

administering the muzzling order—rabies has not been stamped out in Wales, does not touch the real merits of the question.

Mr. Long, the former President of the Board of Agriculture, who has proved himself thoroughly well instructed in the whole question of rabies, has with laudable firmness resisted the outcry and the repeated assaults of the uninstructed sentimentalists, and as a result was able to demonstrate that by the strict carrying out of the muzzling order rabies in England was checked and was almost reduced to extinction, though at first it was so prevalent as to be really alarming. It seems hopeless to discuss this or any other dog-question with people who, in the face of all expert opinion as regards prevention of rabies, and particularly against the opinion of sensible owners of dogs, can write that "the muzzling order and the muzzle are a gross and wanton cruelty to animals."

But even if it were not an exaggeration, as we are persuaded it is, that the owners of dogs in general object to the muzzling order and consider it a cruelty to animals, what about the human species? Human beings who are not members of the executive committee of the National Canine Defence League regard the muzzling order as an important safeguard. One of the duties of the State is to protect the health and lives of its citizens. Hydrophobia of man is one of the most terrible diseases, and the slaughter of stray dogs and the muzzling of all dogs in places where rabies is rife has been proved to be at present the best and only means to prevent the spread of the disease to man. Besides, it should be the interest of owners of valuable animals to insist on the retention and strict carrying out of a measure which to a very large extent insures against the spread of rabies and consequent loss—seemingly of indifference to the members of the Canine Defence League.

#### RECENT WORK OF THE GEOLOGICAL SURVEY.

THE Report referred to below<sup>1</sup> shows that the Geological Survey continues with activity and success its investigation of the geology of these islands. It bears witness to a large amount of steady and useful routine work, which may not make much show, but which will contribute to our knowledge of the detailed structure of these islands and in some instances will have direct economic usefulness. Among the more interesting scientific results of the year's work, the progress of the re-examination of Cornwall has brought to light evidence of a younger granite than the main mass of that rock, showing that the granitic intrusions form a somewhat more complex series than had been supposed. The clue, however, to the detailed structure of the so-called "killas" and the boundaries between the true Devonian and older rocks still eludes the keen eyes with which the surveyors are searching for it. If we could hope that the appointment of a mining geologist would do anything towards reviving the decayed mining industry of the region, we should still more rejoice in this increase to the strength of the staff. Another of the problems which for years past has baffled the officers of the Survey is that of the Old Red Sandstone of South Wales. They are still unable to draw any satisfactory line between the lower and upper divisions of the system. If the key is not found before the western coast is reached, we can hardly hope that it will be discovered in any part of this region.

Some interesting discoveries were made during the year in Scotland. Foremost among these is the finding of proof that the granite of south-west Argyllshire has

<sup>1</sup> "Summary of Progress of the Geological Survey of the United Kingdom and Museum of Practical Geology for 1901."

invaded and altered a portion of the Lower Old Red Sandstone series of Lorne. The importance of this new fact lies in its relation to the history of the metamorphism and igneous protrusions of the Scottish Highlands, for it shows that some of the granitic masses, like those of Galloway and Leinster, are certainly post-Silurian in age. Another notable "find" is that of the zone of *Pecten asper* in the island of Scalpay and of Upper Cretaceous rocks in the sound of Soay.

In Ireland, the energies of the Survey are now concentrated on the Drift, with the view of preparing accurate maps of the superficial deposits of the country. But under Mr. Lamplugh's direction, the geological interest of the glacial geology is not likely to be lost sight of. One of the features of the work in the Dublin district was the finding of evidence which seems to support the view that the eskers represent water-channels which existed under the ice-sheet.

A new arrangement has been made in this Summary. Its materials are grouped by districts instead of, as formerly, by formations. The change will no doubt save trouble in the preparation of the volume, but it gives a great deal more to the geologist who wishes to ascertain what additions to our knowledge the Survey has been able to make in any particular part of the geological record. Another change is the omission of the Director's name from the book. It surely cannot have been the wish of those who wield the new brooms at South Kensington to sweep Mr. Teall's name clean out of his Report.

#### PROF. P. P. DÉHERAIN.

DÉHERAIN (b. 1830, d. 1902), who in 1887 succeeded to Boussingault's place in the Académie des Sciences, was, for the last twenty-two years of his life, professor of vegetable physiology as applied to agriculture at the Muséum in Paris. His early work was chiefly agricultural, and included researches on calcium phosphate, on the salts of potassium, &c.; he was author of a "Cours de Chimie agricole," and it should not be forgotten that he founded the *Annales agronomiques*. In the region of pure physiology, he was author of a number of memoirs, of which those written in collaboration with Maquenne, Moissan and others are perhaps especially well known. He worked at gaseous interchange, including the absorption of oxygen by succulents and by oily seeds, also at the assimilation of CO<sub>2</sub>, being especially interested in the action of the different parts of the spectrum on this process. His researches extended to other subjects, such as transpiration, the assimilation of free nitrogen and denitrification.

A sympathetic appreciation of his personal character and of his career as a teacher is given by his former pupil, Maquenne, in *La Nature* of December 13, to which we acknowledge our indebtedness. Although Déherain's name is not associated with any great discovery, he deserves the place he won for himself in the annals of plant-physiology and the honour due to one who dies in harness.

F. D.

#### TRANSATLANTIC WIRELESS TELEGRAPHY.

MR. MARCONI'S latest success is a wonderful achievement. Messages have been exchanged in both directions across the Atlantic, between his two new stations at Glace Bay, Cape Breton, and Poldhu, Cornwall. Transatlantic wireless telegraphy has thus been successfully established; and the persistent effort which has enabled this result to be accomplished merits the fullest recognition. The messages which we print from the *Times* represent the inauguration of a system of

communication which is not only of the highest scientific interest, but also of practical importance.

The following messages and particulars referring to them appeared in the *Times* of December 22 and December 23 :—

Ottawa, December 21.

The first message to be sent across the Atlantic Ocean by wireless telegraphy was despatched to-day to King Edward by Lord Minto. Notice of its successful transmission was received to-night by the Governor in the following message :—

Glace Bay, Cape Breton.

"I have the honour to inform your Excellency that your message to his Majesty has now been transmitted by me from Cape Breton to Cornwall by wireless telegraphy, and has been forwarded to its destination.—G. MARCONI."

Lord Minto replied as follows :—

"I am delighted at your message, which I have just received. My warmest congratulations on your splendid success."

December 22.

King Edward has replied to Lord Minto's telegram sent to His Majesty by Signor Marconi's apparatus, as follows :—

"I am much interested by the wireless message which you have sent me, and am delighted at the success of Signor Marconi's great invention, which brings Great Britain and Canada into still closer connection.—EDWARD."

On Monday, the *Times* published the following message from its correspondent at Glace Bay :—

"Being present at its transmission in Signor Marconi's Canadian station, I have the honour to send through the *Times* the inventor's first wireless Transatlantic message of greeting to England and Italy."

The following message, also transmitted by wireless telegraphy, was published on Tuesday :—

The Government of Canada, through the *Times*, desires to congratulate the British people on the accomplishment by Marconi of the greatest feat which modern science has yet achieved.

"CARTWRIGHT, Acting Premier,  
"Ottawa, December 21."

### NOTES.

THE King of Denmark has conferred upon Lord Lister the honour of Knighthood of the Grand Cross of the Order of Dannebrog.

M. DARBOUX, permanent secretary of the Paris Academy of Sciences, has been appointed a member of the Bureau des Longitudes in succession to the late Prof. Cornu.

Mr. C. A. ANGOT, of the Bureau central météorologique de France, and Prof. W. L. MOORE, of the United States Weather Bureau, have been elected honorary members of the Royal Meteorological Society.

THE council of the Manchester Literary and Philosophical Society has awarded the Wilde gold medal for 1903 to Prof. F. W. CLARKE, of the United States Geological Survey, and a Dalton medal to Prof. OSBORNE REYNOLDS, F.R.S. In view of the fact that next year will mark the centenary of the discovery by Dalton of the atomic theory, Prof. CLARKE (whose writings on the atomic weights are well known) has also been invited and has consented to deliver the Wilde lecture for 1903. The presentation of the medals and the delivery of the lecture will probably take place in May, 1903.

AT the general meeting of the Zoological Society of London on December 18, it was announced that Mr. William Lutley Sclater had been selected by the council out of twenty-two applicants for the vacant post of secretary. Mr. Sclater is now director of the South African Museum, Cape Town and has previously held appointments as science master at Eton and as assistant director of the Indian Museum, Calcutta. He is a

well known authority on the mammals and birds of India and Africa, and on other zoological subjects, and is at present editing a series of volumes on the fauna of South Africa, of which four have already been published.

WE regret to record the death, on December 13, of Dr. JOHN YOUNG, late professor of natural history in Glasgow University since 1866.

THE death is announced of Prof. ZAAYER, professor of anatomy in the University of Leyden. The death is also announced of Prof. LEONARD LANDOIS, professor of physiology at the University of Greifswald (Pomerania).

MR. T. BRICE PHILLIPS, of Uckfield, has been awarded the prize of fifty pounds, together with a silver medal, offered by the council of the Society of Arts for his essay on "Existing Laws, By-laws and Regulations Relating to Protection from Fire, with Criticisms and Suggestions." Prizes of ten pounds with a bronze medal have also been awarded to Mr. George H. Paul and to Dr. W. C. Henderson.

IT is announced in *Science* that the Section of Geology and Geography of the American Association for the Advancement of Science, which will meet at Washington on December 27, has arranged to devote a session of the meeting to the discussion of the recent eruptions of Mont Pelée and La Soufrière by Messrs. RUSSELL, HILL, HEILPRIN, JAGGAR, CURTIS and HOVEY, who visited the islands of Martinique and St. Vincent a few months ago.

THE Coats family have given 10,000*l.* between them to the cancer research scheme, 5000*l.* being from Sir Thomas Coats and family, and 5000*l.* from Mr. Archibald Coats and his two brothers. The *Times* states that a few more such contributions would bring the fund up to the required amount, and would enable the investigations to be carried through on the comprehensive lines indicated in the scheme which was formulated and is being directed by the Royal Colleges of Physicians and Surgeons.

A REUTER message states that at 9.30 a.m. on December 16, Andijan, in the province of Fergana, Russian Central Asia, was totally destroyed by an earthquake. Andijan is a town of about 50,000 inhabitants. According to a rough estimate, 16,000 houses have been destroyed and 2500 persons killed as a result of the earthquake. Subterranean rumblings and tremblings of the earth continue. At New Marghelan, the capital of Fergana province, the shock lasted nearly three minutes. The direction was from north-east to south-west.

A TELEGRAM to the Paris *Petit Journal*, dated December 17, states that for several days past Mount Vesuvius has been throwing out rock masses, vapour and dust.

WE learn from the *Times* that news has been received at Stockholm that the Swedish Antarctic exploration ship *Antarctic* left Tierra del Fuego at the beginning of November on its second summer expedition. It was expected that the expedition, after some cartographic work and natural historical research in the northern and western portions of the Dirck Gerritz Archipelago, would arrive about December 10 at the winter quarters in Snow Hill Land, where Dr. Nordenskjöld would resume the leadership of the entire expedition. The *Antarctic* will probably return to Port Stanley (Falkland Islands) at the end of February or the beginning of March.

IN the House of Commons on December 16, the President of the Board of Trade was asked whether he was aware that three dangerous varieties of colour-blindness escaped detection by the Board of Trade test, whilst many normal-sighted persons were rejected by it. In reply, Mr. Gerald Balfour said the present