NATURAL SCIENCE.

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NOTES.

The great problem at present, in lighting by electricity, is to find an economical substitute for the steam-engine to drive the dynamo electric-engine. The conversion of heat into electricity is still too costly.

One of the signs of the times in which we live is the formation, both in England and in the United States, of a society for "psychical research." One of the objects of the society is to thoroughly investigate the pretensions of so-called "thought readers." As the society is made up of men of the highest standing, it may be taken for granted that the world will know before long exactly what proportion of fraud characterizes these pretensions, and any work done in this direction would amply justify the formation of the society.

It is quite clear that a great deal has yet to be learned in regard to the functions of the constituent parts of plants. Some recent observations tend to show that many of the views enunciated by Sachs will have to be considerably modified. Dr. Haberlandt, in a new work on the Physiological Anatomy of Plants, challenges the correctness of Sachs's classification of tissues, showing that it should be based, not on embryology, nor on collocation, but on structure as related to function; and therefore divides them into "protective" and "nutritive." Sachs's views in regard to the conducting system, also, find no favour in the new work. It seems to be clearly shown that Sachs's experiments were untrustworthy. His doctrine in regard to the passage of water upward through the substance of the walls of wood-cells, whilst the vessels are filled with air, is familiar to every botanist. It is now shown that water ascends through the vessels, whilst the wood-cells are altogether mechanical in their function. Throughout the book the anatomy of the plant is discussed with exclusive reference to the functions of the various parts.

A new departure in the way of meteorological observations has just been made at Philadelphia. On the 19th of last month, a balloon ascent was made from that city, exclusively for meteorological purposes. In Europe the balloon has long been in use for scientific objects, but hitherto no attempt has been made on this continent to take advantage of the aëronaut's art. As the course of a storm can now be predicted with a fair degree of certainty, it has become desirable to study unusual atmospheric conditions, and a series of ascents has been planned with this object in view. The first of the series, to which reference is here made, was fairly successful in its results, and doubtless experience will suggest ways of increasing the usefulness of this method of observation.

Since the meeting of the British Association at Montreal last summer, a curious discussion has arisen regarding the existence of a large lake to the north of the waters held between Hudson's Bay and the St. Lawrence. Such a lake (*Mistassini*) is laid down on all our maps, but the best ones, whilst apparently indicating that the western end of the lake has been surveyed, all have the northern and eastern boundaries laid down in dotted lines, showing that these boundaries are conjectural. The discussion referred to is said to be due to a paper read by the Rev. Professor Laflamme, and subsequently commented upon by General Lefroy, the chairman of the Geographical Section of the British Association. This paper speaks of the lake as rivalling Ontario, and perhaps Superior, in magnitude. An opinion based on a statement of Father Albanel, the first explorer of that region, in 1672, that it would take twenty days in fine weather to make a circuit of it. It would certainly be a most extraordinary thing if it should be left for explorers of the present day to discover such an expanse of waters, more than two hundred years after the Jesuits correctly mapped out Lake Superior, and when they also had posts at no great distance from the lake under discussion. Of one thing, however, there can be no doubt, and that is that our knowledge of the region of this lake has made but little advance during the last two