

MR. BALFOUR ON FRANCIS BACON.

ON June 27, Mr. Balfour unveiled the statue of Francis Bacon, which has been erected in South Square, Gray's Inn, London. Before the actual ceremony of unveiling, a garden party was held in the gardens of Gray's Inn, at which art, science, law, literature, politics, and other professions were represented, among the guests being Sir William Crookes, O.M., Lord Rayleigh, O.M., Sir William Ramsay, and Sir Henry Roscoe.

The statue, which is the work of Mr. F. W. Pomeroy, A.R.A., is of bronze, and is erected on a pedestal of Portland stone.

In his discourse Mr. Balfour first dealt with Bacon as a politician, and afterwards went on to describe his private character and to comment upon his work as a writer, historian, and philosopher. We reprint from *The Times* the portion of the address in which Mr. Balfour regarded Bacon as a man of science.

What Bacon saw was the neglect of the scientific mind, engaged in verbal disputes, of the patient and childlike attitude of those who come to nature, not to impose upon nature their own ideas, but to learn from nature what it is that she has to teach us. Bacon is never tired of telling us that the kingdom of nature, like the Kingdom of God, can only be entered by those who approach it in the spirit of a child. And there, surely, he was right. There, surely, he really did much to correct the almost insolent futility of those philosophers who thought they could impose upon nature the hasty generalisations which they had picked up partly from their crude observations, partly from their own imaginations.

Many of his admirers speak as if his one claim to our gratitude was that if you examine nature impartially you will be always making useful discoveries. You can vulgarise his view of science and of discovery if you will, but you do great injustice to Bacon if you take that view. It is true that he always, as he said, looked on the estate of man with pity, and to improve the estate of man in succeeding generations was one of his great objects. As we are always talking of Social Reform, I presume that nobody will doubt that it was a great object. And surely that imagination which foresaw all that science could do for the estate of man was no imagination that crawled upon the ground, that could not look up to Heaven, could not see the magnificence of the prospect which was, as he believed, opening out to humanity.

On the contrary, I should like to ask those more competent than myself to decide the question how soon this prophecy of Bacon really began to be accomplished. Though dates cannot be fixed, I believe it will be found that it is relatively recently, say within the last three or four generations, that industry has really been the child of scientific discovery. Great scientific discoveries were made by Bacon's contemporaries, by his immediate successors, in every generation which has followed, but the application of scientific principles to the augmentation of man's power over nature is, I believe, relatively speaking, of quite recent growth. You may find examples here and there, but, broadly speaking, I would ask anybody to cast his eye over the history of discovery in such arts as those of medicine, in the general progress of industrial and agricultural discovery, and I believe he will come to the conclusion forced upon my mind, which is that the effect which science has had, and is now having, and in increasing measure is predestined to

have, upon the course of this world, did not declare itself in unmistakable letters until a century and a half or two centuries had passed since the death of the great man whose name is associated with the philosophy of induction.

You may say to me, "Well, all this is very fine, this prospect of Bacon looking over the Promised Land from Pisgah, but not entering therein (to quote the famous phrase of Cowley's), but what has Bacon done for science?" I say that he did all that a great philosopher and a great writer as distinguished from an investigator can do. He created the atmosphere in which scientific discovery flourishes. If you look at the great men of science who were his contemporaries; if you look at the estimate in which science was held, the fears of orthodoxy, the indifference of statesmen, the contempt of the multitude, you will see that no greater work can be done for science than to see this is one of the greatest tasks that lie before humanity; and if humanity will only set itself to work in the true spirit to deal with that subject they cannot fail to reap a harvest worthy, and more than worthy, of their efforts.

FLORIS OSMOND.

THE death of Floris Osmond at the little village of St. Leu about ten days ago ends the career of a very remarkable man, whose investigations and theories have furnished a solid foundation for our present knowledge of the structure and constitution of steel. The respectful sympathy of scientific metallurgists all the world over will go out to their French colleagues, particularly since Osmond died at the comparatively early age of sixty-three, when they might have hoped to profit for some time to come from the suggestions and inspirations of one who was an acknowledged leader in his field of work.

Osmond began his metallurgical career in the great works of Denain and Anzin at the time when the manufacture of steel was being introduced; a little later he went to Le Creusot, where he met M. Werth, and finally he retired from the metallurgical industry, and devoted himself to scientific investigations in Paris in 1884. Some four or five years ago, following upon the death of his brilliant young collaborator Cartaud, and as a result of increasing deafness, Osmond retired from active work, and took up a quiet rural life at St. Leu, merely remaining in touch with his scientific friends and their work by the medium of an active correspondence. As a result of this voluntary isolation, Osmond was practically alone when he died, and the funeral of a man whose name is honoured wherever scientific metallurgy is known was attended only by the villagers who were his neighbours and six scientific friends from Paris.

Osmond took up the microscopic study of metals seven years after Martens and twenty-one years after Sorby, yet to him is due the great impulse from which the modern science of metallography in its widest sense has sprung. Osmond's most striking work was the discovery of the upper critical points of carbon steel and their explanation by that brilliant "allotropic theory" around which controversy has raged so long. This theory in its

original form may ultimately prove to be inadequate, but so far it stands alone as affording any reasonably satisfactory explanation of the varied phenomena of steel. Its importance was recognised by the award to Osmond in 1897 of the Lavoisier medal of the Société d'Encouragement, and of the Bessemer medal of the Iron and Steel Institute in 1906.

More recently Osmond devoted himself to the study of the crystallography of iron in its various allotropic modifications, and to a study of the modes of plastic deformation of iron and steel. It was in this connection that the writer first came into personal contact with Osmond; divergent views led to a prolonged correspondence, at first of a controversial kind, but the controversy led not only to new experimental work on both sides, but resulted in producing substantial agreement and in building up a personal friendship. Osmond's unflinching courtesy and charm of manner and expression were typical of the man, while his fruitful mind filled all his utterances with thoughtful suggestions.

Osmond was one of the pioneer workers—perhaps the pioneer worker—of steel metallography; his work is naturally bounded by the limitations which hedge all the earliest workers in any new field of research, but however much the widening scope of the science may lead us away from some of Osmond's views, yet his fundamental work will always remain as a splendid monument—one of the foundation stones upon which the systematic scientific control of the great steel industry is being surely, if slowly, erected. It may be hoped that his French colleagues will give that monument a fitting shape by republishing in convenient form those numerous memoirs—more than eighty in number—which he contributed to the subjects with which his name will always be identified.

WALTER ROSENHAIN.

NOTES.

AT a meeting of the Lawes Agricultural Trust Committee held on June 25, Dr. E. J. Russell, at present Goldsmiths' Company's assistant for soil investigations, was appointed director of the Rothamsted Experimental Station in succession to Mr. A. D. Hall, F.R.S.

AT the extra meeting of the Chemical Society held on June 26, the president announced that the session for 1912-13 would open with a memorial lecture in honour of Antoine Henri Becquerel, late honorary and foreign member of the society, to be delivered by Sir Oliver Lodge, F.R.S., on October 17, and that further particulars would be given later.

AN extra meeting of the Chemical Society was held at Burlington House on June 26, Prof. Percy F. Frankland, F.R.S., president, in the chair, when Sir William Tilden, F.R.S., delivered a memorial lecture in honour of Prof. Stanislao Cannizzaro, late honorary and foreign member of the society. A brief account of the early life and education of Cannizzaro was given, and reference made to the part played by him

in the political agitations of 1847 and 1860. In 1861 he was appointed to the chair of chemistry at Palermo University, and ten years later he was made professor of chemistry at the University in Rome, a position he held up to the time of his death on May 10, 1910. Sir William Tilden gave a sketch of the position in which science and education were held in Italy up to 1860, and dwelt at some length on Cannizzaro's valuable contributions to chemical knowledge; to the great part played by him as a teacher, and to the important public office held by him in the advancement of science and education. Sir William Ramsay, who proposed a vote of thanks, and Sir Edward Thorpe, in seconding it, gave personal reminiscences of Cannizzaro, as well as referring to his high scientific attainments.

AT the annual general meeting of the British Academy, held in the rooms of the Royal Society on July 1, Dr. A. W. Ward (master of Peterhouse, Cambridge) was re-elected president, and Sir W. R. Anson, M.P., Mr. A. C. Bradley, Mr. D. G. Hogarth, Lord Justice Kennedy, and Prof. C. W. C. Oman were appointed members of council.

AT the general meeting of the Faraday Society held on July 2, the following officers were elected:—*President*, Dr. R. T. Glazebrook, F.R.S.; *Vice-Presidents*, Dr. G. T. Beilby, F.R.S., Prof. K. Birkeland, Sir Robert Hadfield, F.R.S., Mr. F. W. Harbord, Prof. Bertram Hopkinson, F.R.S., Mr. Alexander Siemens, and Prof. James Walker, F.R.S.; *Treasurer*, Dr. F. Mollwo Perkin.

THE following have been elected as officers of the Royal Society of Medicine for the session 1912-13:—*President*, Sir Francis H. Champneys, Bart.; *Honorary Treasurers*, Sir William S. Church, Bart., K.C.B., and Sir Henry Morris, Bart.; *Honorary Librarians*, Sir Rickman J. Godlee, Bart., and Dr. Norman Moore; *Honorary Secretaries*, Mr. H. S. Pendlebury and Dr. E. F. Buzzard.

THE autumn meeting of the Iron and Steel Institute is to be held at Leeds on September 30—October 4. On October 1 the members will be welcomed by the Lord Mayor of Leeds, and a selection of papers read and discussed. Similarly, the mornings of the two following days will be devoted to the reading and discussion of papers. Several receptions and numerous excursions have been arranged.

THE Geologists' Association has arranged for the beginning of August next an excursion to West Mayo and the Sligo district. The excursion, which will be conducted by Prof. G. A. J. Cole and Mr. W. B. Wright, is planned to give a general view of the structure of central Ireland, and, in addition, to provide the opportunity for observations round Sligo. Those taking part in the excursion meet at Broadstone Station, Dublin, on July 31, and an itinerary has been arranged lasting until August 9.

THE Linnean Society has issued an appeal to its fellows and their friends for contributions towards the cost of production of a "Nomenclator animalium generum et subgenerum," in course of preparation