

chester, in 1860 as professor of natural philosophy, and was appointed professor of experimental philosophy in the University of Oxford in 1865, which appointment he held until 1915.

The position of physics in 1865 was very different from what it is at the present time; there was then no such thing as a physical laboratory actually built for the purpose. Clifton's first work was the building of the Clarendon Laboratory, which was completed in 1872. The architect, no doubt, was responsible for most of the exterior, but the interior fittings down to the minutest details were practically carried out from Clifton's own working drawings. The necessary funds came from the trustees of Edward, second Earl of Clarendon, an alternative competitor for these funds being a riding-school.

The laboratory having been built, it had to be equipped with apparatus, which was a labour of love to Clifton, who was a born instrument-maker. Much of the apparatus is of his own designing, with the result sometimes that when an instrument had been brought to perfection it had become too sacred to be entrusted to the common herd.

Clifton was an excellent and inspiring lecturer, and spent an enormous amount of time in designing and fitting up apparatus for lecture purposes, so that his lectures were often more of the nature of laboratory demonstrations; time, however, was no consideration; no student could hope to get through even one subject during his academical life. He devoted himself to his pupils, both in Oxford and afterwards in obtaining posts for them. Besides lecturing, he took a large share in the laboratory instruction. This consisted almost entirely of repetitions of known experiments carried out with as much accuracy as possible. Research in the modern sense was not welcomed with open arms; the apparatus was too jealously guarded; but every student received a sound grounding in accurate experimental work, which no doubt bore good fruit later in many cases.

Clifton served on the council of the Royal Society for several years, was president of the Physical Society from 1882-84, was on the Royal Commission on Accidents in Mines from 1879-86, and at the same time had an estate in Lincolnshire to look after. All this, combined with his teaching, kept him constantly engaged, as he worked very thoroughly and deliberately at anything he took up, so that he had very little time left for original work; his published papers, in fact, are very few.

Clifton's method of private work was peculiar; he was popularly supposed to begin about midnight, and to go to bed with the "hooter," the Great Western Railway whistle which is sounded at Oxford at 5.30 a.m.; as he never took any exercise, it was a mystery how he managed to maintain his general fitness.

Clifton married in 1862 Miss Catharine Elizabeth Butler, and during her lifetime kept a most hospitable house. Every Sunday he had some of his

students to lunch, having previously furnished them with a sketch of the route to his house. He was a most lovable man, who had the affection of all his pupils, and was a welcome addition to any company.

PROF. W. ODLING, F.R.S.

ON February 17 the death occurred at Oxford of the former Waynflete professor of chemistry, in his ninety-second year. For many years the name of Prof. Odling has been almost unknown to students of chemistry, except to those who have become acquainted with something of the history of their subject during the last century. But it deserves to be held in respectful remembrance both by students of chemistry and by the large body of professional chemists now practising in this country, though probably only a contemporary could appreciate at their full value Odling's services to science on one hand, and on the other the position of influence in relation to applications of chemistry which he held fifty years ago.

William Odling was born in Southwark in 1829, the son of a surgeon. After leaving school he studied medicine at Guy's Hospital Medical School, and graduated M.B. Lond. with honours in physiology and comparative anatomy in 1851. Before this time, in 1848, he had shown his bent in the direction of chemistry by becoming a fellow of the Chemical Society, then in the early days of its existence. He never practised medicine, but proceeded to Paris in 1851, where he placed himself under the famous Alsatian chemist Gerhardt, and so received some impress from his teacher which doubtless influenced his attitude later as an exponent of chemical theory. In 1856 he became one of the hon. secretaries of the Chemical Society, being associated during the first nine years with the late Prof. Redwood, and during the last four with the late Mr. A. G. Vernon-Harcourt. In the years 1860 to 1872 Odling gave great assistance to the English chemists of his time by his masterly discourses at the Chemical Society on subjects such as the fixation of atomic weights, valency, and classification, then matters of frequently hot debate.

From 1868 to 1872 Odling held the Fullerman professorship at the Royal Institution, previously held by Faraday, and in 1872 he moved to Oxford, having been appointed Waynflete professor of chemistry in succession to Sir Benjamin Brodie. His appointment he retained for forty years until he retired in 1912. Oxford at the time of his appointment was still too much under the conservative influences which had for so long retarded the progress of science in the University, and, like the other scientific departments, chemistry had to struggle during many years.

In 1877 the Institute of Chemistry had its origin in a voluntary association of chemists united in the desire for the organisation of the profession and for improvement in the education and qualifications of those who intended to practise

as consultants. Sir Edward Frankland was the first president, and he was followed by Sir Frederick Abel; but it was during Odling's occupancy of the chair, and largely owing to his influence, that the charter was granted in 1885. Although it is vain to look in the Royal Society Catalogue of Scientific Papers for outstanding discoveries the result of experimental work under Odling's name, it should not be forgotten that he contributed several very important articles on theoretical subjects to Watts's "Dictionary," and among them one on atomic weights, in which he came very near the discovery of the periodic law now always associated with the name of Mendeléeff.

In 1872 Odling married the only daughter of Alfred Smee, F.R.S., inventor of "Smee's battery," and formerly surgeon to the Bank of England, and by her he left three sons. Mrs. Odling died about four years ago, and this loss seems to have affected her husband seriously; however, when visited in January only a few weeks before his death his mental activity seemed undiminished, and he was ready to talk of old times.

W. A. T.

THE death of MR. C. GROVER, of Rousdon, Devonshire, on February 16, removes from the list of variable star observers a notable figure. There are now thirty-five years' observations made with the same instrument (a 6.4-in. refractor by Merz and Cooke, with low-power eye-piece of 25 by Steinheil) by the same observer on the same plan, and with remarkable regularity and

continuity. The first half of these observations were collected and discussed in vol. lv. of the R.A.S. Memoirs, but an equal contribution can now be added with a natural termination. This work was planned by the late Sir Cuthbert Peek, who took a personal share in its inception. Since Sir Cuthbert's death in 1900 it has been continued by his son, Sir Wilfred Peek. Mr. Grover would have been seventy-nine on March 7, and continued at his regular work until the very day preceding his death. There can seldom have been a more single-minded piece of astronomical work.

THE death of MR. JOHN CLARKE HAWKSHAW on February 12 is recorded in *Engineering* for February 18. Mr. Hawkshaw, who was eighty years of age at the time of his death, was the son of the late Sir John Hawkshaw, whose name is associated with so many important engineering works. Mr. Hawkshaw was associated with the construction of the Albert Dock, Hull, the Severn Tunnel, etc., and assisted his father in investigations with the Channel Tunnel and many other schemes. He was elected a member of the Institution of Civil Engineers in 1867, became member of council in 1889, and held the office of president in 1902-3.

It is announced in *Science* for February 4 that MARY WATSON WHITNEY, emeritus professor of astronomy, and from 1889 to 1910 director of the observatory of Vassar College, New York State, died on January 20, aged seventy-three years.

Notes.

THE following fifteen candidates have been selected by the council of the Royal Society to be recommended for election into the society:—Dr. W. E. Agar, Dr. F. W. Aston, Prof. W. L. Bragg, Dr. W. T. Calman, Dr. A. H. Church, Prof. G. Dreyer, Prof. W. H. Eccles, Dr. J. C. G. Ledingham, Mr. C. S. Middlemiss, Prof. K. J. P. Orton, Dr. J. H. Parsons, Prof. J. C. Philip, Dr. A. A. Robb, Sir E. Tennyson D'Eyncourt, and Mr. G. Udry Yule.

THE Royal Society administers two funds, the Gore Fund and the Trevelyan Fund, which have been bequeathed to the society for the promotion of scientific research. There is a balance in hand of about 200l., and the president and council would be glad to consider applications for the whole or part of this balance. Applications should be sent to the Secretaries of the Royal Society, Burlington House, London, W.1, before April 15, stating the sum asked for and the way in which it is proposed to spend it, and enclosing any references or other documents the applicant may think fit.

THE combined meeting of organising committees of the Sections of the British Association, held at Burlington House on Friday last, February 25, was so helpful in many respects that it might very well

become an annual event. The meeting was called to consider various suggestions as to the number and grouping of Sections, presidential addresses, and other subjects discussed in the recent correspondence in *NATURE* and elsewhere, and also to facilitate the arrangement of joint programmes between two or more Sections for the annual assembly at Edinburgh in September next. At the general session it was agreed that the number of Sections should not be reduced, but that voluntary grouping for the consideration of subjects of common interest was desirable. The council (through the general officers) was empowered to fix hours of addresses and discussions, and the view was approved that the oral delivery of presidential addresses should be optional, as well as that the addresses themselves might be used to open discussions. It was also decided that the council should invite the recorders of Sections, or their nominees, to be present at meetings of council when presidents of Sections are elected. Organising committees will thus, through their representatives, be able to put forward their views as to new sectional presidents. Several important joint discussions were arranged for the forthcoming meeting, among them being one between the Sections of Physics and Chemistry on Langmuir's theory of the atom, and another between the Sections of Economics, Education, and