normal trace and the extrapolation of the linear portion of the transition curve (see the dotted lines in figure 1). The mean of the two temperatures thus obtained has been taken as T_c.

Values of T_c for vanadium and niobium, as functions of pressure, are shown graphically in figures 2 and 3 respectively. The values of $\partial T_c/\partial P$ deduced from these plots for the different samples of each element agree within the limits of experimental accuracy. The mean value of $\partial T_c/\partial P$ for each element is given in Table 2. The atmospheric pressure value of T_c, on the other hand, varies appreciably for the different samples of vanadium and niobium. This variation is again a reflection of the difference in purity and the state of strain of the various samples. A similar insensitivity of the value of $\partial T_c/\partial P$ to the purity of the sample was also observed for tantalum, the remaining group VB element, by Swenson.[3]

It would be of interest to compare our observed values of $\partial T_c/\partial P$ for each element with the values determined from Ehrenfest's thermodynamic relationship for a phase change of the second kind,[4]

$$\left(\frac{\partial T_c}{\partial P}\right)_{H=0} = \frac{V T_c (\alpha_n - \alpha_s)}{C_n - C_s} \tag{1}$$

where α and C are the volume thermal expansion coefficient and the specific heat in the normal (n) and the superconducting (s) states respectively, measured at the superconducting transition temperature in zero magnetic field. Unfortunately, though experimental values of $C_s - C_n$ are readily available,[5-7] there are no data for $\alpha_s - \alpha_n$. White[8] expressed his thermal expansion data on vanadium, niobium and tantalum in the normal and superconducting states in terms of $(\partial H_c/\partial P)$ calculated from the relationship,[4]