

of digestion, of inner secretion, of the heart, and for each section is given a long but not exhaustive list of references; their compilation, if somewhat uncritical, will undoubtedly be useful, even though similar compilations for most sections are already available elsewhere. To this main chapter of the book, the remainder is merely an introduction. General genetics (Chapter II), dealing e.g., with the nature of the gene, Mendelian inheritance in man, the use of twin studies, draws on non-human as well as human illustrations; analytical procedures, e.g., how to detect linkage in man, are hardly mentioned. In Chapter III, data on normal characters in man are presented in the same way as for the abnormalities. Of those reviewed, blood groups "offer the best possibility for gene analysis" (p. 139), whose object seems apparently to be the tabulation of the number of loci involved; "the quantitative development of the body and its parts is so complicated . . . that the analysis of individual genes is a quite hopeless undertaking. The existence of numerous genes can be fundamentally established only through the analysis of pathological variants" (p. 140), so that the steady accumulation outside Germany of method and theory relating to the genetics of quantitative traits is for the author of no relevance and is not mentioned. But the "physiognomic characters in the region of the eyes, the nose, the mouth, chin and external ear perhaps offer the possibility of genetical analysis;" indeed, the number of loci responsible for these are listed in the same table as the blood group loci! The author appears not fully acquainted with the German literature — there is no mention of the work on, say, familial correlations of uvula size (Schaefer), or on tongue lines (Biegert).

The recent far-reaching recommendations¹ on the place of human genetics in curricula in German Hochschulen demonstrate the increasing interest in the subject there. It is to be hoped that students will be made aware of more modern views on, and problems of, human genetics, than are apparent in Verschuer's book.

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SOME PAPERS ON THE CEREBRAL CORTEX. Edited by Gerhart von Bonin. xxiv + 396 pp. Charles C Thomas, Publisher, Springfield, Illinois, 1960. \$11.50.

This series of papers translated and arranged by von Bonin is most welcome and timely. Our major insight into the evolution of primate behavior and the beginnings of culture has come in recent years through a better understanding of the cerebral cortex.

This publication is most useful as a historic review of studies concerned with the cerebral cortex. Selected writings of many outstanding workers as Baillarger, Broca, Flourens, Gall, Leyton, and Sherrington, to name a few, are included. The selected works, including translations from French and German, represent the writings of 12 investigators. This historic survey thus includes writings from a critical period of anatomical and physiological investigation, i.e., late 1800's and early 1900's.

von Bonin's introduction stresses the approaches utilized by these workers. A trend can be seen by the early interest in the anatomical cyto-architecture of the cortex followed by a shift in emphasis to the electrophysiological approaches and the more recent investigations into cellular physiology. It is emphasized, by a word of caution, that although the latter approach is promising in understanding cortical function, the former approaches should be realistically considered in an understanding of this vital anatomical system.

This type of historic survey should be most useful to physical anthropologists and anatomists. It allows one to appreciate the present information available on the basic structural and functional features responsible for general primate and human behavior. One can sense, in these writings, the struggle toward a better understanding of the central nervous system. The papers from the late 1800's are excellent reviews of gross and microscopic anatomy, and of physiological considerations of this tissue. Later papers point

¹ Empfehlungen des Wissenschaftsrates zum Ausbau der wissenschaftlichen Einrichtungen, Teil I, Wissenschaftliche Hochschulen. Verlag I.C.B. Mohr, Tübingen, 1960.

out the historic awareness of motor-sensory areas involved in tissue adjacent to the fissure of Rolando. Likewise, that there are definable cellular areas responsible for the motor-sensory stimuli of specific somatic regions of primates and man can be seen to reveal themselves in the research of the early 1900's. These observations plus the demonstration of Broca's speech areas on the lateral aspect of the cerebrum and the visual areas of the occipital lobe involve only a fraction of the total cortical surface. The accumulative data from the above studies has been basic to the realization that a large part of the cerebral cortex, especially the frontal lobe, is devoted to neurological connections generally termed "association areas."

The historic perspective into the consideration of the cerebral cortex that this publication allows will serve as a firm basis for those interested in, and teaching, the evolutionary trends of the central nervous system of hominids and the anatomical and behavioral differences of contemporary primates.

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ANOMALIES, MUTILATIONS ET TUMEURS DES DENTS HUMAINES. By H. Brabant, L. Klees, and R. J. Werelds. First edition, 459 pages, 328 figures. Bibliographies following each chapter. Index. Editions Julien Prelat, Paris. Sciences et Lettres, Liege, 1958.

Brabant, Klees and Werelds have published in a paper back medium a very comprehensive and well-documented volume dealing with anomalies of the human dentition.

This is perhaps the most complete assemblage and discussion of dental anomalies that is available at the present time. The chapters reflect the authors' classification of anomalies which is the subject of discussion in the introductory pages. Brabant and his colleagues do not attempt to use the material as background to promote a particular evolutionary theory, but

are rather quite factual and objective in their treatment of anomalies.

Chapters deal separately with the problems of volume (size), of form, of number, of eruption problems, of location and position, of structure and color and of mutilations. There is a final chapter on dental tumors. Each section is adequately and clearly illustrated.

Eighty pages are devoted to anomalies of form. The authors begin by considering the general evolutionary aspects of tooth morphology with reference back into the fossil records. One of the first discussions is relative to taurodontism with a discussion of the Krapina specimens and examples of occurrence of this trait in modern populations. Coalescence, fusion, gemination and concrescence of teeth are treated more as developmental phenomena than genetic. Some very interesting and surprising cases are illustrated in the section, some involving the stable teeth which would not be expected according to theories of dental morphology. Special attention is also devoted to various ankyloses problems and the histologic and pathologic aspects. Anomalies of form relating to genetic structures such as the shovel-shaped characteristics on the lingual surface of incisor teeth are analyzed and discussed on the basis of various occurrences in different populations. The study is not confined entirely to the crowns but also includes much material relating to the root systems.

One of the outstanding features of the book is the reflection of the great background of knowledge that the authors had not only of the outward structure that they were describing, but also of the microstructure, the histology and pathology in the background. There seems to be no lack of information and acquaintance with the literature on each subject discussed. The histologic treatment of the subject matter enhances the publication and places it on the level of a first class text.

The volume is written in French, but this should not deter the non-French reading student from consulting the book for its excellent bibliographies and materials.

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