PROF. KARL SELIM LEMSTRÖM.

AS has already been announced, Prof. Karl Selim Lemström, whose name is known to our readers by his investigations on the aurora borealis and the influence of electricity on plant growth, died on October 2 after a short illness.

He was born in 1838 not far from Helsingfors, and entered the university in 1857, where he devoted himself to studies of physics and mathematics. His first scientific work, published in 1868, was founded on experiments made in Stockholm under the guidance of the late E. Edlund, the celebrated physicist, and dealt with the intensity curve of induction currents in relation to time, the intensity of the inducing current, &c. A summary was published in French in the *Proceedings* of the Swedish Academy of Sciences in 1870.

Lemström joined the late Baron A. E. Nordenskjöld's expedition to Spitsbergen in 1868 as physicist. In the two following years he worked in the laboratory of V. Regnault in Paris; in 1871 he made a journey to Lapland; in 1872 he continued his researches on the induction currents at the St. Petersburg Academy of Sciences. His papers during these years are printed in the *Proceedings* of the Swedish Academy and of the Finland Society of Sciences.

During the journey to Spitsbergen Lemström was engaged in observations on atmospheric electricity, terrestrial magnetism, and the aurora borealis. These observations, continued in Lapland, suggested to him a new theory of the last named phenomenon, so enigmatic even after the investigations of De la Rive, Loomis and others. This theory he expounded in a dissertation entitled "The Electrical Discharge in the Aurora and the Auroral Spectrum" (1873).

His next work, on the causes of terrestrial magnetism, was published in 1877. Starting from Edlund's well known theory on the nature of electricity, he argued that the rotation of the earth in an atmosphere of non-rotating ether causes the electric currents of which the terrestrial magnetism is a manifestation, and he described several experiments in confirmation of these views.

Appointed in 1878 professor of physics at the Helsingfors University, he continued his investigations on the aurora borealis in Lapland in 1882–4, where he organised two stations for taking part in the international polar exploration of these years. The investigations carried on by this expedition were published in a large work, "Exploration internationale des Régions polaires, &c.," of which vol. iii. (1898) contains his auroral researches.

One very interesting work by Lemström is devoted to the study of night frosts and the means to prevent their devastations, so frequent in Finland. Lemström emphasised the nocturnal radiation of heat as the principal cause of the night frosts, and showed that in calm and clear summer nights the air, cooled by the radiating soil and plants, must remain at the surface of the earth, and, flowing like water, gather on lower grounds, which generally are most exposed to frost. He proposed to prevent the radiation by artificial clouds of smoke, and invented for this purpose "torches" or tubes of peat (described in *Acta Societatis Scientiarum Fennicae*, Tome xx.).

Moreover, Lemström made important experiments on the influence of electricity on growing plants, on which subject he read a paper before the British Association at Bristol in 1898. The influence in question was found by exposing the plants to electric tension from a metallic wire net, provided with points and connected with the positive pole of a Holtz machine, the negative pole being conducted to the earth.

His frost experiments directed attention to the prevention of frost damage in several countries, and also gave rise to new scientific investigations (for instance, by Th. Homén). It is to be hoped that further work may be devoted to this important subject as well as to the electrocultural question, which have both but very little advanced from the point to which they were brought by the warm-hearted, indefatigable pioneer, Selim Lemström. ARTHUR RINDELL.

NOTES.

IT was announced last week that the Royal Society of Edinburgh has awarded the Gunning Victoria Jubilee prize for 1900–4 to Sir James Dewar, F.R.S. We now learn that the following additional awards have been made:—the Keith prize for 1901–3 to Sir William Turner, K.C.B., F.R.S., for his memoir entitled "A Contribution to the Craniology of the People of Scotland," and for his "Contributions to the Craniology of the People of the Empire of India": the Makdougall-Brisbane prize for 1902–4 to Mr. J. Dougall for his paper on an analytical theory of the equilibrium of an isotropic elastic plate; the Neill prize for 1901–4 to Prof. J. Graham Kerr for his researches on *Lepidosiren paradoxa*.

A VALUABLE collection of specimens illustrative of the fauna of the deep sea has recently been received at the British (Natural History) Museum as a gift from H.M. the King of Portugal. The collection is reported to include a number of deep-sea fishes, among which are sharks of considerable size, captured during His Majesty's recent cruise in Portuguese waters. Several of these may prove to have been previously unrepresented in the British Museum collection. King Carlos, like the Prince of Monaco, is much interested in the fauna of the deep sea, of which he himself has done much to increase our knowledge. The collection sent to the museum is also stated to contain a series of contributions to our knowledge of the deep-sea fauna from the pen of His Majesty.

THE sale of Chartley Park, Staffordshire, the hereditary seat of Lord Ferrers, involves also a change of ownership of the remnant of the celebrated herd of white cattle which have been kept there for the last 700 years. It is much to be regretted that the cattle could not have gone with the park, and have been maintained there by the new owner; but as this is not to be, it is to be hoped that they will be given a safe home elsewhere, where they will flourish and increase. It was long considered that the herds of wild cattle in various British parks were direct descendants of the wild aurochs, but it is now generally admitted (largely owing to the writings of Mr. Lydekker) that they are derived from domesticated albino breeds nearly allied to the Pembroke and other black Welsh strains, some of which show a marked tendency to albinism. This view, as pointed out by a writer in the *Times* of November 29, is strongly supported by the fact that the Chartley cattle frequently produce black calves. The theory advocated by a later writer in the same journal that the British park cattle are the descendants of a white sacrificial breed introduced by the Romans rests upon no solid basis. The Chartley cattle, believed to be reduced to nine head, are to be captured by the purchaser—no easy task.

THE anniversary dinner of the Royal Society was being held last week as we went to press. In proposing the toast of the Royal Society, Mr. Arnold-Forster said that every day he has lived in a public office he has been more and more impressed with the need for a greater knowledge in our