constants observed for the "ordinary" and "dense" phases. The assumption regarding the electron transition mentioned is also supported by data of /3/, relating to a sharp rise in the electrical conductivity of cerium after the transformation.

The pressure associated with the transformation in cerium has been estimated differently in different investigations. In 1927 Bridgman observed the transformation at 30° and 7600 kg/cm^2 ; at 75° the transformation pressure was 9400 kg/cm^2. Later /3/, working with cerium of unknown purity, Bridgman found a transformation pressure of 12,430 kg/cm^2. Finally, in 1951 /4/ and 1952 /5/, using extremely pure cerium, Bridgman observed a transformation at a pressure of about 7000 kg/cm^2. The extent of the fall in volume during the transformation was also not established exactly. The reason for this was that, even before reaching the transformation region, the compressibility of cerium started rising rapidly with increasing pressure, which made it more difficult to "intercept" the extent of the change in volume associated with the transformation itself. According to Bridgman's estimate /4/, this quantity was about 8% ; the total change in volume on raising the pressure from atmospheric to 15,000 kg/cm^2 was 16.55%.

The indeterminacy in the extent of the fall in volume attributable to the transformation made it difficult to carry out an exact calculation of the latent heat of the transformation from the Clausius-Clapeyron equation. A determination of this quantity is nevertheless of very great interest. In this paper we shall consider its determination under high-pressure conditions.