measurements it is concluded that the uncertainty in the absolute temperature, as determined with this thermometer, is $\pm 0.05^{o}K$ between 4.2 and $7^{o}K$ and that it may be as high as $\pm 0.1^{o}K$ for temperatures between 7 and $10^{o}K$. However, in the present measurements we are primarily concerned with the variation of the transition temperature and this can be determined to $\pm 0.01^{o}K$.

Superconducting transition curves were continuously recorded on a Moseley Autograf recorder. The X and Y axes of the recorder were driven, after suitable amplification, by the voltage developed across the thermometer and by the rectified off balance voltage from the detector bridge. The latter changed appreciably only during the superconducting transition.

Typical superconducting transition curves, which have been taken directly from the recorder trace, are shown in figure 1 for a sample of each element. All of the vanadium and niobium samples examined showed structure, similar to that shown in figure 1, in the initial stages of the superconducting transition. This structure is presumably associated with the presence of impurities or strains in the samples although it is also possible that it is a surface effect. Curves (a) and (b) are taken from measurements on the vanadium sample V2; curve (b) taken at 8.5 Kbar exhibits the most extensive structure observed. Curve (c), on the niobium sample Nb2, was taken at atmospheric pressure and the transition remained essentially unchanged up to the highest pressure applied. In all cases the sharp, linear region of the transition curve was used to determine the superconducting transition temperature. This was taken, for both the warming and cooling cycles through the transition, as the temperature given by the intersection of the extrapolated