Book Reviews

The Structure and Function of Skin. William Montagna. Academic Press, New York, 1956. 356 pp. Illus. $8.80.

In a relatively few, beautifully illustrated pages, William Montagna systematically describes the microscopic, submicroscopic, and histochemical anatomy of the many structures in the most extensive and multipotent organ in the body—the skin. This book presents an unusual three-dimensional view of the structure, and adds a fourth dimension of function, of the cutaneous system. A blending of biological and physiological information with detail on anatomy keeps the monograph from being merely a dry, reference volume.

The author's common-sense approach to the problem of excess terminology is seen in his proposal to retain the term *melanoblast* for both the immature and the more mature types of pigment-forming cells. He presents an unusually lucid comparison of melanoblasts and clear cells of Langerhans.

There is also a keen analysis of the secretion granules in apocrine sweat glands, in which the author questions the acceptance of this phenomenon as the sole index of secretory activity.

The text includes an excellent chapter on the terminology and architecture of the hair follicle and an analysis of its pattern of growth. Montagna emphasizes that it is still not known whether increase in vascularity of the follicular capillary system is a stimulus that causes resting follicles to become active or whether it is a response to a stimulus that originates within the follicle.

The author points out that, while seborrhea usually accompanies acne vulgaris, the sebaceous gland is only one of the elements of the cutaneous system and that the latter functions as a unit. The pathogenesis of acne may, therefore, involve dysfunction of the entire skin rather than overactivity of only one component.

Montagna, whose investigative acumen I appreciated when I functioned as executive secretary of the National Research Council's advisory group in the field of dermatology, is a member of the Subcommittee on the Cutaneous System of the National Academy of Sciences–National Research Council and has made important contributions to knowledge of the functional anatomy of the skin and its appendages. In Chapter VIII, entitled "Reflections," the author modestly puts his own philosophic interpretations last. I recommend that these be read upon beginning the volume; they are very worth while and add to the enjoyment of the text.

The book will be found highly interesting, not only by anatomists, histologists, and dermatologists, but also by pathologists, physiologists, biochemists, research workers, and all who are intrigued by the basic science of medicine.

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Pilot Plant Techniques of Submerged Fermentation. Special English edition of *Rendiconti Istituto Superiore di Sanita,* vol. 17. Fondazione Emanuele Paterno Viale Regina Elena, Rome, 1954 (distributed by Interscience, New York). x + 243 pp. Illus. Paper, $8.10.

This book is the first of a series of English editions of the *Journal of the Istituto Superiore Di Sanita* of Rome. It consists of papers originally published in Italian and covers much of the work on submerged fermentation equipment and techniques carried out in the International Research Center for Chemical Microbiology under the direction of E. B. Chain.

The first paper is a continuation of the excellent and complete studies of oxygen transfer which have been made under Chain's direction. The paper includes aeration studies in shake flasks, 10-liter, 50-liter, 130-liter, 200-liter, and 12,000-liter fermentors. In addition to the usual sulfite method for determination of oxygen transfer, a method using the rotating platinum electrode is described.

About one-half of the book is devoted to papers describing the design and operation of the equipment used at the institute for the submerged culture of aerobic organisms. This portion of the book will be of interest primarily to engineers and persons in charge of pilot-plant and production equipment. Such persons will benefit greatly from reading these chapters. This series of papers is written and illustrated in such detail that it should be possible for one completely unskilled in the operation of a submerged fermentation pilot plant to reproduce and operate such a pilot plant. Several new and novel techniques are included—for example, the bottom entering "compensated" stuffing box in which a portion of the stuffing box is completely submerged in the fermenting medium.

Several unsafe acts, at least by American standards, are described. It would be unthinkable in the United States to apply 0.5 atmosphere to an ordinary round-bottom flask, even though the flask is "wrapped in a towel to protect the operator against the danger of an explosion. . . ."

In addition to the aforementioned papers, two others are included in this section; one is a paper describing a rotary shaker suspended on steel balls, and the other is a study of methods used for the evaluation of antifoam preparations.

The paper on the study of the effect of mechanical agitation on the morphology of *Penicillium chrysogenum* is excellent; although it is near the end of the book, it should be read in conjunction with the paper on aeration. Two papers on heterokaryosis in *Penicillium chrysogenum,* a study of the interrelation of protein and polynucleotide synthesis in *Escherichia coli,* and a description of a new genus of soil fungus, *Romanoa,* are included

The book is paper bound and is rather fragile. The fairly large number of typographic errors do not significantly detract from its readability. This book should prove to be of interest and benefit to anyone interested in the subject of submerged fermentation, whether in research, production, or engineering. It is hoped that the other English editions of the journal of the institute will be forthcoming as planned.

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Gestation. Transactions of the second conference 8–10 Mar. 1955, Princeton, N.J. Claude A. Villee, Ed. Josiah Macy, Jr., Foundation, New York, 1956. 262 pp. 116 illus. $5.

The second conference on gestation was attended by 12 member participants and nine guests. Seven papers were presented as follows: "Self-regulatory functions during gestation and lactation" by Curt P. Richter, "Social reactions of