CANCERS AND OTHER TUMORS OF THE BREAST. RESEARCHES SHOWING THEIR TRUE SEAT AND CAUSE. By CHARLES CREIGHTON, M.D., Sometime Demonstrator of Anatomy, Cambridge University. Author of *Contributions to the Physiology and Pathology of the Breast*. With twenty-four lithographic plates. London: Williams & Norgate, 1902.

THIS is really a remarkable and very important work upon the breast. It has for its basis the discovery, for which its author claims priority, that there are tumors of the mammary region which arise not from the breast proper, but from glandular structures having the character of the axillary sweat glands, which he has shown to be present in a surprising number of breasts, while in all portions of these structures he finds that all sorts and varieties of mammary tumors originate, the true mammary structure often remaining passive, or in many breasts being obsolete. A large part of the work is given up to embryological considerations, for which the English training seems to better fit men than that of any other country. In fact, the whole work is a beautiful illustration of the application to human pathology of an extensive knowledge of comparative anatomy and pathology.

The author begins by describing the excretory skin glands of the vertebrates, taking as a prominent illustration the so-called thumb gland of the frog, which seems to be a true sexual organ, found only in the male frog, and becoming large during the breeding season. It has an excretion which looks milky, but is not fatty, and is supposed to contain some albuminous material like that found in certain poison glands. Coming to the mammals, he describes the peculiar glands of the monotremes, which likewise have peculiar sexual glands as well as mammary organs.

Another very remarkable skin gland is met with on the back of the hippopotamus, and gives forth the so-called bloody sweat of that animal. its excretion being of a port-wine color. Next, the larger sweat glands of man are described. For instance, those large ones in the armpit of certain women, which may form a cluster even as large as a hen's egg, and which yield a somewhat copious secretion. Glands of this kind are also found in the loose tissue about the nipple as well as in the scrotum and labia. Attention is called to the fact that sweating from the breasts may be profuse. He traces also an analogy between the malignant tumors of these and those of the large sweat glands seen, for instance, in chimney-sweeper's cancer and cases occurring upon the lip.

Creighton also believes that the sebaceous glands about the nipple may of themselves secrete a milk-like fluid if not typical milk. The occurrence of tubular glands with the distiactive structure of sweat glands throughout the human breast, as well in the centre of the organ as around its margin, is insisted upon throughout the book, and in these anomalous sweat glands its author finds the explanation for many of the tumors met with in this locality. In fact, he traces the majority of new growths rather to these anomalous structures than to the proper mammary lobules and ducts. His pages bristle with anatomical facts culled from nearly all the vertebrates, proving this possibility and the frequency of its occurrence. He shows also how many of these lesions are to be regarded as reversions to the primitive type of mammary organ; sometimes so slight as to be easily overlooked, at other times, especially at the menopause, predominant. The parts that thus revert do not

undergo the same atrophy as tha true mammary portions do at the period of menopause, and so he would regard tha so-called involution cysts, which are usually taken for dilatations of tha milk-ducts, as real expansions of the tubular glands already allnded to. So with the fibromatous nodules which are so frequently found in the breast, the author apparently demonstrates that tha glandular elements around which they arise are not those of the mammary atructnre, hut ara either the tubular glands of primitive sweat-gland type or rndiments of mammary lobules which have never developed into a typical structure.

Coming now to the malignant diseases of the breast, it is stated that although sarcoma has a well-marked clinical individuality, it is usually the sequel of some earlier morbid condition rather than an original disease, and has a tube-gland element which is essential to its existence. The claim is made that many cases of sarcoma are in effect the eventual acute stage of some chronic tumor, one or more fibromata of years' duration being suddenly excited hy menopause or injury, and rapidly becoming sarcomatous. The complete theory of these tumors is believed to he that original tubular glands become blocked hy their own epithelium and so disturbed that a compensatory activity takes placa in the vascular stroma. Whila the author does not introduce the modern term, perithelioms, it would appear from his description that many of thesa cases ara of this type.

Chapters IX. and X. ara devoted again to comparative pathology, especially of tumor formations in the domestic animals, from which many most instructive lessons are deduced.

Chapter XI. is devoted to scirrhus. In this chapter, as in that on sarcoma, tha nuthor shows a rather curious hlending of the old and new notioas, there heing a tendency to revert to the old clinical distinctions without a clear-cut difference founded upon histology. In fact, ha alludes to the contrast between tha two diseases, "or hetween soft and hard cancer of tha breast," as being very marked, and even facilitating diagnosis. It is, however, dua to him to say that he lays no littla stress on the actual complexities of these cases. The final chapter is devoted to a summary of the pathology and etiology of breast tumors. He sums it up to this effect, that the proper mammary structure, which is subject to periodical involutions and climacteric atrophy, has really no part in the morbid growtha of the hreast, hut that these arise from certain not unusual anomalies of development which are not suhject to periodical changes, the most important of which are tuhular glands of tha type of large sweat glands. Thesa anomalies occur in many hreasts, healthy as well as diseased, consequently ha looks for their causes to the avolution of these structures from the primitive glands of the skin, with frequent tendencies to reversion.

From the compnrativa pathologist'a point of view this work is a model. From the standpoint of the modern aurgeon it is unsatisfactory in that there is nowhere the slightest reference to the parasites, which are in all prohnhility tha exciting cnnses of cancerous growths. Such views as those enunciated hy the author are of the greatest importance, as are also the facts which he has marshalled from so many different sources. What is now imperatively needed is a still mora hroad conception of malignant growths which shall furnish ns a treatise in which there shall ha reconciled tha facts from hoth sides in connection with hroad general principles. For tha author'a industry and wide comprehension of com-

parative anatomy and pathology we desire to express our unhounded admiration. We seem, however, to read between the lines that were his knowledge comhined with a large clinical experience, a different, or rather a much hroader, interpretation might he given to certain phenomena which he has descrihed from his restricted point of view. Nevertheless, there is so much that is new and novel in the hook that, after a careful examination, the reviewer still feels that it is a work of the greatest importance, and should he in the hands of every student of the suhject.

R. P.

THE ANATOMY OF THE HUMAN PERITONEUM AND ABDOMINAL CAVITY. Considered from the Standpoint of Development and Comparative Anatomy. By GEORGE S. HUNTINGTON, M.A., M.D., Professor of Anatomy, College of Physicians and Surgeons, Colnmbia University, New York City. Illustrated with 300 full-page plates, containing 582 figures, many in colors. Philadelphia and New York: Lea Brothers & Co., 1903.

THIS superh new work of Dr. Huntington's marks almost a new era in the makiog of medical hooks in this country. Its lavish illustration and its most attractive preseotation will make it a heautiful addition to the lihrary of every student, while its suhject-matter will characterize it as a most important one. It certainly suhstantiates its author's claim that it is intended to emphasize the value of emhryology and comparative anatomy ia elucidatiag the prohlems of human anatomy.

The iatestinal canal is first considered, and attention is called to the fact that it gives origin to two quite different kiads of appendages: those derived by hudding from its hypohlastic epithelium, including those organs which, like the salivary glands, liver, pancreas, and lungs, still retain their origiaal connection with it, as well as those, like the thyroid and thymus, which have lost their primitive conaection with it; aad those which are emhryonic appendages, like the omphalo-mesenteric duct and the allaatois. After this introduction, Part I. is devoted to the anntomy of the peritoaeum and general ahdominal cavity. It is showa how the primitive stomach or foregut is formed hy the passage hetween the hranchial cavity and the midgut, which is within the area supplied hy the vagus; hence the peculinr distrihution of this nerve finds its explanation in this derivation of the stomach. The form of the stomach depends upon the inflaences exerted hy the hahitual amount of food required hy the aaimal, hy its digestihle character, hy the size and shape of the ahdominnl cavity which contains it, hy structural modifications designed to increase the action of the gastric juice on food, and upon its assumption of special functions, like storage of food for suhsequent use or mastication.

The factor which leads to the peculiar arrangement of the intestinal tuhe within the ahdomen is shown to he the rotation which its various portions undergo in order to he suitahly disposed within the limits of a closed sac. Failure of rotation and arrest of development lead occasionally to well-marked nnomalies.

Part II. deals with the anatomy of the peritoneum in the supracolic compartment of the abdomen. One of its most interesting features is