

Prof. J. C. ADAMS, F.R.S., ex-President of the Astronomical Society.  
 Prof. W. G. ADAMS, F.R.S., ex-President of the Physical Society.  
 Sir GEORGE B. AIRY, K.C.B., F.R.S., ex-Astronomer-Royal, and ex-President of the Royal Society.  
 Sir W. BOWMAN, Bart., F.R.S., formerly Secretary to the Royal Institution.  
 Sir F. BRAMWELL, F.R.S., Secretary to the Royal Institution, and ex-President of the Institution of Civil Engineers.  
 Prof. CAYLEY, F.R.S., ex-President of the British Association.  
 Prof. CLIFTON, F.R.S., ex-President of the Physical Society.  
 W. CROOKES, Esq., F.R.S., President of the Chemical Society.  
 W. H. M. CHRISTIE, Esq., F.R.S., Astronomer-Royal.  
 WARREN DE LA RUE, Esq., F.R.S., ex-President of the Royal Astronomical and Chemical Societies.  
 Prof. DEWAR, F.R.S., Professor of Chemistry in the Royal Institution.  
 Colonel DONNELLY, C.B., Secretary to the Science and Art Department.  
 Prof. P. M. DUNCAN, F.R.S., ex-President of the Geological Society.  
 W. T. HISHELTON DYER, Esq., F.R.S., Director of the Royal Gardens, Kew.  
 Dr. EVANS, Treasurer of the Royal Society, and President of the Society of Antiquaries.  
 Prof. FLOWER, F.R.S., Director of the Natural History Department, British Museum.  
 Prof. G. CAREY FOSTER, F.R.S., ex-President of the Physical Society.  
 Prof. M. FOSTER, Secretary of the Royal Society.  
 F. GALTON, Esq., F.R.S., President of the Anthropological Society.  
 Prof. GAMGEE, F.R.S., Professor of Physiology in the Royal Institution.  
 A. GEIKIE, Esq., F.R.S., Director-General of the Geological Survey.  
 Sir W. GROVE, F.R.S., ex-President of the British Association.  
 Dr. HIRST, F.R.S., ex-President of the Mathematical Society.  
 Sir J. HOOKER, F.R.S., ex-President of the Royal Society.  
 Prof. HUXLEY, F.R.S., ex-President of the Royal Society.  
 Prof. JUDD, F.R.S., President of the Geological Society.  
 Sir JOHN LUBBOCK, F.R.S., ex-President of the British Association.  
 HUGO MÜLLER, Esq., F.R.S., ex-President of the Chemical Society.  
 Prof. ODLING, F.R.S., ex-President of the Chemical Society.  
 Sir LYON PLAYFAIR, K.C.B., F.R.S., ex-President of the British Association.  
 Lord RAYLEIGH, Secretary of the Royal Society.  
 Admiral Sir G. H. RICHARDS, K.C.B., F.R.S., ex-Hydrographer to the Navy.  
 Sir H. E. ROSCOE, F.R.S., ex-President of the Chemical Society, and President-Elect of the British Association.  
 Prof. BALFOUR STEWART, F.R.S., President of the Physical Society.  
 General R. STRACHEY, F.R.S., President of the Royal Geographical Society.  
 Sir W. THOMSON, F.R.S., President of the Royal Society of Edinburgh.  
 Captain WHARTON, R.N., F.R.S., Hydrographer to the Navy.  
 Professor A. W. WILLIAMSON, Foreign Secretary of the Royal Society.

#### M. BOUSSINGAULT.

STUDENTS of agricultural chemistry have received with much regret the tidings of the death of M. Boussingault, one of the earliest and most eminent investigators in this branch of science. He was born at Paris on February 2, 1802, and obtained his scientific education at the School of Mines of St. Étienne. When little more than twenty years of age, he went as a mining engineer to Columbia, South America, where he remained ten years. During his residence in South America he made the acquaintance of Alexander von Humboldt, who warmly praised his work in chemistry, meteorology, geography, and astronomy. On his return to France, M.

Boussingault was appointed Professor of Chemistry at Lyons. He married the sister of M. Lebel, who had been his fellow student at St. Étienne, and by his marriage he became, with his brother-in-law, joint proprietor of the estate of Bechelbronn, in Alsace. Here he set up the first laboratory that had ever been established on a farm, and carried on a long series of important researches.

From the time of his marriage, Boussingault generally spent about half the year in Paris, and the other half in Alsace. In 1836, he published a paper on the quantity of nitrogen in different foods, and on the equivalents of the foods, founded on the amounts of nitrogen they contained. This was his first important contribution to agricultural chemistry. It was soon followed by others, which secured for him, in 1839, the honour of being elected a member of the Institute. Among his publications in 1837 and 1838, were papers on the amount of gluten in different kinds of wheat, on the influence of the clearing of forests on the diminution of the flow of rivers, on the meteorological influences affecting the culture of the vine, and on the principles underlying the value of a rotation of crops. In connexion with this last subject he brought out many new facts, which seem to have been of essential service to Liebig. In 1843, much attention was attracted by a work entitled "Économie Rurale," in which M. Boussingault embodied the results of many of his original investigations. A translation, under the title of "Rural Economy in its Relations with Chemistry, Physics, and Meteorology," was published in this country, and made the author's name widely known among English agriculturists. In a review of this translation in 1845 the *Agricultural Gazette* described the work as "the most important and valuable book for farmers which the chemists of the present century had produced—not so attractive as the clever paragraphs of Prof. Liebig, but much more than compensating for want of brilliancy by solid worth."

In an excellent biographical sketch of Boussingault, printed in the *Agricultural Gazette*, January 6, 1879, it is pointed out that, although his attention was by no means limited to subjects bearing on agriculture, by far the greater number of his researches had relation to the problems it suggests. "Thus," says the writer, "the amount and condition of the combined nitrogen in the atmosphere, in the aqueous depositions from it, in rivers and springs, and in the soil, have been investigated. The amounts of nitrogen, phosphoric acid, &c., in different manuring substances have been determined, and their comparative values estimated accordingly. The question of whether or not plants assimilate the free nitrogen of the air has again and again been taken up, the weight of the evidence always serving to confirm the conclusion that they do not. Very recently, too, he has made experiments in regard to some functions of the leaves of plants. Lastly, in the sphere of animal chemistry, he has from time to time devoted himself to the elucidation of important points, such as the sources in the food of the fat of the fattening animal, the assimilation of mineral constituents, the question whether any of the nitrogen of the food or of the animal is exhaled, and so on." Most of the results of his investigations relating to agricultural chemistry are given in his work "Agronomie, Chimie agricole, et Physiologie," published in seven volumes, the first of which appeared in 1860, the last in 1884.

M. Boussingault received many honours from foreign Governments and from scientific Societies both at home and abroad. In 1878, the Council of the Royal Society awarded the Copley Medal for his numerous and varied contributions to science, especially for those connected with agriculture.

In 1848, Boussingault was elected a member of the National Assembly, where he sat as a Moderate Republican, and for a short time he was a member of the Conseil d'État. In 1851 he was dismissed, on account of

his political opinions, from his position of Professor at the Conservatoire des Arts et Métiers; but this step caused so much discontent among scientific men, and was so vigorously resented by his colleagues, who threatened to resign in a body, that the Government had to reinstate him.

He died on May 11, 1887, in his eighty-sixth year.

#### NOTES.

THE "Ladies' Soirée" at the Royal Society held last night was carefully prepared and largely attended. We shall refer at length next week to some of the objects exhibited.

THOSE who have made the arrangements for the great national ceremony at Westminster Abbey in connexion with the Queen's Jubilee cannot, it would appear, be congratulated on the manner in which they have discharged one of the most important of their functions. On so striking an occasion all the highest interests of the nation ought to be adequately represented; yet some of the most vital of these interests have been practically ignored. "A Student" has alluded to the matter in a letter to the *Times*, and his remarks seem to be worthy of attention. Having referred to the eminent fitness of Westminster Abbey for a ceremony of this kind, he says:—"I imagined gathered together there all the men who by their deeds, their discoveries, their inventions, their writings, or their noble lives and ideas, have helped during the Queen's reign to make England what she is at the present moment, and I imagined, too, that the list of the names of those present might be a roll fit to be handed down to the remotest posterity as an authoritative statement of England's most illustrious citizens in the present year. Proud that the English Government had resolved to act upon such a noble idea, I have been endeavouring to express my enthusiasm and gratitude to many that I have met, with the result that I have found either that my view of the Government's intention was perfectly wrong or that it is being carried out in such a manner that the thing promises to be an expensive and unworthy farce. I have been informed by some who should know that among those who have already been invited hardly the name of any representative of literature, science, or art has been included."

THE Queen has intimated her intention of accepting the Albert Medal, which has been awarded to her by the Council of the Society of Arts. The Albert Medal is annually given for "distinguished merit in promoting arts, manufactures, or commerce."

ALL who remember the important aid rendered by Governor Sendall to the Government Eclipse Expedition to the West Indies last year will be glad to see by a recent *Gazette* that a C.M.G. has been conferred upon him. The same *Gazette* also included the name of Dr. Hector for the step of K.C.M.G. This is also another unexceptionable appointment. We are glad that the authorities at the Colonial Office are making such wise selections; the order of St. Michael and St. George bids fair to eclipse that of the Bath, the civilian distinctions connected with which seem more and more rarely to come in a scientific direction, and to be more and more limited to the spending rather than the thinking departments.

SOME important appointments have just been made at University College, London. Dr. William Ramsay, Principal of, and Professor of Chemistry in, University College, Bristol, has been appointed to fill the Chair of Chemistry, vacant by the resignation of Dr. Williamson; Dr. Sydney Ringer, F.R.S., has been made Holme Professor of Clinical Medicine, in succession

to the late Dr. Wilson Fox; and Mr. Victor Horsley, F.R.S., succeeds Dr. Bastian (resigned) as Professor of Pathology.

WE referred lately (p. 87) to a Bill introduced into the House of Commons by Sir Henry Roscoe, empowering any School Board, local authority, or managers of a public elementary school, to provide day technical and commercial schools and classes. Mr. James Stuart has introduced a corresponding measure for the establishment of evening schools and classes which shall give instruction in continuation of that obtained in public elementary schools. The subjects to be taught include the elements of such portions of science as may be likely to be useful to artisans and other persons engaged in industrial and agricultural occupations; also elementary mechanics, mechanical drawing, the elements of art and design, the use of ordinary tools, commercial arithmetic, and commercial geography. For providing these evening continuation schools the powers of School Boards or other local authorities are to be in all respects the same as for providing ordinary public elementary schools. Further, there is to be the power of providing or contributing to the maintenance of laboratories or workshops in endowed schools for the purpose of carrying on classes under the Bill. The schools and classes thus provided are to be subject to the inspection of the officers of the Committee of Council on Education or of the Science and Art Department, and no scholar is to be admitted to a school or class who has not passed an examination in the sixth standard. It is also proposed that School Boards or other local authorities shall have power to provide evening schools and classes, either in connexion with "evening continuation schools" or not, for the purpose of giving instruction in a particular group of subjects, among which are arithmetic, geography, elementary science, drawing, wood-carving, and modelling. The conditions as to these schools and classes do not differ from those as to the continuation schools, except that the standard to be passed previously to admission is the fourth, not the sixth. For any of the subjects taught in evening schools or classes under the Bill the Committee of Council on Education are empowered to give grants on such conditions as they may lay down.

WE learn that the Bentham Trustees have purchased for presentation to the Library of the Royal Gardens, Kew, the unique collection of portraits of *Bromeliaceae* which were accumulated during a life-long study of the order by the late Dr. Morren, Professor of Botany in the University of Liège. Some of the drawings, which are in all cases of life size, were exhibited at the recent reception of the Royal Society.

In an article printed in *NATURE* on January 13 (vol. xxxv. p. 248), Mr. D. Morris dealt with the important question of botanical federation in the West Indies. He again discusses this subject in the sixth Bulletin of Miscellaneous Information, just issued from the Royal Gardens, Kew. For the last hundred years the cultivation of the sugar-cane has been the only important industry in the West Indies, and the fall in the price of cane sugar has seriously affected the general condition of the population. It is estimated that one-half of the surface of these islands, with the exception of Antigua and Barbados, is better fitted for other cultivation than that of the sugar-cane. Fresh industries might therefore be safely started, and Mr. Morris is careful to point out that "by too close an adhesion to purely sugar-growing habits and methods the people act injuriously to their best interests and neglect the numerous resources at their command." It is, however, absolutely necessary that any new enterprises which may be undertaken shall be carried on by persons equipped with adequate knowledge; and no real progress can be made unless the people of the various islands provide themselves with small but good botanical establishments in connexion with the Botanical Department in Jamaica. Something has already been done in this direction. At Grenada a