tive and the whole transverse surface uniformly negative. In order to intensify the conduction of the electric current, moisture is not only necessary externally, but is well provided for internally, as the nerve fibre is, throughout, a moist conductor. Nerve fibres are in fact only finely drawn processes of cells, containing inorganic salts within them, and the electrical conductivity is provided by the electrotonic currents and by their distribution. The axis cylinder of the nerve fibre is a better conductor than the tissues which ensheath the fibre, and more electricity, in fact, is carried or conveyed along the axis cylinders than is at the same time carried by the other tissues of the nerve. The electrical phenomena of nerve depend entirely on the inorganic salts which it contains, and from recent investigations it has been proved that the nerve trunk has three kinds of conducting material, an external medium of poor conductivity, a dividing membrane, and an internal solution of conductivity of a higher order than that of the external solution.

Recent investigations as to the physical conditions present within the nerve fibre, in the axis cylinder, have pointed out the existence of a remarkable condition of proteid material in a state of colloid solution, in some way a possible store of potential energy. In this direction, demonstration of the potassium ring of McCallum, surrounding granules within the nerve fibre, is most interesting and important, in relationship with solid colloid masses in aqueous solutions of salts. Such electrolytes, even by a limited degree of motion, tend to diminish the usefulness of an electrical current, transmitted through the colloid solution. A single fact, which dominates all, is that nerve is a material adapted for the transmission of energy, from point