

### Faraday's London Friends.

By H. G. WAYLING.

**F**ARADAY was essentially a Londoner. Although he was born on the south side of the Thames, he spent the greater part of his life in the northern districts between Regent's Park and Oxford Street, or at the Royal Institution in Albemarle Street, Piccadilly. From the following addresses of some of his scientific acquaintances the metropolis of his day becomes alive again. To visit all these highways and byways on foot would certainly be a tiring tramp. Failing, however, the use of a motor car, all the thoroughfares may be found on any good map of London.

One of the founders of the Royal Institution was Sir Joseph Banks, who lived at No. 32 Soho Square, a little west of Charing Cross Road. He died in 1820, so that Faraday would only know him as a gouty old autocrat. At the same house resided Dr. Robert Brown, amanuensis and librarian to Sir Joseph. Brown became one of the leading botanists in Europe, and sealed his claim to scientific recognition by the discovery of the Brownian movement, a topic which Faraday selected for one of his popular lectures at the Royal Institution. South of Regent's Park and parallel to Portland Place is Charlotte Street, where William Nicholson died. In conjunction with Sir Anthony Carlisle, who dwelt not more than a stone's throw away at No. 6 Langham Place, he effected the decomposition of water electrolytically. As the experiment was carried out at the Royal Institution in 1800, Faraday would know these co-workers, when in a few years later he became interested in the study of natural philosophy.

Still farther west and south of Regent's Park is Baker Street, a name well known to readers of Sherlock Holmes. Crossing it at right angles is Dorset Street, where, at No. 1, lived William Hyde Wollaston and, after him, Charles Babbage. The former, who was the interim president of the Royal Society, after the death of Sir Joseph Banks, was of the opinion that a wire carrying an electric current has a tendency to rotate on its axis; but Faraday, who watched Wollaston's unsuccessful attempts to achieve this feat, succeeded in making a similar wire revolve round the pole of a magnet. When Babbage became the tenant of the house in Dorset Street, he entertained extensively. John Dalton stayed here when he came from Manchester to lecture at the Royal Institution, where Faraday at the rehearsal of these discourses acted as audience and critic all in one. Among other guests of the inventor of the calculating machine was Sir David Brewster, who occasionally left the capital of the north to visit that of the south. Branching off Baker Street is Blandford Street, where Faraday worked as a bookbinder's apprentice.

Not far from here and in a south-easterly direction is Cavendish Square, connected to Oxford Street by a short thoroughfare called Holles Street. In this byway lived Davies Gilbert, a close friend of Davy and his successor to the presidency of the

Royal Society. As practically every prominent member of that distinguished society would at one time or another pass through the doors of the Royal Institution, then their research laboratory, Faraday would experience the force of the saying, "the friends of thy friends are my friends." As chairman of the Royal Institution for a recognised period, Charles Hatchett would be another of Faraday's acquaintances. Hatchett was a mineralogist of some distinction, and incidentally, the father-in-law of W. T. Brande, who succeeded Davy as professor of chemistry at the institute in Albemarle Street. Hatchett lived in his later years in Lindsey Row, Chelsea; a terrace of big houses facing the river. Brande was born in Arlington Street, a southern tributary of Piccadilly.

Mrs. Marcet, whose "Conversations on Chemistry" whetted the youthful appetite of Faraday for experimental science, lived in Great Coram Street, Russell Square. Her tea parties were well patronised by several fellows of the Royal Society. Berzelius tasted her hospitality and Maria Edgeworth at times assisted her in these social amenities. Among Faraday's friends were many Quakers. William Allen, who resided in Plough Court, Lombard Street, was one of them. The firm of Allenbury is still in possession of the premises. Allen lectured before the Royal Society, and like most adherents of his particular faith, was earnest in all good works. Another, whose name is among the most notable who have lectured at the Royal Institution, was Thomas Young. Although a member of the Society of Friends, he modified his tenets and comportment with the changing times. This remarkable genius dwelt at No. 48 Welbeck Street, parallel to Harley Street, as befitted a physician of his social status. Then there were William and Richard Phillips, the sons of a publisher in George Yard, Lombard Street. They were fellows of the Royal Society and also prominent members of the Geological Society. It was Richard Phillips who induced Faraday to undertake public analytical work to augment his slender income.

William Haselden Pepys was another Quaker. He kept an instrument-maker's shop in the Poultry, also not far from Lombard Street, being, like many other of his co-religionists, within easy access of the Friends' meeting house in Gracechurch Street. When young Faraday wrote to Davy requesting that a situation might be found for him in the Albemarle Street laboratory, Sir Humphry showed the letter to Pepys and asked for his advice. "Set him to wash bottles" was the reply; a suggestion that Davy did not think worth accepting. Davy lived at No. 26 Park Street, Grosvenor Square, that is, in Mayfair, where his aristocratic wife entertained in great style. A more modest acquaintance of the subject of our theme was Peter Mark Roget, whose electrical jumping spiral may still be seen in the Science Museum at South Kensington. He lived at No. 18 Upper Bedford Place, just north

of Russell Square, Bloomsbury. As secretary of the Royal Society, Roget had intermittent correspondence with Faraday—in particular, that on the manufacture of optical glass.

The mention of this topic reminds us that we might cross the river for a change, passing over London Bridge and proceeding down the Borough High Street. Along this route we enter Newington Causeway, once called Blackman Street. Here Sir James South had an observatory and laboratory. With the assistance of Sir John Herschel, he undertook the manufacture of various kinds of glass; and it was a modified form of this experimental ware, containing lead borate, that Faraday employed in his investigations on the relationship between magnetism and polarised light. Mr. Rollo Appleyard, in his recent biography, tells us that Sergeant Anderson, who acted as general factotum to Michael Faraday at the Royal Institution, served his apprenticeship in Sir James South's laboratory in Blackman Street. A short distance ahead is Newington Butts, where the great natural philosopher himself was born.

Returning to the neighbourhood of Oxford Street, where so many of his admirers lived, we pay a call to Hanover Square, which is on the other side of the road to Cavendish Square. At No. 12 resided Mrs. Mary Somerville, a frequent visitor to the Royal Institution. As there is a memorial plaque on its walls, the building can be easily identified. Mrs. Somerville relates that Wollaston, one day, in his usual quiet mysterious way, closed the shutters of her drawing-room; then holding a glass prism in the path of a beam of light that came in through a chink, exhibited to her the dark lines of the solar spectrum. Sir Charles Lyell met his future wife at one of Mrs. Somerville's dinner parties, and when he set up housekeeping he lived for many years at 53 Harley Street, only a few steps away. Lyell accompanied Faraday to investigate the cause of a

terrible explosion that occurred at Haswell Colliery, Durham. During his local inquiries Faraday was shocked to find that the foreman of the mine demonstrated some of the tragic details with a lighted candle in his hand, having thoughtlessly given the professor himself a sack of gunpowder on which to sit and watch the demonstrations.

Among the familiar portraits of Faraday is one in which he appears in company with J. F. Daniell, whose name still persists in a well-known voltaic cell. Daniell was born in Essex Street, Strand. He lectured at the London Institution, Finsbury Circus, a rival academy to that off Piccadilly.

Dr. J. A. Paris, the biographer of Davy, was also well acquainted with Faraday. On one occasion when Paris paid a visit to Faraday's laboratory, he criticised adversely the apparently filthy appearance of some of the glass tubes. The next morning a short note was left at the doctor's house, No. 27 Dover Street, containing this laconic statement: "the 'oil' you noticed yesterday, turns out to be liquid Chlorine".

Part of his time Faraday lectured at Woolwich Academy. Here he co-operated with S. H. Christie, a Londoner—born at No. 90 Pall Mall; with Peter Barlow, whose familiar wheel is a type of electric motor; with the chemist Marsh, on whose test for arsenic all analysts rely; and with William Sturgeon, who was the first to use soft iron in the construction of electromagnets. Faraday's first biographer, Dr. Bence Jones, lived in Brook Street, Grosvenor Square. Being the secretary of the Royal Institution, Jones would have exceptional opportunities of knowing his subject both in private and public life. Another of his biographers and close friend was Dr. J. H. Gladstone. He was by marriage related to Lord Kelvin, who accepted his relative's hospitality at No. 17 Pembridge Square, Notting Hill, whenever he could be induced to leave his professorial duties in Glasgow.

### The British Association Centenary Meeting.

THE centenary meeting of the British Association will be formally opened on Wednesday next, in the Albert Hall, at 3 P.M., when the Right Hon. J. C. Smuts will assume the presidency in succession to Prof. F. O. Bower, and will receive the invited delegates of societies and institutions, and of universities, colleges, and cities in which the Association has held meetings in the past. On the second day, in the Central Hall, Westminster, at 9 P.M., General Smuts will deliver his presidential address on the subject of "The Scientific World-Picture of To-day".

General Smuts will ask, in his address, what the effect of the recent scientific advances is on our conception of the world. On one hand, we have the ordinary common-sense view of the world, which is based on practical experience and tradition but does no longer square with the principles of science. On the other, we have the scientific world-view of the last century, which left the common-sense nature of the material world essentially unaffected, but

could find no proper place for the factors of life and mind, and which thus reduced the world to the picture of a fixed deterministic mechanism. Both common sense and mechanistic science are profoundly affected by the new physical concepts, especially those of space-time and the quantum and their consequences. Matter, in the old sense, is completely transformed, and immaterial electrons and radiations take its place as the substance of the world. Our whole view of the nature of the material world seems to be upset and revolutionised.

Building on these great discoveries, a new world-view has recently arisen which yet, like the older science, emphasises almost exclusively the physical measurable aspects of the world. The world is constructed into a system of mathematical symbols. Matter, in the old sense, having disappeared, the world is made out to be a highly abstract intellectualised shadow world. On this view, however, a world emerges which cannot in any sense