The Biochemistry and Physiology of Bone. Edited by GEOFFREY H. BOURNE. (Pp. 875; illustrated. \$20.00.) New York: Academic Press Inc. 1956.

This excellent and comprehensive account of the biochemistry and physiology of bone by 28 contributors clearly succeeds in the avowed intention of providing a complete survey of the additional knowledge gained as the result of the research in almost all aspects of bone of the last quarter of a century.

The subjects covered include full accounts of each of the basic constituents of bone, ground substance, collagen, and mineral, as well as detailed studies of osteogenesis and biochemistry. The chapter on radiation effects is a valuable feature, and considerable space in this book has been rightly devoted to the effects of the ductless glands on bone and bone growth. The title does not, however, do justice to the wide scope of the contents; of necessity there is constant reference to disease in almost all chapters, and the chapters on vitamin C and vitamin D are much concerned with pathology, while that on pathological calcification is one of the longest in the book. This, incidentally, would benefit by sterner editorial pruning. Each chapter has been written by an acknowledged authority in his field who has made original contributions to the literature, and an idea of the thoroughness with which the survey has been carried out is well illustrated by the fact that one whole chapter is devoted to the osteoblast and another to the osteoclast. That these two chapters are written by different contributors certainly shows that this is, indeed, the age of specialism. As the Editor, Geoffrey Bourne, states in the preface, some overlapping between chapters is inevitable. This has not led to serious discrepancy or confusion, but a minor contradiction is found between the statement in chapter 15, p. 470, that fracture callus is formed by the differentiation of granulation tissue, and the statement in chapter 16, p. 482, that the invasion of blood clot by granulation tissue has nothing to do with the formation of fracture callus.

A presumed error of diction is found in chapter 4, where we find (p. 100) the statement . . . 'the existence of these polysaccharides in both tissues is not surprising in view of the *formation of bone by calcification of cartilage*' (reviewer's italics).

The illustrations are, in the main, very good, but some photomicrographs suffer from the paucity of space allotted to them.

References to the literature are numerous and up to date, and are found at the end of each chapter; and there is a complete author index as well as a subject index at the end of the book.

The paediatrician will find of especial interest the chapters on vitamin C and vitamin D, on the effects of radiation, of hormones on pituitary and skeletal development, and the chemistry of calcification.

This book can be confidently recommended to both research workers and to clinicians, and to all teachers of medical students pre-clinical and clinical. The pathologist should certainly possess this book.

The Editor and his collaborators are to be congratulated on having succeeded in making a major contribution to the world literature on bone.

The reviewer is relieved to find after the exhaustive discussions on the roles of the osteoblast and osteoclast that he may continue to believe that osteoblasts form bone and osteoclasts remove bone; and to find also that nothing is adduced in this book to refute the basic teaching of S. L. Baker that pathological changes in bone structure can be mediated only through the operation of the two opposed processes of osteoblastic deposition and osteoclastic resorption.

Das Skelett des Kindes. By W. SWOBODA. (Pp. xii+184; 199 figures. DM. 48.—) Stuttgart: Georg Thieme. 1956.

This new monograph deals with the skeleton of the child, its development and diseases, congenital and acquired.

The first chapter describes briefly the clinical and radiological methods of examination of the skeleton; the second chapter gives a fuller account of radiological diagnosis of skeletal abnormalities. Then follow chapters on developmental, endocrine, nutritional, metabolic and inflammatory conditions and those affecting the reticulo-endothelial system. The last two chapters contain a much briefer account of neoplastic and traumatic conditions.

The writer does not confine himself to describing the skeletal abnormalities but makes brief reference also to aetiology, symptoms, diagnosis and therapy. It is indeed astonishing how much valuable information he has managed to compress into 165 pages.

Adequate reference is made to important English and American papers, though naturally the continental literature is quoted more extensively. Unlike some medical writing in that language, Dr. Swoboda's German is easy to read, even for those whose knowledge of German is not great.

The book is beautifully produced and the quality of the numerous reproductions of radiographs is high.

Though it is primarily written for paediatricians and radiologists, who will, no doubt, value it highly, this book has something to offer to the endocrinologist and orthopaedic surgeon. To the paediatric radiologist it may well become a standard work of reference.

Die Pathologie des Kindlichen Pankreas (Pathology of the Infantile Pancreas). By GERHARD SEIFERT. (Pp. x+151; 109 figures, 21 in colour. DM. 52.—) Leipzig: Georg Thieme. 1956.

In 1924 Nakamura published an anatomical study of the infantile pancreas based on less than 100 cases from the department of Ghon, and no example of fibrocystic disease was included in this series. Since then the interest of paediatricians and pathologists has been concentrated on this disorder and several monographs have been published, usually attempting to support one or the other view on the pathogenesis. The great amount of work which has been done in recent years on the morphological and functional pathology of the infantile pancreas makes Dr. Seifert's monograph a

welcome addition to the literature. The book is based on the study of the pancreas in 587 necropsies and an almost complete survey of the literature. The chapters on the developmental anatomy and postnatal changes are comprehensive and the figures given for α and β cells in the islands of Langerhans particularly valuable. The physiology is treated rather briefly and the difference in nervous stimulation of the pancreas on one hand and the salivary glands on the other hand is not mentioned. Dysgenetic cysts (Wegelin's dysontogenetic cysts) are well illustrated by figures 28 and 29 but figure 27 is more suggestive of fibrocystic dystrophy. Lipomatous atrophy of the pancreas is clearly separated from developmental abnormalities but the atrophy with replacement lipomatosis in fibrocystic disease is not mentioned. The statement that in pancreatic atrophy with lipomatosis there are no changes in other organs will be scarcely accepted by the majority of pathologists. There is an interesting discussion of pancreatic lipomatosis in experimental Coxsackie-virus infection and the observation in a 13½-month-old infant is reported, which suggests such an infection. The discussion of fibrocystic disease is based on 16 cases only and there is unfortunately no separate discussion of the three types described by D. Andersen, particularly of the changes in other organs. Alterations in the pancreatic secretion are well described and together with those observed in other diseases, including the pancreatosis of Bagenstoss, they are discussed under the heading 'dyschylia'. Among the 16 cases of fibrocystic disease nine had a dyschylia of salivary glands, a statement which one can accept only if minor degrees, such as are common to many other diseases, are included. The absence of dystrophy or atrophy of secretory tissue in such dyschylia of salivary glands is not mentioned. There follows a good description of acute necrosis, acute and chronic pancreatitis and pancreatic changes in a variety of diseases and a very good discussion of the sialoedema. In the description of chronic pancreatitis with fibrosis one may wonder whether some were not examples of fibrocystic dystrophy. An example of lipidosis with involvement of the pancreas is described which appears to be a case of Schüller-Christian's disease, but in which surprisingly the Smith-Dietrich reaction is reported as positive.

The paper, print and illustrations are excellent, the list of references exhaustive and, so far as the reviewer has noticed, printing errors are only exceptional.

Die Pflege des Gesunden und des Kranken Kindes, 5th ed. By W. CATEL. (Pp. xxiv+655; 336 figures. DM 42.-) Stuttgart: Georg Thieme. 1956.

The Care of Healthy and Sick Children by Professor Catel is far more than its title indicates; it is in effect an introduction to physiology and medicine for nurses. The fifth edition has been expanded by five pages only to deal with advances of the past few years. At the same time some of the illustrations have been improved and the book will be a source of much pleasure as well as instruction to any German-reading nurse.

The Pathogenesis of Poliomyelitis. By HAROLD K. FABER. (Pp. xvi + 157; 16 figures. 36s.) Oxford: Blackwell Scientific Publications. 1955.

The special function of this well-produced and readable monograph is to call attention to gaps which still exist in our knowledge of the pathogenesis of poliomyelitis, especially the pathways of infection. The widespread acceptance of this disease as an infection primarily of the alimentary tract which only rarely involves the central nervous system is due mainly to the accumulation of evidence within recent years following on the demonstration of viraemia in man in the early stages of infection and in cynomolgus monkeys and chimpanzees after feeding virus. The author analyses the data in favour of this point of view in great detail and demonstrates that much of it is equally applicable to a strictly neurotropic conception of the disease. In the course of investigations extending over the past 15 years, the author and his associates have made a long series of histological studies of the peripheral ganglia in experimental animals and have come to the conclusion that the peripheral nervous system of the respiratory and alimentary tracts is the principal route whereby the virus gains access to the central nervous system. He has found that lesions in the peripheral ganglia precede the appearance of virus in the alimentary tract and viraemia, and believes that invasion of the central nervous system is ordinarily by strict axonal pathways. In abortive infections, the disease process probably does not ascend beyond the peripheral ganglia. These investigations are supplemented by detailed investigation of the histological changes in the brain and spinal cord after varying types of peripheral exposure, including direct application of virus to the central end of the divided maxillary branch of the trigeminal nerve, tonsillectomy immediately following application of virus to the tonsillo-pharyngeal region, and simple feeding. It would appear from these researches that axonal transmission is of basic importance in central infection and the results show a strict anatomical localization in the brainstem following such procedures. Many of the early symptoms of the disease in man can be interpreted as due to early involvement of the brain stem by way of the peripheral nerve roots of the region and not as the result of systemic infection of extraneural tissue.

The appearance of virus in the intestinal tract is considered to be due to centrifugal spread along axons towards the alimentary surface, and viraemia to passive reabsorption of virus by way of the portal capillaries of the intestine and thereafter into the general circulation. When viraemia is sufficiently intense, breakdown of the blood neuron barrier of the central nervous system is presumed to occur, resulting in typical lesions in susceptible areas.

In his penultimate chapter, the author reviews the problem of immunization, and as a result of his own experiments and those of other workers in this controversial field, is of the opinion that satisfactory immunity will only be obtained by the use of vaccines composed of attenuated immunogenic strains of virus.

The various sections are illustrated by excellent photomicrographs and lucid diagrams: the bibliography is comprehensive without being overwhelming.