in such a useful volume so much about the cotton fiber that is actually related to industrial practices and processes.

The book follows a sequential treatment of the processing of cotton, starting with the chemistry of the raw cotton, then following with a discussion of the weaving, followed by a discussion of wet process finishing, including bleaching, dyeing, and printing, and then discussions of special functional finishes.

A symposium of this type, in which the work of some 20 different authors is represented, shows actually more uniformity of treatment than one might expect. This is a credit to the editor and his associates, who have done a fine job of editing.

A book of this kind will be very useful to technical people in the industry itself. Through books of this technical level, industry is being provided with a type of technical literature of a high order, which will add to the stature of textile technology as a professional field. Such books also introduce students coming into the profession to the many great technical contributions that have been made during the past two decades.

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Petrographic Mineralogy. Ernest E. Wahlstrom. Wiley, New York; Chapman and Hall, London, 1955. vii + 408 pp. Illus. $7.75.

This is the fourth book by Ernest Wahlstrom, of the department of geology of the University of Colorado. The first three—namely *Optical Crystallography, Igneous Minerals and Rocks,* and *Theoretical Igneous Petrology* — were needed to fill gaps in the ranks of elementary textbooks in their respective fields and have been well received. *Petrographic Mineralogy* consists in the main of selected portions of Wahlstrom's earlier works, together with a small amount of material that he has not previously presented.

In the preface, the author states that "The book is designed for a semester course of the type that normally would follow a course in the theory and operation of the polarizing microscope." Thus the book attempts to summarize information on the following: petrographic techniques, both microscopic and otherwise, including the universal stage; petrogenetic calculations; most of the rock-forming and the more common accessory minerals; and the compositions, properties, and classifications of igneous, sedimentary, and metamorphic rocks. This is not only a heavy load to be borne by the average student during a single semester, but it is likewise an inordinate burden for a textbook of 408 pages.

Chapter 1, "The collection and preparation of samples," is largely new. Chapter 2, "Petrographic techniques," describes mineral separation by means of magnetic methods, electrostatic methods, heavy liquids, and so forth. Most of this material is taken verbatim from *Igneous Minerals and Rocks,* pages 42 to 46. Also in this chapter, the section on physical characters in hand specimens, x-ray examination, staining techniques, and so forth, largely comes from Chapter 3 of *Igneous Minerals and Rocks.* Additions here mention examination by means of the electron microscope and differential thermal analysis.

"Microscopic examination of minerals and aggregates" is the title of Chapter 3. The introduction to this chapter is very similar to the introduction to Chapter 2 of *Igneous Minerals and Rocks.* The second part of this chapter, "Micrometric methods," is a somewhat revised version of what appears on pages 255 to 257 of *Igneous Minerals and Rocks.* In the third part, "Physical properties of minerals under the microscope," the description follows essentially that presented in *Igneous Minerals and Rocks* starting on page 10. Here also begins the repetition of many of the photographs previously used.

In Chapter 4 are presented descriptions of the universal stage and universal stage techniques. Some of this material has not been included in any of the previous books, but much of it represents an expansion of Appendix A in *Optical Crystallography.* It seems to me that the inclusion of this technique is not appropriate to an elementary course in microscopic petrography. Similarly in Chapter 5, which is entitled "Graphical presentation of data and common petrographic calculations," material is taken in large part from *Igneous Minerals and Rocks* and also to some extent from *Theoretical Igneous Petrology.*

The description of the rock-forming minerals begins with Chapter 6 (silicates), continues through Chapter 7 (nonsilicates) and concludes with Chapter 8 (Tables for Mineral Identification). Most of this material has been presented in similar form in *Igneous Minerals and Rocks.* Also, most of the illustrations have appeared before in the earlier book; only a few are new. One photomicrograph of labradorite not only has been used before but appears twice in *Petrographic Mineralogy* (pages 27 and 111). The tables for identification likewise are similar, except that some nonigneous minerals have been added. In *Igneous Minerals and Rocks,* Table 2 was presented as a series of descriptive listings; in *Petrographic Mineralogy* it is presented in a more abbreviated semidiagrammatic form. Chapter 9, "Composition, properties and classification of igneous rocks," stems almost directly, in abbreviated form, from Chapters 7 to 11 of *Igneous Minerals and Rocks*; but Chapter 10, "Composition, physical properties and classification of sedimentary rocks," and Chapter 11, "Composition, properties and classification of metamorphic rocks," have not been presented previously. Together these two chapters include about 65 pages. In contrast to the chapter on igneous rocks, that on sedimentary rocks presents almost no photomicrographs.

The book is uneven in the instructional level of its various parts. The quality of the petrographic descriptions hardly matches the higher horizon of the optical crystallographic work set by the inclusion of the universal stage methods.

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Chemotherapy of Malaria. Gordon Covell, G. Robert Coatney. John W. Field, Jaswant Singh. World Health Organization Monogr. Ser. No. 27. World Health Organization, Geneva, 1955. 123 pp. Illus. $3.25.

This book, written conjointly by four experts who reside in different parts of the world, brings together in a compact form factual information on the properties and usefulness of drugs commonly used in the treatment of malaria.

Chapter 1 describes the enormous strides that have been made in the chemotherapy of malaria since the time during World War II when quinine became unavailable to the Allies. The first phase involved intensive studies in this country of the physiological disposition of quinacrine (Atabrine) that led to the adoption of improved dosage schedules and raised the status of quinacrine from that of a poor substitute for quinine to that of a drug superior to it. With application of the new knowledge to the Pacific area, malaria soon ceased to be a major threat to the Allied troops. The second phase, the search for a better drug, culminated in chloroquine, a safer and more effective drug than quinacrine as a suppressive agent and for the treatment of the acute infection. At about the same time, British scientists produced proguanil (Paludrine), a radically new type of compound. The third phase, the development of compounds that would prevent relapses by eradicating the tissue forms of the malaria parasite, yielded primaquine, which has proved to be successful in the radical cure of the disease.

Chapter 2 reviews the basic features of

the biology of malarial infection and the chemical considerations that have led to the development of the varous antimalarial drugs.

Chapter 3 details the properties of the important antimalarial drugs, including methods for their estimation, their fate and physiological disposition in the body, their toxicity, and their effects on the various forms that comprise the life cycle of the malaria parasite. The information is up to date; it includes studies on the recently developed and extremely potent drug pyrimethamine (Daraprim). It is shown how chlorguanil and perhaps pyrimethamine represent an important chemotherapeutic advance because, in addition to curing acute attacks by affecting the asexual blood forms, they are lethal to the preerythrocytic forms of certain plasmodia and are therefore true causal prophylactics. In addition, these compounds exert a unique sterilizing effect on the sexual forms in blood (gametocytes), making them noninfectious to mosquitoes.

Chapter 4 describes the phenomenon of acquired drug resistance, which is rare for quinine, quinacrine, and chloroquine but which threatens to compromise the potential advantages of proguanil and pyrimethamine. Various theories concerning the development of resistance to these drugs are presented.

Chapter 5 outlines the clinical usages of the compounds. This valuable chapter presents the major principles and objectives of malarial therapy—prophylaxis, treatment of acute attack, and radical cure—and describes the role of each drug in therapy.

This volume is recommended for the physician rather than for the pharmacologist or biochemist because its emphasis is on the effect of drugs on the malaria parasite in its various forms rather than on basic pharmacological or biochemical considerations.

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New Books

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Mass-Transfer Operations. Robert E. Treybal. McGraw-Hill, New York, 1955. 666 pp. $9.50.

Physics of Fibres. An introductory survey. H. J. Woods. Inst. of Physics, London, 1955. 100 pp. 30s.

The Flood and Noah's Ark. Studies in Biblical Archaeology No. 1. André Parrot. Trans. by Edwin Hudson. Philosophical Library, New York, 1955. 76 pp. $2.75.

Humidity. H. L. Penman. Inst. of Physics, London, 1955. 71 pp. Paper, 5s.

Errors of Observation and Their Treatment. J. Topping. Inst. of Physics, London, 1955. 119 pp. Paper, 5s.

Handbook of Tropical Aquarium Fishes. Herbert R. Axelrod and Leonard P. Schultz. McGraw-Hill, New York, 1955. 719 pp. $10.

The Illustrated Reference on Cacti and Other Succulents. Edgar Lamb. Pitman, New York, 1955. 311 pp. $10.

Control of Nuclear Reactors and Power Plants. M. A. Schultz. McGraw-Hill, New York, 1955. 313 pp. $7.50.

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