Book Reviews

BIOLOGY OF THE SKIN AND HAIR GROWTH, edited by A. G. Lyne and B. F. Short. American Elsevier Publishing Company, Inc., New York. 1965. 806 pages, illustrated and indexed. Price $14.50.

This book is not, as the title implies, a text on the biology of the skin and hair but is rather a compendium of 46 papers which were presented at a symposium sponsored by the Australian Academy of Science at Canberra, Australia, in 1964. The collection includes: Thirteen papers dealing with assorted biological aspects of animal and human skin ranging from a short review on "Some Unresolved Problems in the Biology of Skin" by R. E. Billingham and W. K. Silvers to "Integumentary Modifications of North American Desert Rodents" by W. B. Quay; six papers on feather studies; and 27 papers relating mainly to wool and other types of animal hair. Considering the locale of the conference, it is not surprising to find that approximately two-thirds of the papers presented are concerned with topics of prime interest to scientists in the sheep growing and wool industries.

Although each of the papers (chapters) is well written by renowned experts in their respective fields, the collection as a whole is unwieldly and lacks continuity because of the wide range of unrelated topics.

Unfortunately, it has become the vogue during the past decade for sponsors of miscellaneous symposia, seminars, and conferences to publish the proceedings of such meetings immediately in book form. This is indeed a disservice both to the authors and to the scientific community since such papers rarely reach as wide a readership as would be the case if published in one of the well-known scientific journals. What is more serious is the fact that the contents of such texts are rarely abstracted and may be missed entirely by workers in allied fields. The excellent chapters on "Soluble Prekeratin" by A. G. Matoltsy, "An Approach to the Investigation of Protein Biosynthesis in Hair Follicles" by G. E. Rogers and R. M. Clarke, "Current State of Pigment Research" by G. Szabó, and "Replacement Kinetics of Integumental Epithelia" by E. J. Van Scott are

examples of such important papers which may go unnoticed by interested workers.

Many of the authors are recognized authorities in their field and are undoubtedly invited to present their work at many such conferences. It is, therefore, not surprising to find that Chapter 15, "An Electronmicroscopic Study of Genetic Errors in Keratinization in Man" by G. F. Wilgram, J. B. Caulfield, and E. B. Madgic, is practically an exact duplication of their recently published work, "A Possible Role of the Desmosome in the Process of Keratinization," which appeared in *The Epidermis* (edited by W. Montagna and W. C. Lobitz, Jr., The Academic Press, New York, 1964; pp. 275–301).

The book is remarkably free of errors and is printed on an excellent grade of white glossy stock; it is profusely illustrated with magnificent graphs, charts, and high quality photomicrographs and electronmicrographs. The papers are well documented with references, and the index is complete and of great value. While this book will make a worthwhile addition to a reference library, it is doubtful that most of the highly specialized papers, such as "Tissue Interactions in the Morphogenesis of the Feather" by M. E. Rawles, "The Structure and Development of the Squamate Epidermis" by P. F. A. Maderson, "The Hair Cycle in the Chinchilla" by A. G. Lyne, or "Hair Growth and Moulting in the Southern Elephant Seal" by J. K. Ling, would be of widespread interest to the cosmetic chemist.—CHARLES FOX—Warner-Lambert Research Institute.

CATALYTIC HYDROGENATION by Robert L. Augustine. Marcel Dekker, Inc., New York. 1965. 118 pages, indexed. Price $8.75.

The author states in the introduction that this book is intended to "serve as a digest of the literature pertaining to the synthetic applications of catalytic hydrogenation and that by its use the organic chemist, whether graduate student, technician, or experienced worker, will be able to determine easily and quickly the proper conditions to use for a given hydrogenation." As one reads the book it becomes obvious that the author fully accomplished his task and supplied the organic chemist with a factual, concise and lucid presentation of the various aspects of hydrogenation. In every chapter the author attacks the subject without lengthy introductions; mechanistic implications are omitted and details kept to a minimum by referring the reader to the original articles.

The book is divided into six chapters, each one provided with its own list of references; they include articles published in 1964.

Chapter 2 covers laboratory apparatus and techniques. It deals with various types of high-pressure, low-pressure and atmospheric-pressure equipment; the last category includes micro-hydrogenators and

techniques for hydrogenations on chromatography-paper.

Chapter 3 is devoted to catalysts and reaction conditions. After reviewing the various catalyst-systems used in hydrogenations, the author examines the effect of temperature, pressure, solvents and quantity of catalysts on reaction rate and selectivity.

Of particular interest to the organic chemist are chapters 4 and 5, which cover hydrogenations of functional groups. Chapter 4 deals with hydrogenation of olefins, acetylenes and aromatic compounds, while Chapter 5 is devoted to hydrogenation of aldehydes and ketones, carboxylic acids and derivatives, nitro groups, nitroso compounds, azides, nitriles, oximes, amines, imines and heterocycles. In a condensed form the author examines the factors involved in the hydrogenation of various functional groups, such as catalyst selectivity, stereochemistry, etc. The reactions are very well illustrated with chemical formulation.

Chapter 6 deals with hydrogenolysis of organic compounds. The pattern is the same as in chapters 4 and 5.

The book closes with four appendices describing in detail the preparation of various hydrogenation catalysts.

The organic chemist will find much use for this book. It eliminates the need for a preliminary literature survey and contains very helpful technical and chemical information.—KALMEN MOTIUK—American Cholesterol Products, Inc.

PARTICLE SIZE, by Richard D. Cadle. Reinhold Publishing Corporation, New York, New York. 1965. 319 pages, illustrated and indexed. Price $16.50.

This book deals primarily with a discussion of particles—liquid or solid—suspended in a gaseous medium. Although the book is divided into six chapters, the book actually contains only two sections, one on theory and one on practice. As is customary in books on particles—and a must in a book on particle size—much of the theoretical portion is devoted to size distribution and distribution functions. The book also considers in some detail theories of light scattering and methods for the determination of particle size, sedimentation, and related physical measurements.

Of greater interest to practicing cosmetic chemists are the chapters on application. Thus, Chapter III—Physiological Action—should be of interest to the cosmetic formulator and the plant supervisor who is responsible for the safety of employees. The last chapter of this volume deals with the importance of particle size in fine particle technology and discusses—among other subjects—industrial problems of the paint and pigment industry and of the aerosol industry, subjects of immediate interest to cosmetic chemists.

Over-all, this book is strong in theory (about 150 pages); the practical emphasis is placed on air pollution and the production of clean air

(about 100 pages). On the other hand, the portion devoted to the industrial application of particle technology appears short and almost superficial; still, this section touches on many important practical aspects. A typical example is the (too) brief paragraph on the control of particle size of therapeutic inhalation aerosols. Thus, the author states that the particles should be as small as can reasonably be obtained from a pressure package. On the other hand in the chapter on physiological action, the author correctly describes how the ratio of particles inhaled to particles exhaled depends on their size and that particles of different size are deposited in different portions of the respiratory system. It is fairly well established that—depending upon the physiological action desired—there does indeed exist an optimum particle size for therapeutic inhalation aerosols which is of the order of 1–3 micra. Admittedly, recognition of problems and raising of questions in a book of this type is proper; but this reviewer feels that the author has on occasion failed to state clearly those few answers that are available.—M. M. RIEGER—Warner-Lambert Research Institute.