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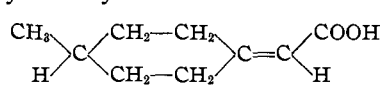
SIR WILLIAM JACKSON POPE

1870–1939

William Jackson Pope was born on March 31, 1870 in London. He commenced the study of Chemistry in the Finsbury Technical College as one of the earliest students of the late Professor H. E. Armstrong, whom he followed in 1887 when the latter migrated to South Kensington. Ten years later he was appointed head of the Chemistry Department of the Goldsmiths Institute at New Cross. In 1901 he became Professor of Chemistry at the College of Technology in Manchester and seven years later was appointed to the Chair of Chemistry at Cambridge, where he remained until he died on October 17th, 1939.

Early as a student, Pope was attracted to the science of crystallography, and possessed the uncommon faculty of spatial visualization. At Manchester, in collaboration with Barlow, he published a series of interesting papers on the packing of atomic spheres as models of crystal structure. Whilst Pasteur, whose papers Pope studied with deep interest, in 1849, had clearly enunciated the fact that optically active substances, whilst not necessarily devoid of all elements of symmetry, were dissymmetric and possessed no plane of symmetry in their structure, this important generalization was in some danger of being forgotten in the attention given to the papers of van't Hoff and Le Bel in 1874. In these the concept of the asymmetric carbon atom, defined by van't Hoff as an atom to which four dissimilar groups were attached, as the criterion of dissymmetry and thus of optical activity, was somewhat unduly stressed. It is clear, however, that Van't Hoff visualised the possibility of optical dissymmetry in compounds such as allene derivatives which possessed no one asymmetric atom as defined by him. In collaboration with Perkin and Wallach, Pope prepared the first compound of such a type by synthesising and resolving 1-methyl-cyclo-hexylidene-4-acetic acid



He also showed that it was unnecessary for the asymmetric carbon atom to be attached to other carbon-containing groups for optical activity by preparing and resolving one of the simplest compounds possessing optical activity, *viz.*, HC(I)-(Cl)SO_3H. Up to 1899 optical activity had been associated with compounds which were either dissymmetric or contained an asymmetric atom of carbon, but in that year Pope opened what was virtually a new field in the chemistry of optical activity by preparing a compound in which the optical activity was due to an asymmetric atom of nitrogen by resolving benzylphenylallylmethyl-ammonium iodide. In many of these resolutions he was assisted very materially by his discovery

and use with Kipping of the strong optically active acid α-bromocamphor sulfonic acid. This success was soon followed by the preparation of optically active compounds which owed their activity to asymmetric atoms of sulfur, selenium and tin.

At a later date there issued from the Cambridge Laboratories optically active compounds of arsenic, beryllium and zinc and still more recently compounds of platinum and rhodium. He was Longstaff Medalist of the Chemical Society in 1903 and Davy Medalist of the Royal Society in 1914; he was awarded the Dumas Medal of the Société de Chimie Industrielle in 1921 and the Messel Medal of the Society of Chemical Industry in 1932. He was elected an Honorary Member of the American Chemical Society at its 62nd General Meeting on September 7, 1921.

During the late war his breadth of knowledge and ability for getting things done resulted in a process for the direct synthesis of mustard gas and to drawing the attention of the authorities to a valuable source of toluene. For these services he was made a Knight of the British Empire in 1919. He was always keenly interested in the Goldsmiths Company, and attained high honor in this ancient Livery Company of the City of London. He took a lively interest in the metallurgical and chemical properties of the rare metals, gold, palladium and silver. After the late war his activity in research diminished although he still followed closely developments in dissymmetric molecular structure especially in the spirane configuration. Indeed, only a few weeks before his death he discussed with the writer the possible extension of a spirane configuration into a cyclol structure such as has recently been proposed by some as the basis of protein form.

The extent to which chemistry enters into the national economy impressed Sir William most forcibly during the period of the war, and it may be said that he devoted the rest of his life to rendering chemistry both more effective as a national asset, in the form of a Federal Council for Chemistry and as an important factor in international relations. It is generally recognized that the International Union of Pure and Applied Chemistry and the unique Solvay Chemical Conferences, in both of which he played a large part, owe much in vitality and mode of operation to Sir William Pope.

The criticism which has frequently been levelled at chemists that they are oblivious of other forms of culture could not be applied to Sir William, although it is true that this side of his life was presented only to his friends. His collections of pestles and mortars and of engravings of early alchemical discoveries are probably unique. He was also interested in ceramics and was no indifferent bibliophil. Whilst to some he appeared somewhat forbidding in aspect, to those who knew him and especially to those who had the privilege of being on his staff, he revealed himself as a man with a great sense of humour, of unusual kindness and generosity, possessed by an unexpected love of nature and withal somewhat shy. By his death International, British and Cambridge Chemistry have suffered a loss which will not easily be replaced.

ERIC K. RIDEAL