independently on account of their great significance. This chapter contains, besides the discussion of general methods, a special part too, dealing with the synthesis and description of characteristic properties and reactions of all amino acids found in nature. This volume, which is especially indispensable for the biochemist, contains an index of approximately 100 pages. The literature is covered up to the middle of 1957 and partly up to the beginning of 1958.

F. F. NORD, New York, New York

The Biology of Hair Growth. Edited by WILLIAM MONTAGNA and RICHARD A. ELLIS, Arnold Biological Laboratory, Brown University, Providence, Rhode Island. Academic Press Inc., New York, N. Y., 1958. xxii + 520 pp. Price $15.00.

On August 7–9, 1957, a conference on the biology of hair growth sponsored by the British Society for Research on Ageing was held at the Royal College of Surgeons in London under the skillful chairmanship of the senior editor of this volume. At this conference a group of expert scientists with widely varying professional interests and backgrounds met and presented a brilliant series of papers focusing attention on manifold biological problems connected with hair growth. These papers, in remarkably well integrated and edited form and with abundant bibliographic references, mostly comprise this book. The piliary system, as noted by S. Rothman in his introductory remarks, can be viewed as a perfect microcosmic structure where basic research coordinating morphology and structure can particularly flourish. Furthermore, as emphasized by W. Montagna, hair follicles are exciting organs where biological phenomena such as cyclical growth, differentiation, and induction are repeatedly and accessibly demonstrated with each hair generation. This book abundantly points up the truth of these statements.

The material presented centers on the latest research accomplishments (many here published for the first time) as viewed against the broad background of basic knowledge in each particular area under scrutiny.

Chapters pertaining to hair follicles cover: embryology (H. Pinkus), regional frequency and distribution in human skin (G. Szabo), anatomy (W. Montagna and E. J. Van Scott), histochemistry (O. Braun-Falco), mitotic activity (W. S. Bullough and E. B. Laurence), vascularity and patterns of growth (A. Durward and K. M. Rudall), vascularity and innervation (W. Montagna and R. A. Ellis), and behavior of pigment and epithelial cells (H. B. Chase). Other chapters relate to electron microscopy of keratinized tissues and biosynthesis of fibers (E. H. Mercer), chemistry of keratinization (A. G. Matoltsy), electron microscopy of human melanocytes and melanin granules (N. A. Barnicott and M. S. C. Birbeck), nature of hair pigment (T. B. Fitzpatrick, P. Brunet, and A. Kukita), response of hair roots to chemical and physical influences (E. J. Van Scott), hair neogenesis (R. E. Billingham), physical factors influencing hair growth (H. B. Chase), nutritional factors influencing hair and wool growth (M. L. Ryder), effect of hormonal states on growth of hair in rats (M. P. Mohn), age, sex, and genetic factors in regulation of hair growth (J. B. Hamilton), and aging of the human male scalp (R. A. Ellis). Finally, in a concluding chapter W. Montagna succinctly summarizes the entire volume.

This is a fascinating book which not only contains a great wealth of new information essential for those engaged in work on cutaneous biology, but also provides the general scientist reader with a fine demonstration of the diversity and beauty of modern biological research.

ALLAN L. LORINCZ, Chicago, Illinois