analytical tools, and the modern industrial applications of mold metabolism.

There are then chapters on the methodology of mold metabolism, the chemical nature of the mycelium, and a general consideration of mold metabolism. A chapter on natural variation is followed by an excellent and comprehensive survey of modern work on mutations, physiological genetics, and biochemical syntheses in fungi. Here are discussed such topics as the induction of mutations by chemical and physical means and the techniques and results of the classical biochemical-genetical investigations on *Neurospora* by Beadle, *et al.*

Subsequent chapters deal with trace element nutrition of fungi, the production of well-known organic acids (lactic, oxalic, fumaric, citric, itaconic, kojic, etc.), and the production of carbohydrates. Chapter 18 describes a miscellaneous group of fungus activities such as sulfur and chlorine metabolism, the oxidation of long-chain saturated fatty acids, etc. The book closes with an extraordinarily informative chapter on the microbiological aspects of penicillin, its history, and methods of production, which could have been written only by one with a background of experience in modern industrial mycology such as the author obviously possesses. This chapter closes as do all the others with a bibliography. Author and subject indexes are appended.

The present reviewer is no biochemist of fungi. As a mycologist, however, he can quite readily evaluate the accuracy and clarity of presentation of the less specialized aspects of the material covered. It is his opinion that we have in Foster's volume by far the most comprehensive and modern treatment of mold metabolism that has yet appeared.

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● ORGANIC COATINGS IN THEORY AND PRACTICE

A. V. Blom, **Consulting Chemist, Zurich. Elsevier Publishing Company, Inc., New York, 1949. x + 298 pp. 121 figs. 82 tables. 16.5 × 25.5 cm. $4.75.**

This book is the sixth in the Elsevier's Polymer Series. It proposes to outline the principal facts and theories of organic coating science in the light of developments in the last two decades. The close relationship of this subject to the science of plastics is made apparent throughout this book since the presence or formation of macromolecules is essential to the mechanical requirements for both plastics and coatings, and the same basic materials may generally be utilized in both applications.

Chapter I of this volume is entitled Fundamental Considerations and includes excellent discussions of plasticizing action and the process of film formation. The next two chapters provide surveys of natural and synthetic film-forming materials. Chapter IV treats of film formation by the physical processes of evaporation and congelation; in Chapter V chemical film formation is discussed; pigments and their relationships to vehicles are the subject of Chapter VI; the final chapter (VII) is concerned with film properties and their testing.

The presentation of theory in this book includes many significant generalizations supported by appropriate literature references, and numerous pertinent conclusions based upon the author's own research and experience. The treatment of the more practical aspects of coatings, though necessarily abbreviated in details, is generally adequate for a broad survey of the subject. It is apparent that the author is familiar with both the American and the European literature and practice in the field of protective coatings.

It is probable that this book can add considerably to the basic knowledge and understanding of even the well-informed reader in this field. It is not, however, a satisfactory reference book on specific materials, and the subject index fails in many instances to reveal those factual details which are included. For example, there is no entry for Vinyl- or Polyvinyl- in the subject index although a section of 17 pages in Chapter III is entitled Vinyl- and Allied Copolymers and these materials are also referred to in other portions of the text. Likewise, Styrene and Polystyrene are not found in this index but are frequently mentioned throughout the book.

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● SEMIMICRO QUALITATIVE ANALYSIS: A NON HYDROGEN SULFIDE SYSTEM

Jacob Cornog, **Assistant Professor of Chemistry, State University of Iowa, Iowa City, Iowa.** ***Herman T. Briscoe,*** **Editor. Houghton Mifflin Co., Park Street, Boston, Massachusetts, 1948. xi + 259 pp. 27 figs. 5 tables. 17 × 24 cm. $3.**

It is refreshing and inspiring to the teacher, at least, to see a new book which does not follow the generally accepted procedure of analysis. Dr. Cornog's book departs considerably from the ordinary scheme of analysis. The groups are as follows:

1. Chloride group, precipitated by HCl, contains $PbCl_2$, AgCl, and HgCl.
2. Sulfide group, precipitated by $(NH_4)_2S$ in acetate-acetic acid buffered solution, contains HgS, Bi_2S_3, FeS, CuS, CoS, NiS, CdS, PbS, ZnS, As_2S_3, Sb_2S_3, and SnS.
3. Oxalate group, precipitated by $NH_4HC_2O_4$ and H_2SO_4 gives $BaSO_4$ and CaC_2O_4.
4. Phosphate group, precipitated by H_3PO_4 and NH_4OH, gives $Mn_3(PO_4)_2$, $MgNH_4PO_4$, $AlPO_4$, and $CrPO_4$.
5. Soluble group contains NH_4^+, K^+, and Na^+.

Separations within the groups are, by and large, those ordinarily used, but the different grouping of the elements throws an entirely different light on many problems. The author states: "The system described in this book has been used by hundreds of students in widely separated places over a period of years. Over-all results are at least equal to those obtained with the Fresenius (H_2S) system. Large laboratories are fume-free, and hydrogen sulfide generators are eliminated."

The book is apparently intended for students who have had about one-half year of general chemistry.

The book is wire bound with paper leaves. Most students probably prefer such a binding when the saving is passed on to them.

The first 51 pages are devoted to laboratory exercises. There are blanks to fill out at the end of each exercise. The next 16 pages give directions for preparation of samples and analysis of cations. Alternative procedures are given to provide for 6 or 13 anions. A section of 77 pages dealing with such topics as exponential numbers, ionic equilibria, and the balancing of oxidation-reduction equations precedes the appendix and index.

Whether or not this system will replace the H_2S system only time will tell.

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● A SOURCE BOOK IN GREEK SCIENCE

Morris R. Cohen, **Late Professor of Philosophy, College of the City of New York, and** ***I. E. Drabkin,*** **Department of Mathematics, College of the City of New York. McGraw-Hill Book Co., New York, 1948. xxi + 579 pp. 141 figs. 23 × 16 cm. $9.**

This is the latest volume to appear of the now well-known series of Source Books in the History of the Sciences under the general editorship of Gregory D. Walcott. The previous anthologies of