calculate r_{max} it is found that for argon, nitrogen, and oxygen the value is approximately 2.5×10^{-6} cm, whereas for helium it is about 10^{-5} cm. This suggests that gaseous nuclei were probably still present. If such large nuclei exist in the liquid they should, if given sufficient time, settle out in a centrifugal field but the values obtained by the centrifugal method for helium II were almost the same as those by the present method. Also very large holes in helium might possibly lower the dielectric strength of the liquid. However some very rough measurements indicated that the dielectric strength as measured by impulsively applied voltages (10^{-5} sec) to the liquid helium was at least the order of 10^5 v/cm, which was as high as the method could measure reliably. Gaseous nuclei also may exist on the interface between the liquid and the glass U tube.

Experiments[9] on the flow of helium II through fine channels such as are in Vicor glass show that the helium II does not exhibit superfluid properties until its temperature is reduced to the order of 1.3°. Consequently it may be that the helium II did not fill all of the smaller cracks in the Pyrex glass U tube used in the present experiments. In order to test this, the glass U tube was replaced by a U tube made of stainless steel instead of glass. The change in resistance of a carbon resistor was used to register the liquid fracture. The results obtained were in substantial agreement with those found with the glass U tube. An attempt also was made to observe whether the initial vapor bubble formed on the wall or in the liquid. Both visual and rapid motion picture methods were used to observe the phenomena. The bubble formed near the upper surface of the U tube but it was not possible to determine whether or not it was on the wall or in the liquid. In the process of decelerating the U tube, vibrations no doubt were set up in the long stainless steel rod R although care was taken to damp them to a minimum. This may have increased the effective tension applied to the liquid and thus made the measured values in Table I too small. However, the effect is believed not to be important except possibly in the case of liquid helium.

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[9] K. R. Atkins and H. Seki, *Proceedings of the International Conference on Low-Temperature Physics and Chemistry, Geneva, August, 1957.*