhood of the minimum at various pressures. ●, measured 20 November 1956; ○, measured 22 November 1956.

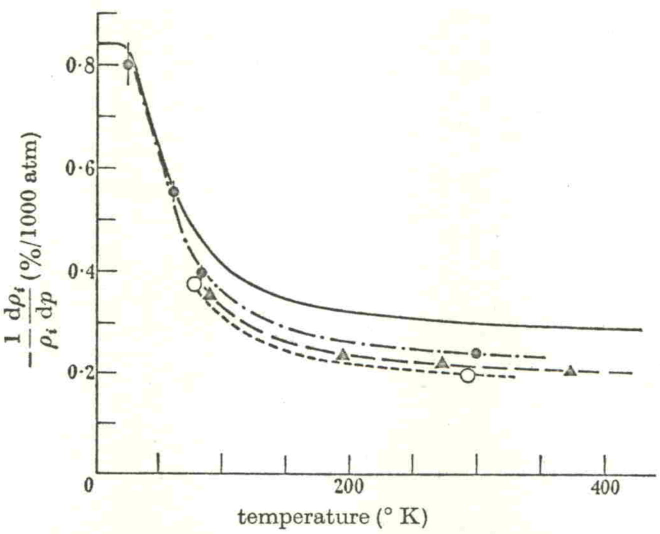

FIGURE 3. The pressure coefficient of the ideal resistivity of copper as a function of temperature. ●, sample I; ○, sample II; ▲, Bridgman's values. The continuous line shows the values based on Grüneisen's theory.

we had expected. These first measurements were made with the bomb in a vacuum jacket. We decided then to repeat the experiment with the bomb immersed directly in the liquid helium. We found that on the first application of pressure (about 2000 atm at 4·2° K) the resistance rose in the normal way. On releasing the pressure the resistance did not diminish to its starting value but rose still more. Because