

Arthur Robertson Cushny.*

ARTHUR ROBERTSON CUSHNY was born on 6th March 1866, at the Manse of Speymouth, Fochabers, Morayshire, and was the fourth son of the Rev. John Cushny. Having received his early education at the Milnes Free School, Fochabers, he entered Aberdeen University, and after four sessions graduated M.A. in 1886. A year previously he had begun the study of medicine in Marischal College, and, in 1889, he obtained the degrees of M.B., C.M., with the highest honours. Among his teachers John Theodore Cash had a decisive influence; one of his college friends, now Sir Leslie Mackenzie, recalls how Cushny once said to him that Cash's teaching was an inspiration and made him feel that he could give his life to pharmacology. Having gained the George Thompson Fellowship, in July 1889, Cushny was able to visit continental laboratories. He spent some time with Kronecker at Berne, worked at Würzburg and especially at Strassburg, where he was assistant to Oswald Schmiedeberg from 1892 to 1893. This, the foremost pharmacological laboratory of the time, he left for an outpost of medical science on his appointment to a Professorship in the University of Michigan, Ann Arbor. The following twelve years, spent in America between the ages of 27 and 39, he recognised in a recent preface as the "formative" period of his life. During these years he established his reputation as a teacher and investigator, and wrote his *Textbook of Pharmacology and Therapeutics*, now in its eighth edition. This pioneer work was the first really comprehensive and systematic textbook in any language dealing with the subject primarily from the experimental side.

In 1905, Cushny was appointed Professor of Pharmacology at University College, London, and during his tenure of this Chair he became the leading British authority on his subject. He was elected a Fellow of the Royal Society in 1907; a new laboratory was built for him; he gave a fresh impetus to pharmacology, personally and through his pupils. Cushny indeed played a leading part in the creation, in this country, of a school of research and teaching in Experimental Pharmacology, in place of the dead routine of instruction in traditional *Materia Medica* which had previously existed. Small wonder that his native country claimed his services on the retirement, in 1918, of Sir Thomas R. Fraser from the Chair of *Materia Medica* at Edinburgh.

The Edinburgh period was alas all too short. In these years of

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maturity, his scientific investigations and the training of pharmacologists continued with undiminished vigour. In 1917, a monograph on *The Secretion of the Urine* had appeared, of which a second edition is now published. His treatment of the subject on a physical and chemical basis, and his views on filtration and reabsorption were a stimulus to others and led to the experimental proof of his theory by Wearn and Richards in 1923. At Edinburgh, Cushny wrote a second monograph on *The Action and Uses in Medicine of Digitalis and its Allies*. His interest in this subject was no doubt already aroused in Schmiedeberg's laboratory; his work at Ann Arbor laid the foundations of our present knowledge of the digitalis group. Having previously produced the condition experimentally in the dog's heart, he first recognised with Edmunds, in 1901, auricular fibrillation in man, in a patient under their care, and the book on digitalis aimed at correlating pharmacological with clinical results. Thus the subsequent recognition by Lewis, that this essential fault in the condition which James Mackenzie had called "nodal bradycardia," again laid the foundation of a very important chapter in modern knowledge of heart disease, and linked up with digitalis in particular, owing to the demonstration, by the joint pharmacological and clinical work of Cushny and Mackenzie, that auricular fibrillation is the condition in the heart on which digitalis shows pre-eminently its therapeutic effect. Yet another monograph, lately published, deals with the *Biological Relations of Optically Isomeric Substances*, a subject in which Cushny became interested through a comparative study of the actions of hyoscyamine and its racemic form atropine, a study later extended to *d*- and *l*-adrenaline and other cases. He chose this subject for his Dohme Lectures, given at Baltimore in the early summer of 1925. This visit to the United States enabled him to renew old friendships with colleagues and to receive from the University of Michigan the degree of LL.D., already conferred by his Alma Mater in 1911.

In the course of his career Cushny held numerous scientific offices: he served on the Council of the Royal Society, 1916-18, and on the Royal Commission on Whisky (1909); he was a member of the Conferences on Biological Standards held under the auspices of the League of Nations at Edinburgh (1923) and Geneva (1925). He was a sectional President at meetings of the British Association, the British Medical Association, the Royal Society of Medicine, etc. Most of his time was, however, given to scientific research, as some seventy papers and several books testify. With Professor J. J. Abel he edited the *Journal of Pharmacology and Experimental Therapeutics*. His teaching of medical

students was characterised by the exclusive use of the metric system, and by his reduction of the vast *Materia Medica* of a previous generation to a restricted list of real utility.

As a son of the manse Cushny had an extensive knowledge of the Bible and of the traditions of the Scottish Church. But in matters of dogma the Church did not retain its hold on him, and when he conformed to its observances, he did so out of affectionate regard for old associations. Speculative philosophy was foreign to the nature of one more interested in experimental investigation. His classical education made him impatient of smattering, and for this reason he consistently advocated the exclusion of Latin from the Medical Preliminary. In himself classical study had fostered an interest in the history of medicine and pharmacology, to which the walls of his laboratory bear witness. The years spent on the Continent and in America, together with his outstanding scientific position, made him well known abroad. The great war interrupted, and in a few cases ended, his intercourse with German colleagues, but those who were privileged to see the affectionate care with which he entertained an old friend and former "enemy" during the International Congress of Physiology held at Edinburgh, in 1923, knew that Cushny's friendships were proof against political differences. Both as treasurer and in other ways, Cushny did much for this congress; he was strongly in favour of the readmission of German and Austrian physiologists, and their presence greatly contributed to the success of the meetings.

Cushny's experience in a variety of medical schools made him a valued councillor in University affairs, but his dominant interest was research and he grudged time spent on administration. In the Medical Faculty, whose meetings he regularly attended, he said little; in controversy his criticism was all the more effective because tempered by humour. Among subjects near to his heart were the arrangement of the University Library and the administration of the Moray Research Fund. His last participation in affairs concerned the revision of the British Pharmacopoeia, about which he held strong views and for which he had attended a meeting in London.

Some hours after his return home on 24th February a cerebral hæmorrhage occurred, from which he died next morning. Many colleagues and friends at home and abroad mourn the loss of an untiring investigator, a revered teacher, a true friend, an honest man.

Cushny leaves behind him a widow and one daughter.

He was elected a Fellow of the Society in 1919, and served on the Council from 1919 to 1922.

G. B.