

OBITUARY NOTICES.

LEONARD ARCHBUTT.

1858—1935.

LEONARD ARCHBUTT, F.I.C., was born on April 2nd, 1858, at Ovington Square, London, and was the son of Samuel Archbutt, a solicitor. Educated at private schools and University College, he was articled to the late A. H. Allen of Sheffield, and later became his chief assistant. Entering the service of the Midland Railway in 1881, he remained as Chief Chemist till he retired in 1923, the latter portion of his service being with the L.M.S. after the amalgamation of the railways. His death took place suddenly on April 28th, 1935.

Archbutt has been fittingly described as the greatest of railway chemists. He was life member of the Chemical Society, the Institute of Chemistry, the Society of Public Analysts, and the Society of Chemical Industry. Of the last-named, he was an original member, served on the Council and Committees, and was twice chairman of the Nottingham section. In the *Journal* of that Society he published eleven papers, chiefly on oils, fats, and grease, but including the determination of sulphur in steel and of minute quantities of arsenic in coke. He was President of the Society of Public Analysts, 1912—13, being the first chemist other than a public analyst to occupy that position. He contributed many papers and notes to the *Analyst* between 1884 and 1913, among them being contributions on "Estimation of Oxygen in Copper" and on water-testing.

An original member of the Institute of Metals, Archbutt served on the Council from 1911 till 1924, and frequently contributed to the discussions. Two of his papers on "The Influence of Certain Elements on the Forging Properties of Copper at a Red Heat" (*J. Inst. Mets.*, 1912, 7, 262) and on "A Curious Change in the Microstructure of White Metal produced by Traces of Zinc" (*ibid.*, p. 266) anticipated work which has since been published elsewhere. He served on the Corrosion Committee from 1911 to 1924. Important pioneer work on the failure of lead sheathing of electric cables was also published by the Faraday Society (*Trans.*, 1921, 17, 22).

Archbutt was active at the Railway Clearing House, and was a member of the Goods Managers Committee on Explosives and other dangerous goods from 1893 till his retirement in 1923. He was elected Chairman of the Committee of Chemists and served from 1894 till 1905, also in 1913, and from 1920 to 1923, a total of sixteen years. For services on the Standing Committee, respecting conveyance of explosives, for H.M. Government during the war, he was awarded the O.B.E., but declined the honour on the grounds that he had done no more than his duty.

Reference has already been made to Archbutt's interest in oils and greases, and to water treatment. He was joint author of a standard treatise on "Lubrication and Lubricants," published in 1899 (Griffin and Co.), now in its fifth edition, and joint inventor of the Archbutt-Deeley water-softening process which has been largely used. He was also joint author of a paper on "The Thermo-dynamics of the Automatic Vacuum Brake" (*Engineer*, 1890, 69, 509; 70, 21). He was interested in local technical education, serving on the Derby Education Committee and as Chairman of the Derby Society of Engineers. He lived to enjoy some years of retirement after a long and active career. At the time of his retirement the chemical laboratory at Derby was probably the best equipped railway laboratory in this country, if not in the world.

A man of modest and retiring disposition, Archbutt inspired confidence and friendship in those with whom he was associated. His advice was often sought and freely given, and his skill, industry, and character did much to raise the status of railway chemists. Many will deplore the passing of an old friend and valued colleague.

THOMAS TURNER.

JAMES MUNSIE BELL.

1880—1934.

PROFESSOR JAMES MUNSIE BELL, Dean of the School of Applied Science, University of North Carolina, U.S.A., who died on March 3rd, 1934, was born in Chesley, Ontario, Canada, on April 19th, 1880. At the University of Toronto from 1898—1903, he successfully carried at the same time honour courses in Chemistry, Physics, and Mathematics, and was awarded the degrees of B.A. and M.A. At Cornell University he held the Sage Fellowship in Chemistry and obtained the degree of Ph.D. For the next five years he worked at the U.S. Department of Agriculture on physicochemical problems in the genesis of soils, reclamation of alkali soils, and fertiliser, the results of these researches being recorded in a number of governmental publications and journal articles.

Coming to the University of North Carolina in 1910, Bell became Head of the Department of Chemistry in 1921, although during the war he served overseas in the Chemical Warfare Service of the United States. He was again in England and Germany in 1926—1927, as Kenan Travelling Professor. His published investigations relate to heat capacities and other properties of the nitrotoluenes, to concentration cells, free energy, copper salts, and other problems. He is more widely remembered perhaps by his work on the compounds of zirconium, part of which was done in collaboration with Dr. Venable. He led a full academic life as investigator, influential teacher, scholar, and administrator. It was for his warm human personality and influence that Bell was most esteemed in the life of the college community. He made a substantial contribution to the establishment of the educational and administrative ideals and policies of the university.

He was elected a Fellow of the Chemical Society in 1925.

J. W. McBAIN.

GIUSEPPE GRASSI CRISTALDI.*

1860—1934.

CATANESE by birth, Giuseppe Grassi Cristaldi belonged to the group of students whom Stanislao Cannizzaro gathered round him in the period of his greatest activity and directed to the study and teaching of science at a time when, largely by his influence, the importance of chemistry in education and in the life of the nation was beginning to be appreciated in Italy.

After graduating in his native town, Giuseppe Grassi took his degree in chemistry in Rome under his great master in 1888, and remained there as assistant till 1895, when he went to Catania as Professor Extraordinary. Becoming full professor in 1900, he remained at Catania without interruption until his death on 20th December, 1934.

There his life was dedicated to the development of the school of chemistry. Though specially interested in organic chemistry, he did not neglect other branches, and his enthusiasm for keeping abreast of the progress of science in widely separated fields left him perhaps but too little time for laboratory research, for which in the earlier part of his career he had shown much capacity.

His first researches were on the problem of santonine, which occupied the school of Cannizzaro from 1874 onwards with results of much importance to the knowledge of its constitution. He was first engaged on the reduction products of santonine—santonone, *isosantonone*, the santoninic acids, and their oxidation products. He studied also the reduction products of iposantoninic acid and the structure of some of its derivatives. Other work was on the synthesis of benzoglyoxaline, the formation of trioxymethylene by the decomposition of chloroacetic acid by heat, and the constitution of hexamethylene-tetramine, for which he believed he confirmed the formula of Losekahn. He worked also on problems of local importance, the analysis of waters and of the material thrown up by the

* Compiled from the obituary notice by Professor B. L. Vanzetti in *La Chimica e l'Industria* (1935, 17, 48).

great volcano, in which he, like every good citizen of Catania, had a passionate interest. But his principal life work was his teaching and particularly the thorough instruction in laboratory work which he imparted to all his students.

Greatly esteemed by the Academic body for his uprightness of character and serenity of disposition, he occupied many important posts in the University and carried out much valuable work for the City and Province.

The appearance of health which he preserved to the end did not betray the serious malady affecting his last years. He was fully conscious of his condition, but determined not to spare himself. His last lecture was delivered on December 19th, and on the morning of the 20th a sudden heart attack ended his life while still in service.

He was born in 1860 and is survived by his wife and daughter.

A. H. BENNETT.

WILLIAM THOMAS GENT.

1855—1934.

WILLIAM THOMAS GENT was born in Macclesfield in 1855. He was educated at the Grammar School in that town, subsequently entering Berlin University as a student under Professor Rammelsberg.

On his return to England in 1874, Gent was employed as Chemist by the Widnes Metal Co., which was under the direction of Muspratt, Claudet, and others, and while there he came into contact with many prominent chemists, including Brunner, Mond, Carey, and Norman. With these he was instrumental in forming the local branch of the Society of Chemical Industry. His personality and ability attracted the attention of Richard Morris, who engaged him as Chemist at his Chemical Works at Misterton, where Gent remained for close upon 50 years, subsequently filling the position of Manager, and finally becoming a partner.

Gent held numerous public offices, including that of Chairman of the Parish Council and of the Misterton Rural District Council from its inception until 1925. He served on the School Board, was the founder of the Victoria Institute at Misterton, and was connected with many other charities. His public services were recognised by his appointment as a Justice of the Peace for the County of Nottingham in 1909, and he sat regularly on the Bench at Retford.

Apart from his activities in business and public life, Gent had two hobbies—travel and photography. He was a Fellow of the Royal Geographical Society and travelled widely, leaving behind him a valuable photographic record of the many countries he had visited. He formed a wide circle of friends, and during his student days at Berlin was on intimate terms with the Mendelssohn family; he ever cherished the memory of the musical evenings at which he was privileged to be present.

Gent retired from business in 1925, and spent the remaining years of his life at Bexhill-on-Sea, where he died on November 27th, 1934, at the age of 79. He was elected a Fellow of the Society on April 17th, 1879.

ARTHUR WILLIAM NUNN.

1867—1935.

ARTHUR WILLIAM NUNN, who died on January 25th, belonged to an old Colchester family and he received his early education at the local Grammar School. He, or his parents, chose pharmacy for his career and he was therefore apprenticed to a Mr. Arthur Weddell; in 1888 he passed the Qualifying Examination and five years later obtained his Diploma as a Pharmaceutical Chemist. For some years he was on the staff of Burroughs, Wellcome & Co., but in 1907 he opened his own pharmacy in Crouch Street, Colchester, where he was joined in 1925 by Mr. A. R. P. Sherry, Ph.C. For two years, 1918—1920, he was an

examiner for the Pharmaceutical Society, and he conducted classes in botany and other subjects at Colchester Technical School.

Nunn contributed, in pre-war days, a number of articles on galenical pharmacy to *The Pharmaceutical Journal*. In 1912, he put forward an alternative method of preparing extract of belladonna in order to avoid the hygroscopic nature of the pharmacopoeial preparation, and at an earlier date (1909) he suggested the use of a "Sparklet" syphon for making solution of magnesium bicarbonate. His interest in apparatus is shown by his description in 1910 of a portable apparatus for the preparation of hydrogen sulphide and in 1919 of a capsule for regulating the temperature of bacteriological incubators and drying cupboards.

Nunn played an active part in local affairs; he was a town councillor and his work on the Health Committee was particularly valuable because of his technical ability and sound knowledge of economics. He leaves a widow and two daughters.

E. T. NEATHERCOAT.

SVEN LUDVIG ALEXANDER ODÉN.

1887—1934.

SVEN LUDVIG ALEXANDER ODÉN was born in Norrköping, Sweden, on April 6th, 1887, and died in Stockholm on January 16th, 1934. He came of an old Swedish family, among the members of which had been farmers, clergymen, and public functionaries. His father was a captain in the army. After having received school education in his home town, he came to Upsala University, where he obtained his doctor's degree in 1913. Here he continued his research work for several years, at the same time lecturing in chemistry. In 1920 he was appointed professor of inorganic chemistry in the Institute of Technology, Stockholm, a position which he exchanged for the directorship of the Chemical Department of the Agricultural Research Station at Experimentalfältet near Stockholm in 1925.

Odén started research work in a laboratory where colloid chemistry was one of the main subjects of interest. At that time (1909) Zsigmondy's discovery of the inhomogeneity of colloidal solutions and Wo. Ostwald's generalisations on disperse systems had rendered thorough investigations of well-defined colloids highly desirable. Odén undertook a careful study of the sulphur hydrosols and succeeded in analysing these complicated colloids in a masterly manner. The influence of degree of dispersion on the properties of the sols was measured quantitatively after he had fractionated the polydisperse original sulphur sols into a series of practically monodisperse sols. His monograph on colloidal sulphur is a classic.

The problem of polydispersity occupied Odén's mind a good deal during the following years. He was looking for ways and means of determining size-distribution curves of disperse systems. In the case of colloidal sulphur, fractional coagulation had enabled him to get a rough idea of the size-distribution. Odén was not content with this—in his own opinion—rather incomplete result. He wanted to solve the problem in a more general way. The rate of settling of suspended particles is, for a certain material, a function of their size and shape, or simply of their equivalent radius, as Odén put it. He devised an automatically recording balance and worked out the theory for the calculation of size-distribution curves from the accumulation of sediment on a plate immersed in the suspension. By means of this apparatus he studied the formation of various precipitates and measured the size-distribution of clays.

His first records of the distribution of clay-particles demonstrated the far-reaching possibilities of this new research tool, the automatic balance. Odén had the power of looking at things with a bird's-eye view, he possessed that faculty of connecting seemingly disparate phenomena which is a characteristic of the genius. By applying his method of quantitative size-analysis to various kinds of soil, he was able to bring a number of important geological and agricultural questions nearer to their solution. His methods were elaborated in more detail during a stay at Rothamsted in 1923, where he enjoyed the collaboration of a number of distinguished English research workers.

During his boyhood days Odén had taken a great interest in botany, and now his method for size-distribution measurements brought him into the field of agriculture. When the chair of director at the chemistry department of the Experimental Station became vacant, he applied for it and received the post as a matter of course. Here he worked for nine years on various problems of plant biochemistry such as the nutrition capacity of different soils, and the physiology of assimilation, especially as regards the artificial illumination of growing plants. The way in which he attacked these problems showed the remarkable originality of his mind.

During Odén's Upsala years the writer had the privilege of being closely associated with him. Many a night we spent together in discussing the problems of disperse systems. But Sven Odén was not merely the scientist. He took a deep interest in literature and arts as well as in the living things of Nature. We hunted rare books and rare flowers together. In these pursuits he showed the same overflowing vitality as in his scientific researches. He read much and became a connoisseur not only of Swedish but also of English and French literature. Sven Odén was a man of many interests but above all he was an indefatigable and restless seeker. To him had been granted the unusual gift of combining intuitive imagination with hardy perseverance. THE. SVEDBERG.

ALLAN WINTER ROWE.

1879—1934.

THROUGH the death of Allan Winter Rowe at Boston, Massachusetts, last December, medical science has lost the services of a chemist who for 20 years had been working with great energy and marked success upon the chemical aspects of disorders of the ductless glands.

The following details of Rowe's career have been taken from the obituary notice which appeared in January in *Bostonia*. His English friends, most of whom knew him as a young man, will not be surprised that he accomplished so much, and so brilliantly fulfilled his early promise. With them will remain the memory of a man of sterling character, unsparing of himself in any cause he adopted, a lover of fair play, and a charming companion in social life.

Rowe at the time of his death was Professor of Chemistry at the Boston School of Medicine and Director of Research at the Robert Dawson Evans Memorial for Chemical Research and Preventive Medicine. His connection with both of these institutions was a long one—he began as lecturer in the former in 1906, was appointed Research Associate at the Evans Memorial in 1910, and became Director in 1921.

It was at the Evans Memorial that Rowe found ample scope for the employment of those qualities which he possessed in large measure—energy, wide knowledge of his own and allied subjects, lucidity of thought and expression, and the power of inspiring others. That under his direction research work progressed rapidly is shown by the growth of his staff and the number of his publications. During the period January 1929 to June 1934 there appeared forty-seven papers of which he was the sole or joint author; his monograph "The Differential Diagnosis of Endocrine Disorders" appeared in 1932.

In 1933 Rowe was chosen as President of the Society for the Study of Internal Secretions and subsequently Chairman of the Council. He was Vice-President and Trustee of the Memorial Foundation for Neuro-Endocrine Research, and was on the editorial staff of *Endocrinology*. Evidence of the recognition which his services to medical science had gained is reflected in his election to membership, or honorary membership, of numerous medical organisations. He was also a member of many chemical and scientific societies at home and abroad.

Much might be written of Rowe's services to the cause of education in general, but it will suffice to quote what was said of him by the President of Norwich University (Rowe was a member of the University Court). "In him were combined, in a finer and

greater degree, every quality of broad character, scholarship, sportsmanship, leadership, and human understanding of the individual and general needs of an educational institution than in any man that I have ever known."

Rowe's love of athletics never waned, and he took an active part in the development of University sport in various directions, being at one time a member of the A.A.U. Olympic Committee. Unable to undertake active service during the war, owing to an imperfectly healed fracture of the ankle, he was prominent in the organisation and maintenance of Base Hospital 44, which came to be regarded as a model unit. W. GOODWIN.