obituary

Robert Robinson was born in 1886 at Chesterfield in Derbyshire and went to the University of Manchester to study chemistry, where he came under the influence of W. H. Perkin, Jr, a brilliant organic chemist then at the height of his powers and in charge of a famous research school; his Manchester contemporaries included W. N. Haworth, J. F. Thorpe, J. L. Simonsen and Chaim Weizmann who became his lifelong friends. Robinson became a colleague and close friend of Perkin and they collaborated in a series of beautiful researches on the dyewood colouring matters, brazilin and haematoxylin, and on alkaloids. When only twenty-six years old he was appointed to the chair of organic chemistry in the University of Sydney, a position he held for three years until appointed professor at Liverpool in 1915. During his short stay in Sydney, and despite the upheaval of moving across the globe and the complication of a disastrous laboratory fire which destroyed many of his records, Robinson pushed ahead with his work on alkaloids and especially with his ideas on biogenesis based on structural relationships in the alkaloid group. His theories were given a tremendous boost by his synthesis of the alkaloid tropinone by the interaction, in dilute aqueous solution at room temperature, of three simple molecules all of which could well be plant metabolites. His paper on tropinone published in 1917 not only led to widespread adoption of his biogenetic theories as a tool in natural product studies, but provided the primary stimulus to all the modern developments in the elucidation of biosynthetic mechanisms.

Colour in nature had fascinated him from the time of his early work on the dyewoods, and, perhaps spurred on by the fact that he was a keen gardener, he turned his attention to the anthocyanin pigments of flowers. Already a master of the classical degradation methods of the organic chemist, he introduced a new approach in his anthocyanin studies—the use of analogue synthesis as a powerful tool in structure determination—which influenced the pattern of much future work in the natural product field. The total synthesis of all the major anthocyanins allowed him to initiate work on the genetics of flower colour variation; it also provided chemists with some new synthetic methods which, together with many others he devised and exploited during

Sir Robert Robinson

An appraisal by Lord Todd

his career, have greatly enriched the synthetic chemist's armoury of weapons.

His natural product work and especially his biogenetic theory have had a great and lasting impact. Equally vital to the development of organic chemistry, is his work on the electrochemical theory of organic reactions. Robinson's ideas on the nature of reactivity in organic compounds were stimulated and reinforced by his association with Lapworth in Manchester during the 1920s, and it would be fair to say that what is often called the Lapworth–Robinson theory of organic reactions expressed by them in terms of the electronic theory of valence, and powerfully developed by Robinson, provided an essential stimulus to all the great advances made since that time in our understanding of reaction mechanisms in organic chemistry. The electronic theory developed, however, when ideas of atomic structure were still rather primitive, but Robinson's views, re-interpreted in terms of modern molecular orbital theory remain valid to this day.

All these contributions were made during a career in which he occupied in quick succession five chairs of organic chemistry (Sydney, Liverpool, St Andrews, Manchester and University College, London) and one research directorship in industry (British Dyestuffs Corporation 1920–21) before he succeeded his old teacher Perkin as Waynflete Professor at Oxford in 1930,

a position he occupied until his retirement in 1957. Although his stay in industry was short, he made a profound impact not just on the British Dyestuffs Corporation but throughout his career, as consultant and adviser, on the chemical and pharmaceutical industries; he joined the Shell Chemical Company after his retirement from Oxford and continued to be associated until his death. Even though failing physically, he maintained the amazing clarity of mind for which he was famous.

As would be expected, honours were heaped on him by universities and learned academies all over the world. He served as President of the Chemical Society (1939–41), of the British Association for the Advancement of Science (1955) and of the Royal Society (1945–50). He was awarded the Nobel Prize for Chemistry in 1947 and for his services to science in Britain he was knighted in 1939, receiving the Order of Merit in 1949. He was twice married—his son and daughter, and his second wife, survive him.

His career would seem to leave little time for other activities. But Robert Robinson was no ordinary man. Although deflected from it at university he maintained a lifelong interest in mathematics. Perhaps related to this was his passion for chess of which he was a first-class exponent, having the entrée to the major chess-clubs in any city which he visited both here and abroad. He was also fond of music and was a much better pianist than he would admit. Out of doors he found recreation in mountain climbing and walking and spent his summer vacations traversing the Alps of which he had an encyclopaedic knowledge. A man of great physical and mental toughness he was nevertheless a shy man whose manner with strangers could sometimes be for this reason brusque or withdrawn. To those who knew him he revealed himself as he really was—kindly, generous and loyal. Humble in the face of nature, he loved children and perhaps for that reason was loved by them. He enjoyed the cut and thrust of scientific argument but he could on occasion be a little brusque with, or— which was more devastating—simply ignore those who were, in his view, being obtuse. Few men have inspired greater respect and real affection among those who were privileged to work under his guidance and to gain his friendship. With his passing Britain and indeed the world has lost one of the greatest men of science of this century.