divided planarian the soul, or mind ("l'âme"), exists after cutting.

Brøndsted is a believer in "neoblasts," allegedly totipotent or pluripotent embryonic reserve cells existing in the parenchyma, which have been reported to migrate to the wound site and form the blastema. He dismisses arguments against neoblasts, despite their highly controversial status. This is unfortunate, because studies completed after his literature survey support the alternative process of dedifferentiation, proliferation, and redifferentiation to form the blastema cells and subsequent differentiated structures. In analogous fashion, he rejects Child's theory of axial physiological gradients in favor of Wolff's inhibitor theory. A somewhat less restricted interpretation of Child's theory, not his experiments, coupled with recently published data makes the theory at least as acceptable as, if not preferable to, Wolff's.

This book presents the questions, the controversies, and the appropriate background for future investigations on regeneration in planaria and the inherent problems of polarity, patterns of differentiation, and stability of phenotype.

STUART J. COWARD
Department of Zoology, University of Georgia, Athens

Mammalian Fibers

Hair Growth. Proceedings of a symposium, Beaverton, Ore., 1967. WILLIAM MONTAGNA and RICHARD L. DOBSON, Eds. Pergamon, New York, 1969. xxii + 586 pp. + plates. $21.50. Oregon Regional Primate Research Center Publication No. 277. Advances in Biology of Skin, vol. 9.

This volume contains the bulk of recent knowledge and thought on control mechanisms affecting hair morphology and hair growth. When compared with other texts on this subject published in recent years it reveals some change in focus of research, particularly extension of interest to several mammalian species including nonhuman primates. Nearly half of its 35 chapters deal with observations on man.

While new knowledge concerning hair growth has been developed during the past decade, this information has failed to yield any evident substantial advance in identification of the physiological influences that regulate the growth of hair in any species—this despite the fact that an array of diverse experimental conditions can markedly affect the ability of a hair follicle to produce hair. Most of these experimentally imposed conditions inhibit rather than stimulate hair growth, a fact reflecting the normal high mitotic and synthetic events within the hair follicle that are operative only under optimum circumstances. This high activity explains the reported finding that nutritional deficiencies provoke distinct morphologic defects in the hair fiber which can be used as a measure of nutritional health.

The hair follicle remains a superb model of growth and differentiation, an isolated system that continually flaunts its normal cyclic patterns of growth, involution, and regeneration. This volume testifies that the follicle has successfully kept secret against the forays of those who have tried to discover them the essential ingredients of its regulatory forces.

EUGENE J. VAN SCOTT
Skin and Cancer Hospital, Temple University, Philadelphia, Pennsylvania

Medical Genetics

Human Afflictions and Chromosomal Aberrations. RAYMOND TURPIN and JÉRÔME LEJEUNE. Translated from the French edition (Paris, 1965). Pergamon, New York, 1969. xii + 392 pp., illus. $21. International Series of Monographs in Pure and Applied Biology: Modern Trends in Physiological Sciences, vol. 32.

This book is a heroic attempt to summarize the explosive field of human cytogenetics, a task the authors accomplish with clarity and by a methodological approach satisfying to the historically oriented scientist.

The historical chapter is informative. In it European work is extensively reviewed and significant contributions are attributed to individuals not widely recognized by English-speaking reviewers. The systematic documentation of progressive observations and theories is continued in the chapter on techniques. This historical approach gives a dateless quality to the book, making it a valuable acquisition for novice and expert alike and partially compensating for the lack of revision since 1965.

The discussion of chromosomal grouping (karyotype) and the variations within measurements of the human somatic complement are the result of extensive research by the authors and present an original topographical method. The quality of reproduction in the illustrations is excellent and allows the reader to evaluate the authors' proposal to identify individual chromosomal pairs numerically, an ability not universally professed by cytogeneticists. This chapter is handicapped by the lack of autoradiographic data and of reference to the standardized nomenclature more recently adopted, however.

The chapter on autosomal anomalies and sex chromosomal errors is reflective of the authors' involvement in medical genetics. For example, the term "mongolism" is deliberately replaced by "trisomy 21." The authors then progressively document the theoretical prediction, by Waardenburg in 1932 and others, of the chromosomal etiology now so widely known. It is of interest that the frequent chromosomal aberrations and numerical anomalies were well known and described by 1965.

The clinical significance of translocations and genetic counseling of families is stressed in addition to the association of deletion markers and aneuploidy frequently found in malignancies. Caution is expressed and appears warranted in expressing finite risk or attributing causal relationships in either case.

The final sections review developmental sexual defects, mosaicism, twin zygosity, and possible chromosomal linkage of biochemical markers.

The great advantages of this book lie in its historical approach, its thoroughness (over 1800 references to 1964), and the personal approach and theories it presents of two founding scientists in medical cytogenetics.

CECIL B. JACOBSON
Department of Obstetrics and Gynecology, George Washington University School of Medicine, Washington, D.C.

Books Received

Advances in Child Development and Behavior. Vol. 4. Lewis P. Lipsett and Hayne W. Reese, Eds. Academic Press, New York, 1969. xiv + 338 pp., illus. $13.50.

Advances in Veterinary Science and Comparative Medicine. Vol. 13. C. A. Brandly and Charles E. Cornelius, Eds. Academic Press, New York, 1969. xviii + 422 pp., illus. $18.50.

Adventures in Discovery. Tom Purdom, Ed. Doubleday, Garden City, N.Y., 1969. x + 182 pp., illus. $4.95.

(Continued on page 1178)