

APPENDIX TO VOL. XXVII.

MEMOIRS.

DR. MICHAEL FARADAY was born at Newington, in Surrey, on the 22nd of September, 1791. His father, a Yorkshire blacksmith, was not rich enough to afford his son a better education than could be obtained at a common day-school in the neighbourhood; but he acquired, from such books as fell in his way, so much information of a general character as deeply interested him, and induced a fondness for reading, at the same time that it quickened those habits of careful observation which were natural to his disposition. When thirteen years of age, he was apprenticed to Mr. Riebau, of Blandford-street, a bookseller and binder. About this time, in the intervals of business, he made an electrical jar out of a physibottle, and then a complete electrical-machine with a proper cylinder, which remained long afterwards the useful companion and assistant of the famous philosopher. Towards the close of the year 1812, Mr. Dance, a Member of the Royal Institution who frequented Mr. Riebau's shop, gave him tickets to the last four of a course of lectures on chemistry which Sir Humphry Davy was delivering in Albemarle Street. He took notes, and afterwards wrote them out more fairly in a quarto volume. His desire to escape from trade, which he thought vicious and selfish, and to enter into the service of science, which he imagined made its pursuers amiable and liberal, induced him at last to write to Sir Humphry Davy, expressing his wishes, and a hope that, if an opportunity offered, his views might be favourably entertained; at the same time he sent the notes taken at the lectures previously referred to. Sir Humphry Davy requested to see him, and early in March, 1813, procured him the situation of chemical assistant in the laboratory of the Royal Institution. In October of the same year he accompanied Sir Humphry Davy to France, Italy, Switzerland, &c., as amanuensis and assistant in chemical experiments, and resumed his situation in the Royal Institution when he returned to England in April, 1815. In 1820 he published his discovery of the chloride of carbon; and in October of the same year he commenced his investigations on the relation of electricity and magnetism, the discovery of which had been announced by Ørsted. In the following year he published his discovery of "New Electro-Magnetic Motions," to which he added "A Theory of Magnetism,"

in the "Quarterly Journal of Science." In 1823 the condensation of chlorine into a liquid was first effected by him, and an account of his experiments was published in the "Philosophical Transactions," with a note by Davy "On the Condensation of Muriatic Gas into the Liquid Form." This year he was elected Corresponding Member of the Academy of Sciences of Paris. On the 8th of January, 1824, he was elected a Fellow of the Royal Society, mainly through the instrumentality of the late Richard Phillips, the chemist; and in 1829 he was appointed by the Royal Society to deliver the Bakerian Lecture, the subject being "On the Manufacture of Glass for Optical Purposes." In the same year he was appointed Chemical Lecturer at the Royal Military Academy at Woolwich, a post he held till 1842. In 1831 his first paper on the subject of electricity appeared in the "Philosophical Transactions," describing his experimental studies of the science; and from that time for many years the "Philosophical Transactions" annually contained papers by him, giving the method and result of his investigations. These papers, with some others contributed to scientific journals on the same subject, were subsequently collected at different intervals in three volumes under the title of "Experimental Researches in Electricity." The first volume appeared in 1839, and contained the contributions to the "Philosophical Transactions" up to that date—in all, fourteen series. The second volume was published in 1844, and the third in 1855. These researches in electricity are, beyond all doubt, the choicest series of examples of pure induction to be found in the English language. He established the identity of the forces manifested in the phenomena known as electrical, galvanic, and magnetic; he ascertained with exactness the laws of magnetic action; and he determined its correlation with the other primal forces of the natural world. The high character of these researches led the University of Oxford, in 1832, on the first occasion of the meeting of the British Association at the University, to confer on him the honorary degree of Doctor of Civil Law. Meanwhile the chair of chemistry in the Royal Institution was founded in 1833 by Mr. Fuller, and at his express desire Dr. Faraday was nominated the first Fullerman Professor. In 1835 Lord Melbourne's government recognised the importance of his scientific discoveries by granting him a pension of £300 per annum, and in the following year he was appointed scientific adviser on lights to the Trinity House, and subsequently to the Board of Trade. From this time many honours were conferred upon him. He was raised from the position of Corresponding Member to be one of the eight Foreign Associates of the Academy of Sciences of Paris. The Royal Society conferred on him, in 1846, its own medal and the Rumford medal for his discovery of diamagnetism and the influence of magnetism upon light.

He was a Commander of the Legion of Honour, a Knight of the Prussian Order of Merit, of the Italian Order of St. Maurice and Lazarus, and a member of numerous scientific bodies on the continents of Europe and America. He was elected an Honorary Member of the Institution of Civil Engineers on the 26th of June, 1838. As a lecturer on science, Dr. Faraday was without an equal. At the table in the theatre of the Royal Institution, with his beautifully-devised apparatus around him, he was perfectly at home and at ease. The first words which fell from his lips conveyed to all an impression of thorough earnestness, an intense desire to know, and to impart the knowledge he had acquired. His language was always simple. He sought to reach the mind of every hearer through more senses than one. He never told his listeners of an experiment, he always showed it to them, however simple and well-known. No man was ever more entirely unselfish, or more entirely beloved. Modest, truthful, candid, he had the true spirit of a philosopher and a Christian. In 1858 the Queen allotted him a residence at Hampton Court, between which and Albemarle Street he spent the last years of his life, and there he died on the 25th of August, 1867.

THE RIGHT HONOURABLE WILLIAM PARSONS, third EARL OF ROSSE, was born at York, on the 17th of June, 1800. The elementary part of his education was acquired under his father's roof; and in the year 1818 he entered Trinity College, Dublin. After a successful course of study he, in the following year, migrated to Magdalen College, Oxford, where he took his degree of B.A. in 1822, obtaining a first class in mathematical honours. As Lord Oxmantown he represented King's County in the House of Commons from 1821 till the end of the first reformed Parliament; and although he seldom took part in the debates, he proved an excellent man of business on Committees. From this time he devoted himself more closely to philosophical pursuits.

Besides his acquirements as an astronomer and a mechanic, he was a political economist of a high order, and devoted much attention to the question of national education. He was a good chemist, and possessed a large amount of military, nautical, and engineering knowledge. As evidence of this it may be mentioned that he had formed the conception of armoured ships some years before the Crimean war, and had shown that vessels of no great tonnage could carry a sheathing of 4-inch plates, which would be proof against the 32-pounder, the normal gun of the time.

But it was as a constructor of reflecting telescopes¹ that Lord

¹ The description of these improvements has been principally taken from the "Proceedings of the Royal Society," vol. xvi., p. xxxviii.