Will continuation of the present plan for the series result in as important an influence for improving organic chemistry in the future as it has in the past? The answer to the second question must be no, even by the most sympathetic chemist, and to no small degree *because* the series has been so influential in the past, particularly during the period before 1940. On the other hand, the need for tested, reliable experiments and procedures is no less today, and in certain areas may be greater than in the past, as a result of the understandable, but unfortunate, tendency to reduce experimental sections of publications still further, in response to various pressures, including the financial facts of publication today. While in only a few chemistry journals has this trend yet reached the stage as to make the experiments difficult or impossible to reproduce, the other aspect of the problem compounds the difficulty even in the best financed of journals. Because of preoccupation in other phases of the research problem, both experimental and theoretical, and doubtless for good reasons, a smaller proportion of the published experiments today, as compared to certain earlier periods, represent well-worked out procedures described with sufficient skill and clarity as to be reproducible in the hands of an *experienced* organic chemist *without* any major difficulty.

This in the reviewer's opinion, then, underlines the continuing need for "Organic Syntheses." But is it not possible that the time and efforts of the editorial board and their collaborators might be utilized still more fruitfully if the present policy were modified? Perhaps a reduction in the frequency of volumes from annual to biannual would allow the time saved to be spent on soliciting and perfecting more examples of the most immediate and permanent value: those which exemplify the use of new and widely applicable, or cleanly selective, reactions, apparatus and techniques. Perhaps this is an appropriate time for those users of "Organic Syntheses" with constructive criticisms to write them to the editorial board.

Regardless of any minor or major disagreement in these matters, all who carry out organic chemical reactions in the laboratory, or who use the compounds described, will continue to be grateful to the editors of "Organic Syntheses" and to the submitters of good procedures for their generosity with their time and talents for the general good of chemistry.

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Chemistry of Natural and Synthetic Rubbers. By Harry L. Fisher, Professor of Chemical Engineering, Director of TLARGI Rubber Technology Foundation, University of Southern California, Los Angeles, California. Reinhold Publishing Corporation 430 Park Avenue, New York 22, N. Y. 1957. vii + 208 pp. 16 × 23.5 cm. Price, $6.50.

The author of this small volume has been active in rubber chemistry for over 40 years. His great interest and enthusiasm for his subject is reflected in his writing.

The scope of his book is broad. He had divided it into 13 chapters which cover almost all of the major topics of rubber chemistry. The only important topic that the reviewer has noted to be missing is filler reinforcement. The author has not missed many others; for instance, in his 69-page chapter on synthetic rubber he discusses 19 different polymers ranging from plasticized PVC to "synthetic natural" rubber.

Dr. Fisher has participated in many of the important developments in rubber technology, and he is able to recall personal experiences associated with these developments in a very interesting manner. His procedure is to give a short historical treatment to each subject before giving a chemical exposition of it. His point of view is that of the synthetic organic chemist. When he attempts to discuss the physicochemical aspects of rubber chemistry, his treatment is frequently weak as for instance in his discussion of intrinsic viscosity on page 77. Because he has attempted to cover so many subjects, his comments on each are necessarily brief.

The book is easy to read and can certainly be completed in one evening by a chemist experienced in the field. The style is generally that of a popular essayist rather than that of a scientific investigator writing for a journal. The author is quite inconsistent in his preparation of bibliographies. After a 12-page discussion of general purpose synthetic rubber, no bibliography is given, but after an 18-page discussion of chemical derivatives of rubber, a rather complete bibliography listing 5 general references and 47 specific references is attached.

The book offers an interesting review of rubber technology to one active in the field and a broad but necessarily shallow introduction of the subject to a scientist new to the field.

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Einführüng in Die Ultrarotspektroskopie. 2. Neubearbeitete Auflage. By Dr. Werner Brügel, Physiker in der Badischen Anilin- and Soda-Fabrik AG., Ludwigshafen a. Rh. Verlag Dr. Dietrich Steinkopff, Holzhofallee 35, Darmstadt, Germany. 1957. xii + 404 pp. 15 × 21 cm. Price, brosch. DM 49, —; geb. DM 52, —.

This is a useful book and the infrared spectroscopist should have one in his personal library. It is written in four parts. The first part gives a introduction to the necessary theoretical background for a reasonable understanding of observations in experimental infrared spectroscopy. It contains the usual quantum mechanical introduction with discussions of symmetry properties, selection rules, rotational spectra, vibrational spectra, vibrational–rotational spectra and intensities. One chapter is devoted to theory concerning the infrared spectra of liquids and solids. The second part gives a discussion of the equipment and preparation techniques used in infrared spectroscopy. It contains discussions of radiation sources, monochromators, detectors, etc. There is a chapter which describes all of the commercial instruments as well as chapters on accessories and sample handling techniques. The third part is concerned with methods of practicing infrared spectroscopy. After introducing the concept of group frequency, considerable space is devoted to the correlation of group frequencies with molecular and bond structure. This is followed by a discussion of qualitative analysis and quantitative analysis by infrared means. There is a chapter which presents methods of obtaining reflection and polarization spectra and the application of microspectroscopic equipment. The fourth part presents a number of results and applications. It contains a chapter on important group substances including a discussion of paraffins, cycloparaffins, olefins, carbonyl compounds, other oxygen-containing compounds, nitrogen-containing substances, etc. Other chapters contain material on polymers, inorganic substances and special effects such as hydrogen bonding, rotational isomers and the spectra of adsorbed substances.

The author has done a good job of bringing together in one volume a treatment of theory, instrumentation, sample handling, group frequency methods and a wide range of results and applications.

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Infrared Absorption Spectra of Steroids. An Atlas. Volume II. By Glyn Roberts, Beatrice S. Gallagher and R. Norman Jones, The Sloan–Kettering Institute for Cancer Research and the National Research Council of Canada. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1958. viii + 478 pp. 16 × 23.5 cm. Price, $20.00.

This volume greatly increases the value of infrared absorption spectra as a means of characterizing steroids. It is also of general value as a model in the systematic use of infrared data as an aid in the identification of organic compounds.

The format is the same one employed for Volume I. The spectra are represented on a linear wave number scale, and are true absorption curves with the ordinate values showing percentage absorption. A blank page opposite each spectrum provides the user with convenient space for noting assignments and comments. The charts in this volume are numbered from 309 to 760 in continuation from Volume I. Charts 309-668 give spectra for 360 steroids. About 50 of these spectra were measured using potassium bromide disks, and cover the range 4000–700 cm.$^{-1}$. The other spectra in this group represent samples dissolved in carbon disulfide, carbon tetrachloride or chloroform, and are generally complete from 1800 to 650 cm.$^{-1}$. Two groups of charts, 669-740 and 741-760, cover the respective ranges, 1500-1280 and 900-650 cm.$^{-1}$. These partial spectra supplement incomplete curves given in Volume I. The two volumes record spectra for a remarkable total of about 650 steroids.

This volume includes a discussion section which emphasizes and guides interpretive entries into the catalog of spectra. This section includes an impressively complete tabulation of structure–spectra correlations which are keyed to a bibliography that lists the original publications. The discussion covers the role of apparent and true band intensities in resolving structural ambiguities resulting from overlapping bands. It also defines the experimental technique required to obtain reproducible spectra for steroids in potassium bromide disks.

The alphabetical and functional group indexes to the charts cover both volumes of this Atlas. The general system of nomenclature is unchanged from Volume I. The two exceptions are the estrogens and the sapogenins. The estrogens are treated as derivatives of $\Delta^{1,3,5(10)}$-estratriene in Volume II rather than by their trivial names. The sapogenins, on the other hand, are treated by their trivial names because work on their stereochemistry has indicated the need for modifying the systematic nomenclature of these compounds.

The book will be invaluable to anyone using infrared spectroscopy in steroid research. Finally, this second volume of this Atlas enlarges the recognition of the contribution of the late Dr. Konrad Dobriner to steroid chemistry particularly, and organic chemistry in general.

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BOOKS RECEIVED

July 10, 1958—August 10, 1958

A. Albert, G. M. Badger and C. W. Shoppee, Editors. "Current Trends in Heterocyclic Chemistry. Proceedings of a Symposium held at The John Curtin School of Medical Research, Australian National University, Canberra, 2nd–4th September, 1957, under the auspices of the Chemical Society." Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1958. 170 pp. $5.50.

C. H. Bamford, W. G. Barb, A. D. Jenkins and P. F. Onyon. "The Kinetics of Vinyl Polymerization by Radical Mechanisms." Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1958. 318 pp. $8.80.

L. J. Bellamy. "The Infra-red Spectra of Complex Molecules." John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1958. 425 pp. $8.00.

Robert U. Bonnar, Martin Dimbat and Fred H. Stross. "Number-Average Molecular Weights. Fundamentals and Determination." Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1958. 310 pp. $7.50.

Robert P. Cook, Edited by. "Cholesterol. Chemistry, Biochemistry, and Pathology." Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1958. 542 pp. $15.00.

T. P. Das and E. L.' Hahn. "Solid State Physics. Advances in Research and Applications." Supplement 1. "Nuclear Quadrupole Resonance Spectroscopy." Frederick Seitz and David Turnbull, Editors. Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1958. 223 pp. $7.00.

D. D. Eley, W. G. Frankenburg and V. I. Komarewsky. Edited by. Paul B. Weisz, Associate Editor. "Advances in Catalysis and Related Subjects." Volume X. Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1958. 326 pp. $11.00.

Volker Franzen. "Reaktionsmechanismen." Erste Folge. Dr. Alfred Hüthig Verlag, Wilckensstrasse 3, Heidelberg, Germany. 1958. 160 pp. DM 18, —.

George J. Janz. "Estimation of Thermodynamic Properties of Organic Compounds." Academic Press, Inc., 111 Fifth Avenue, New York 3, N. Y. 1958. 211 pp. $6.00.

C. Kittel. "Elementary Statistical Physics." John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1958. 228 pp. $8.00.

J. Koch (Editor), R. H. V. M. Dawton, M. L. Smith and W. Walcher. "Electromagnetic Isotope Separators and Applications of Electromagnetically Enriched Isotopes." Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1958. 314 pp. $7.50.

Paul Pascal, Editor. "Nouveau Traité de Chimie Minérale." Volume XII. "Vanadium—Niobium—Tantale—Protactinium." Masson et Cie., 120 Boulevard Saint-Germain, Paris 6, France. 1958. 692 pp. Broché, 6.000 fr.; cartonne toile, 7.000 fr.

Paul Pascal, Editor. "Nouveau Traité de Chimic Minerale." Volume XIX. "Ruthénium—Osmium—Rhodium—Iridium—Palladium—Platine." Masson et Cie., 120 Boulevard Saint-Germain, Paris 6, France. 1958. 954 pp. Broché, 8.500 fr.; cartonné toile, 9.700 fr.

Robert C. Reid and Thomas K. Sherwood. "The Properties of Gases and Liquids. Their Estimation and Correlation." McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 36, N. Y. 1958. 386 pp. $10.00.

W. Theilheimer. "Synthetic Methods of Organic Chemistry." Volume 12. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1958. 546 pp. $22.25.

H. I. Waterman in collaboration with C. Boelhouwer and J. Cornelissen. "Correlation between Physical Constants and Chemical Structure. Graphical Statistical Methods of Identification of Mineral and Fatty Oils, Glass, Silicones, and Catalysts." D. Van Nostrand Company, Inc., 120 Alexander Street, Princeton, New Jersey. 1958. 120 pp. $5.25.