tetragonal distortion of the lattice and the displacements of the bromide ions which occur in the γ phase on ordering. Nor is the Ising model theory[25] applied to the NH_4Cl data valid in the case of the β–γ transition in NH_4Br.

The behavior of c_{11} just above the lambda point in ammonium bromide is very similar to that observed in ammonium chloride, whereas the behavior of C' is different in the two cases. Unlike the data for the chloride, C' values for the bromide show a marked anomalous decrease which is apparent as much as 15°K above the lambda point (see Fig. 4). Attenuation of the ultrasonic waves associated with both c_{11} and C' was very high over a considerable range of temperatures below the lambda point. This is presumably due to the presence of domains consisting of tetragonal crystallites with their unique axes lying at random along one of the three original cubic axes. The presence of domains is common in antiferromagnetic crystals and γ-phase ammonium bromide is analogous to an antiferromagnet.

A more extended discussion of the properties of the ordered phase and of the lambda transition region is difficult and inappropriate at this time. New experimental work is now in progress on ammonium bromide in the region 100° to 250°K and 0 to 6 kbar. This will provide information on both the γ and δ phases, as well as new data in the regions of the various transition lines.

[25] R. Renard and C. W. Garland, J. Chem. Phys. **44,** 1125 (1966).