Tetrahedron, 1958, Vol. 2, p. 367. Pergamon Press Ltd., London

BOOK REVIEW

J. Vène: **Chimie organique Générale.** Masson et Cie, Paris, 1957. 350 pp., 3.500 fr. (4.100 fr.).

This book, in French, attempts to describe that section of chemistry which concerns (a) the structure of organic compounds and the means for its determination, and (b) the reactivity of organic compounds and the mechanisms of their reactions. It is a book containing wide but elementary information on new developments in these fields, designed especially for those commencing the study of organic chemistry, or for those who studied the subject some 20–30 years ago and wish to bring their knowledge up to date. Considerations of space have contributed to limit the text to an outline of essentials, but copious references to original papers and to textbooks, monographs, and reviews are given to enable the reader further to pursue subjects of special interest.

The book is divided into five parts. Part 1 deals with classical molecular formulae and isomerism, Part 2 considers the relation between physical properties and molecular structure, Part 3 describes the nature of chemical bonds, Part 4 discusses organic chemical reactivity, and Part 5 surveys electronic interpretations of reactions.

The least satisfactory features of the book are Chapters I and II of Part 1, which are apt to be misleading in view of the treatment given to olefinic and acetylenic linkages in Chapter III; in the former, a description of isomerism and of the addition reactions of double bonds is given with elaborate illustrations in terms of tetrahedra, when the carbon atoms involved in fact possess planar trigonal sp^2-symmetry. The situation is the same for allene, in which the terminal carbon atoms have sp^2-symmetry, whilst the central carbon atom has the collinear sp-symmetry characteristic of the carbon atoms in acetylene. The same incorrect and misleading presentation occurs in Baeyer's strain theory; this is illustrated by the series of *cyclo*paraffins, which possess sp^3-tetrahedral symmetry, but ethylene, with sp^2-planar trigonal symmetry, is included as the first member of the series.

Apart from the foregoing shortcomings, the book gives an excellent picture of the field; thus it draws a clear distinction between polarisation and polarisability, and gives good, explicit statements concerning the π-component of the double bonds in $C{=}O$, $C{=}N$, and about the two π-components in $C{\equiv}N$, whilst it is emphasised that inductive and mesomeric effects for the same group can have opposite signs, although no statement is made that the energy sources of these two effects must therefore be different (electrostatic and quantum-mechanical, respectively). The book is remarkably free from errors; one such error occurs on page 10, where nitrogen is stated to be *either* 3- or 5- covalent. There are, however, some omissions. For example, there is no mention, in connexion with stereoisomerism, of the Fischer Convention; there is no reference to the recent work of Prelog on asymmetric synthesis leading to the deduction of absolute configuration; there is no reference to conformation and its effect on reaction velocity and equilibrium in *cyclo*hexanes (or in six-membered heterocycles such as piperidine and pyranose sugars), and there is no reference to the important contributions of Winstein on neighbouring group effects. It is to be hoped that some small additions on these topics will be made in a future edition.

With the above reservations, the book is strongly to be recommended to those who wish to learn something in outline of recent developments in theoretical organic chemistry.

C. W. Shoppee