

BOOK REVIEW

Structure and Mechanism in Organic Chemistry; by C. K. Ingold, 2nd ed., Ithaca and London, Cornell University Press; 1969, xii + 1266 pages, £15.9.0.

The appearance of a new edition of this outstanding book by the greatest contemporary organic chemist is a most notable event. No-one else alive today has had such an important influence on the conceptual development of organic chemistry as Sir Christopher Ingold—or indeed, on the growth of understanding of reaction mechanisms generally, for the ideas he applied to organic reactions are now part of the thinking of modern inorganic chemists also. But he would be the first to give credit to the many earlier chemists whose work made possible his great contributions, and one of the fascinations of this book is the way in which it places present concepts in the context of a progressive development over sixty or more years.

As the author states in his preface, when the first edition of the book was written in 1950–1951 the formation of the subject had been accomplished, and the work of development and consolidation by a vastly increased number of workers was beginning. To take account of this later work, while about two-thirds of the original text has been retained in the new edition with only minor amendments, more than that amount of new material has been added. Readers should not expect to find a detailed survey of the experimental results of the past 20 years (such compilations can be left to lesser minds), but work published mainly up to about 1962 is drawn upon whenever it is essential for development of the theory from the state which it had reached at the time of the first edition. What they will encounter in this edition, as in the first, are the brilliance of the author's thinking over a broad range, which enables him to reach such simple and satisfying generalizations from previously fragmented information, and the penetrating flashes of insight which reveal the significance of seemingly minor details.

For organometallic chemists, special interest lies in the introduction of material from organometallic chemistry, especially the use of studies of carbon–metal bonds in the sections on electrophilic aromatic and aliphatic substitution, and the discussion of the stereochemistry of substitution at atoms other than carbon.

Young chemists, in particular, should read this book not only for its vast body of information, generalizations, and stimulating ideas, but also to see the present concepts of reaction mechanisms in their historical context, and to learn how much their own thinking about reactions owes to Ingold. It is thus unfortunate that the price, while not out of proportion to the size, is so high that private purchases will be very limited, and it is to be hoped good numbers of copies will be made available by libraries.

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