BOOK REVIEW

METHODEN DER ORGANISCHEN CHEMIE (Houben-Weyl). Fourth Edition. Edited by Eugen Müller. Volume V, Part 4. Halogenverbindungen. Herstellung von Brom- und Iodverbindungen. Reactivität und Umwandlung von Chlor- Brom- und Iodverbindungen. Pp. xlviii + 894 (including Index). Georg Thieme Verlag, Stuttgart, 1960. Moleskin, DM.180.00.

The pace at which organic chemistry continues to develop is marked by the fact that the chemistry of hydrocarbons and halogen compounds allotted to a single volume in the original plan for the new Houben-Weyl is now to be treated in no less than four separate volumes. The need for this large expansion arises from the rapid growth of fluorocarbon chemistry, and from the perhaps rather better known development of methods for the production of organic chemicals from petroleum sources. The somewhat unusual properties of fluorocarbons, which set them apart from the other organo-halogen compounds based on chlorine, bromine and iodine, both in synthesis and properties, has led to a separate treatment of fluorocarbons in Volume 5, Part 3. The second volume on halogen compounds, Volume 5, Part 4, at present under review, is concerned with the preparation of bromo and iodo compounds (the preparations of chloro-compounds is dealt with in Part 3) and the properties of chloro-, bromo- and iodo-compounds. The opening chapter provides a comprehensive review of brominating and iodinating reagents, including the elementary halogens, halogen acids, alkali- and organo-hypohalites, inter-halogen compounds, phosphorus halides, thionyl halides, acid halides, and *N*-halogen compounds, describing general properties, methods of preparation, purification and drying. Succeeding chapters are devoted to preparative methods with these reagents, and include the addition of halogen and halogen acids to unsaturated systems; the replacement of hydrogen, hydroxyl, amino, carboxyl and other groups by halogen; special addition reactions of organo-halogen compounds with olefines, epoxides, carbonyl compounds and aliphatic diazo compounds; bromomethylation and the haloform reaction. Only two chapters are devoted to the properties of halogen compounds. They provide a comprehensive survey of elimination and replacement reactions of halogen compounds, and include a classification based on detailed reaction mechanism. The influence of neighbouring substituents on mechanism and reaction rate is discussed in detail, and this section greatly enhances the value of the book. In keeping with the rest of this series, Volume V, Part 4, is excellently referenced, providing a ready access to the literature for those requiring more detailed information.

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