BOOK REVIEWS

Progress in the Chemistry of Organic Natural Products (Fortschritte der Chemie Organischer Naturstoffe). Volume VIII. By L. ZECHMEISTER, Editor, California Institute of Technology, California. Springer-Verlag, Vienna, Austria, 1951. ix + 400 pp. Illustrated. 16 × 24 cm. Price, $16 unbound; $16.80 bound.

It is widely recognized that the adequate publication, indexing and abstracting of scientific research is essential if our modern civilization is to continue its rapid development, particularly in such an active field as chemistry. It is not so widely appreciated that a second important step in the dissemination and utilization of scientific discoveries is their assimilation and digestion by experts in their special fields followed by the publication of critical résumés of the progress in their fields for the benefit of all their fellow scientists. The continuing success of this Series, as evidenced by the appearance of this eighth volume in thirteen years, is therefore very gratifying.

A further gratifying feature of this Series is its international character. It is printed and published in Austria, in three languages, and is edited in the United States. Also, its articles come from many countries. Thus, of the thirteen authors in the present volume three each come from England and Switzerland, two each from Austria and the United States, and one each from the Argentine, Germany and Japan. This is genuine and spontaneous internationalism, free from any of the trappings of propaganda and subvention! This sort of phenomenon, and indeed the whole international aspect of pure science, is one of the heartening items of the modern, global scene.

This volume contains ten chapters on quite diverse subjects, as follows:

The Fine Structure of Cellulose, by A. Frey-Wyssling and K. Mühlethaler, Eidg. Technische Hochschule, Zürich. 27 pages.

Bacterial Dextrans, by M. Stacey and C. R. Ricketts, Chemistry Department, The University, Birmingham. 19 pages.

Sugar Phosphates, by L. F. Leloir, Inst. de investig. bioquimicas, Buenos Aires. 49 pages.

The Chemistry of Nucleotides, by G. W. Kenner, The Uni. Chem. Laboratory, Cambridge, England. 50 pages.

Die Veilchenriechstoffe, by H. Schinz, Eidg. Tech. Hochschule, Zürich. 61 pages.

Neuere Entwicklungen auf dem Gebiete der Flechtenstoffe, by Y. Asahina, Res. Inst. of Natural Resources, Tokyo. 38 pages.

Lupinen-Alkaloide und verwandte Verbindungen, by F. Galinovsky, II. Chem. Universitätslaboratorium, Vienna. 33 pages.

Brechwurzel-Alkaloide, by M. Pailer, II. Chem. Universitätslaboratorium, Vienna. 32 pages.

X-Ray Diffraction Studies of Crystalline Amino Acids and Peptides, by R. B. Corey, California Inst. of Technology, Pasadena. 31 pages.

Some Aspects of Enzyme Chromatography, by L. Zechmeister, California Inst. of Technology, and M. Rohdewald, Physiolog. Inst. der Universität, Bonn. 24 pages.

A worthwhile, critical appraisal of the ten chapters of this volume would require not one reviewer but ten. Their subject matters are widely different; and expertness in any one of them would require years of application. However, even as an amateur, I can see that they have been carefully prepared and lucidly presented. Moreover, perhaps because I am an amateur, I can report an over-all impression of wonder, both at the variety and complexity of the constituents of these natural products, and at the power and persistence of the human intellect that has been able to discover and understand them.

Thus, referring specifically to the chapters in this Volume, one cannot but be astonished at the remarkable cellulosic fine-structure of the cell walls of plants, and at the power of the techniques that have been used in their study; at the great increase in our knowledge of the dextrans which offer so many possibilities in blood transfusion, and of the sugar phosphates which play so important a role in both vegetable and animal metabolism; at the precise new information as to the structure of amino acids and peptides which X-ray studies of their crystals affords, and at the achievements and possibilities of chromatography in the elucidation of the nature of enzymes, those master Daemons of the protein world! Finally, one cannot but stand in awe at the energy and virtuosity of the organic chemists, who with infinite patience and a vision more powerful than the electron microscope, have deciphered the arrangements of the atoms in molecules as complex, for instance, as those discussed in this Volume, namely, the nucleotides, the alkaloids of the lupins and of ipecacuanha, the Flechtenstoffe, and the essential constituents of the aroma of the violet. In addition, they have learned how to synthesize most of them in the laboratory from known substances.

It is certainly to be hoped that this Series can continue to perform its useful and valuable service.

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Polyvinylchlorid und Vinylchlorid-Mischpolymerisate. By Dipl.-Ing. Dr. techn. FRANZ KAINER, Patentwalt in Heidelberg. Springer-Verlag, Reichpietschufer 20, (1) Berlin W 35 (West Berlin), Germany, 1951. xii + 698 pp. 16.5 × 23.5 cm. Price, DM 60.—.

In view of the new industrial importance of polyvinyl chloride and vinyl chloride copolymers in "vinyl plastics" and growing interest in the fibers it is not surprising that a book should appear on this subject. Nor is it surprising that the first book should be published in Germany a country which has contributed materially to the development of the monomer synthesis, polymerization and techniques for shaping the polymers into useful forms. The principal value of the book to polymer chemists is its many patent references and references to the journal Kunststoffe. Kainer (formerly Krczil) has organized his book under the following main divisions: Vinyl Chloride Monomer (20 pp.), Preparation of Polyvinyl Chloride and Vinyl Chloride Copolymers (181 pp.), Composition and Properties of the Polymers (26 pp.), Analysis of the Polymers (24 pp.), Forming Plastics and Fibers (157 pp.), Uses of the Polymers (221 pp.). Patent, Author and Subject Indices are included. More than 46 pages are devoted to plasticization.

This is a "file card" book based upon the literature. Of the actual processes employed industrially the author seems to have had insufficient knowledge to guide him in the selection and evaluation of the references. Much space is consumed in reciting general, vague, and often conflicting statements from patents. On the other hand, really epoch-making inventions often are given no special attention. Few of the important FIAT and PB reports seem to have been available to the author. Economy might have resulted from abbreviating company names in the footnotes and by simply listing the less important patents in groups. Some patents should have been eliminated entirely, since the procedures in question are in fact not applicable to vinyl chloride, *e.g.*, layer casting, page 283. The reviewer doubts that polyvinyl alcohol can be obtained from polyvinyl chloride as indicated on page 255. The discussion of polyvinyl chloride pastes is inadequate. Especially unfortunate is the reliance on patents in the long section on uses of vinyl chloride polymers. As it stands this section could be more appropriately titled *Suggested* Uses. Relatively little information is included from British, French and U. S. journals and from company data bulletins.

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