

The results obtained with alloy No. IVa lends support to the view expressed by Hill, that when these alloys are raised to a temperature higher than the transformation point, and then cooled, they possess a permeability which is largely determined by the temperature from which the cooling took place. This alloy when cooled from the melting point as curve I., Fig. 18, shows, possessed a permeability very much higher than that which it had when cooled from a red heat.

This suggests a parallel between the behavior of these alloys and those studied by Heycock and Neville.<sup>1</sup> In their investigations it was found that the structure of an alloy at an temperature could be ascertained very closely by suddenly chilling it from that temperature. It is possible that these alloys under varying conditions of temperature, may pass through different phases, some of which may be magnetic, and others not. From the general results of the present investigations it is evident that the magnetic properties of the different alloys are intimately associated with their molecular structure, and since the structure of an alloy at any temperature can be ascertained by rapid cooling from that temperature, it is possible that the magnetic properties of the alloy may also be investigated by the same procedure. The results obtained by Hill and other investigators would seem to point in that direction.

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<sup>1</sup> *Rapports Congrès Int. de Phys.*, Paris, 1900, p. 131.