

REVIEWS.

COLUMBIA UNIVERSITY BIOLOGICAL SERIES. Vol. IV. "The Cell in Development and Inheritance." By EDMUND B. WILSON. Second edition, revised and enlarged. New York and London: The Macmillan Co., 1900. Pp. xxi., 483, with 194 figures in the text.

THE importance of the cell theory in the medical sciences has been generally recognized since the appearance of Virchow's *Cellulärpathologie* in 1858. Strange to say, however, medical men have paid extremely little attention to the cellular phenomena until within the last few years, and even now such attention is confined almost exclusively to certain cellular aspects of pathology. In this country, at least, medical education takes almost no account of the normal structure and functions of cells, and yet upon this very basis must rest any thoroughgoing knowledge of the animal body in health and disease. Verworn and Loeb have called attention to the necessity of a knowledge of cellular or general physiology if one is to arrive at any understanding of the fundamental properties of living things, and a similar claim may be made for cellular morphology. In fact, the cell theory of Schleiden and Schwann occupies a position in biology to-day second only to the evolution theory, and in some respects the former is even more fundamental than the latter, since the whole problem as to the mechanism and causes of evolution, inheritance, variation, assimilation, metabolism and irritability can be approached only from the stand-point of the cells.

To be sure, it is not absolutely essential that a physician should be trained in cytology in order to make diagnoses and write prescriptions. The structure or functions of nucleus or cytoplasm are of small concern to the man who is primarily interested in the art of applying to the recognition and cure of disease those principles which are already well established. On the other hand, a knowledge of cytology is indispensable to the medical man who is striving to extend the bounds of his science, and the history of medicine no less than the whole history of human advancement serves to show that no knowledge of fundamental phenomena is useless or without consequence.

The greatest danger in all recent scientific work is the outgrowth of the very principle which has made science most effective, viz., *specialization*. So great are the number of workers, and so rapid is the advance in every science, that it has become impossible for any one man to follow the whole advance of his own science. Louis Agassiz used to say that he pitied the man who would undertake to keep track of zoological literature fifty years after his day. There are few if any such men to-day either in zoölogy, botany, physiology, pathology or related sciences. Men are no longer naturalists, but helminthologists, ophthalmologists, cytologists, etc., and while the result of this specialization

has been such a rapid advance in the knowledge of individual facts as the world has not known before, it has failed to bring forth any such great principles as date from such old masters as Job. Müller, Virchow, Sachs and Darwin.

There is no greater need in modern scientific work than facilities by which workers in any branch of science may in the briefest possible way become acquainted with the general stand of sciences other than their own. This is met to a certain extent by the many excellent *Berichte* and indices which summarize the work of each year in the various sciences; but even these are too extensive and technical for persons outside the particular science in question. Every few years there is need of some general work in each science which shall give in accurate and yet in generally intelligible form the present stand of that science. Fortunately this need is being met by the publication by eminent authorities of text- and reference-books in the various sciences. It is a pleasure to note that in this work, which is often hardsome and thankless, some of the greatest living authorities are engaged.

Professor Wilson's book on the cell, the second edition of which has just appeared, is a work of more than ordinary interest, not only to the cytologist, but to all persons who are interested in any of the biological sciences. It is not the first book in this field, though I think it may be said to be easily the best. Herwig's splendid treatise (*Die Zelle und die Gewebe*, 1893) was really the first general work in the field. Since then have appeared Henneguy's *Leçons sur le Cellule* (1896) and Hübner's *Praxis und Theorie der Zelle- und Befruchtungs Lehre* (1899). Wilson's work is limited, as, indeed, also is Henneguy's and Hübner's, to those cellular phenomena connected with development and inheritance in which at present knowledge is most advanced and interest most intense.

After an extremely suggestive introduction, in which the history of the cell theory and its relation to the evolution theory is discussed, the author, in successive chapters, treats of (1) cell structure, (2) cell division, (3) the germ cells, (4) fertilization, (5) chromatic reduction, (6) cell organization, (7) cell chemistry and cell physiology, (8) cell division and development, (9) theories of inheritance and development, while an excellent glossary, a general literature list and indices of authors and subjects are found at the close of the volume.

To those who are unacquainted with the recent developments of cytology some idea of the extent of work in this field will be conveyed by the statement that 820 papers are cited in this book, most of which have appeared during the past ten years. Almost every topic is taken up from the historical point of view, the present stand of the subject is then presented, followed by a discussion of the problems connected with it which are still unsettled. The whole of this is done with the accuracy and thoroughness of a piece of research; in fact, the work is in many ways a most important contribution to knowledge. For all this, it will prove none the less interesting and intelligible to the general reader who may be unacquainted with the recent developments of the cell theory.

The book is written in a lucid, almost picturesque style, and is so profusely and beautifully illustrated that it will certainly appeal to the general scientific public as well as to those who are more directly concerned with the subjects treated.

E. G. C.

THE PRINCIPLES OF TREATMENT AND THEIR APPLICATION IN PRACTICAL MEDICINE. By J. MITCHELL BAUCE, M.A., M.D., F.R.C.P. Adapted to the United States Pharmacopœia by E. QUIN THORNTON, M.D. Philadelphia and New York: Len Brothers & Co., 1900.

ONE can but wish that a healthy cynic with a sharp wit might have criticism to-day, as Oliver Wendell Holmes did forty years ago in his "Currents and Counter Currents of Medical Science." He might force upon an unwilling band of empirical therapists the conviction that they do not differ widely from those whose teachings are so bitterly scorned, the pupils of him who taught that the itch was all-prevalent, and was to be cured only by taking a minute dose of the hair of the miserable canine that caused the affliction. It is true that the American eagle cannot scream so joyously to-day because of enormous doses, and that forty years ago the stars and stripes could wave more proudly—for three drachms of calomel are rarely given now at a single dose. But while heavy volleys are not often discharged at unfortunate patients, random shots come from many directions, fired with blind trust that they may hit something, since someone else, though he knows not why, has said that he has struck the mark.

The earnest work that has been done on the physiological action of drugs and the wonderful glimpses of rational treatment of infections that the bacteriologists have given us have driven blind empiricism into the background in the minds of thoughtful men, but the activity of those who have interests in proprietary preparations unites with the common eagerness for something new, and the two engulf us in a literature on drugs that is filled with contradictions and counter-assertions based almost exclusively upon the observation of symptoms, while the nature of the disease, its etiology, and its natural course receive little or no consideration. A warm welcome must await all works that meet this current and turn it backward, and Dr. Bruce has met it holdily with pathology as his strong mainstay.

The first part of the book may at first prove disappointing to those whose chief object in reading a work on therapeutics is to learn of new drugs which they may use in the chance of doing some good; but it is this part of the work that is most welcome of all. It meets the subject of therapeutics from a very unusual stand-point—264 pages are devoted to purely general philosophical considerations. The indications for treatment which may be gained from a study of the etiology of diseases are pointed out, and this is followed by a similar consideration of pathological indications, then by a discussion of clinical indications, and this by a valuable chapter on personal factors in their relation to disease. The latter part of this section deals with the question of the need or lack of need of interference in disease, and with the discussion of general means of treatment—food, rest, exercise, nervous influences, and the like. The section is closed with a discussion of the art of rational treatment in theory and in practice, and with a careful consideration of the proper mode of procedure in treating a case. A few of the statements in this last chapter may well be referred to: The first indication is to make a diagnosis of the case as distinguished from the disease, and to be prepared to treat the patient. After making a diagnosis, consider the course which the disease is likely to follow, review deliberately the etiological, pathological and clinical facts of the case, and determine the indications

furnished thereby. After this, one should consider the order in which the indications should be attended to; and we may see, as a guiding star, the italicized statement, "*let well alone.*" The final indication is to prescribe remedies only in a methodical way and with a definite purpose.

This part of the book does not consider the use of individual drugs for special purposes, and to some readers there may seem to be more words than practice in it; but if it were read by medical students before beginning their course in therapeutics, and by many practising physicians, they would be saved from the danger of falling into the slough of profitless empiricism.

The second portion is one of the most rational and practical discussions of the treatment of special diseases in existence, and evidences in all parts the experience of a thoughtful man. The treatment of various diseases is taken up first from the point of etiology and prophylaxis, next in relation to the indications furnished by the pathological alterations probably present, and after this the clinical phenomena are considered in connection with the treatment indicated. All these matters are gone over in their relation to the attendant's first visit. The author then discusses the course which the disease is likely to follow and the indications that may be met with at various periods of its progress. Complications and their management are considered, and treatment during convalescence receives a good deal of space. Finally, at the end of the section on each disease there is given a summary of the management of the case from the beginning to the end, which puts the whole matter at the service of even the busiest man. There are innumerable useful suggestions in this portion of the book. As an example may be mentioned the fact that Dr. Bruce devotes some time to the question as to what life work may be recommended for boys who have acquired heart disease in early life. Other similarly practical points are met with throughout this portion.

In parts the style is somewhat fanciful, as, for instance, in the first half, the description of the battle army of the phagocytes when they advance to meet the micro-organisms of disease, and their retreat when the enemy is present in too great strength; but this adds charm, even though it occasionally sacrifices a little scientific exactness. At times there is perhaps too much attention given to facts which are almost self-evident, but excessive space is only rarely used, and, as a rule, each page may be read with profit.

D. L. E.

THE ANATOMY OF THE BRAIN. By RICHARD H. WHITEHEAD, M.D.
New York, Chicago, Philadelphia: The F. A. Davis Company, 1900.

AMERICAN anatomists, after waiting many years, seem to have become impressed with the idea that works on the anatomy of the nervous system are sadly needed. We had Gordinier's book, later Barker's more extensive work, and now the little volume by Whitehead appears. The last makes few claims. It has been written in the hope of giving to the student an introduction into the mysteries of the structure of the

central nervous system. It is not intended for the trained anatomist. It fulfils its object, provided the student will read it in connection with a dissection of the human brain and an examination of microscopical serial sections, made by himself, if possible; otherwise he will have very confused ideas of what he has studied. Throughout the work the author uses the Latin terms recommended by the German Anatomical Society in connection with those more commonly employed. The statements are sometimes made with a positiveness that may lead the student to believe that no other views than those set forth in this work are held by reliable anatomists. This fault is difficult to avoid, and yet we think that debatable statements should be presented with an acknowledgment of uncertainty.

The first part of the book is devoted to the gross anatomy; the second to the microscopical anatomy, and in the latter more opportunity for a difference of opinion is afforded. Whitehead speaks of the "spinal tract of the trigeminal nerve." Some German anatomists, while acknowledging that this is a correct designation, occasionally refer to the "ascending root" of the fifth nerve, and the student must add to his burdens the knowledge that this "ascending root" is really descending. Whitehead unfortunately calls the mesencephalic root of the fifth nerve the "descending root." As the spinal root is also descending, we must employ either "cerebral" or "mesencephalic" for the superior root. In several places Whitehead speaks of "olive," but as we have a superior, an inferior and accessory olives, each should be properly designated, especially as this book is for students who are not very familiar with the microscopical anatomy of the nervous system. He also speaks of the olive as showing three pieces. Does this mean that the accessory olives are part of the lower olive? He follows the views of many when he says that the dorsal nucleus of the tenth nerve is sensory. This nucleus has been shown by van Gchuchten to contain cells whose axones pass to the periphery of the medulla oblongata, and this, together with other recent evidence, permits us to regard this dorsal nucleus as motor. Whitehead devotes only a few words to the division of the fibres in the cerebral peduncle, and in this way avoids the disputes that have arisen in regard to the crura. The region of the hypothalamus, so difficult to understand, receives little attention, and possibly the student will be thankful for this. We may question the statement that the corpus callosum connects corresponding parts of the two cerebral hemispheres, if by this is meant that it connects only corresponding parts, as the words imply. The description of the caudate nucleus as a gourd-shaped mass is excellent, provided the student has in mind the right kind of gourd. Each half of the body is represented in the cortex of the opposite hemisphere, as Whitehead says, but it is also partially represented in the cortex of the same hemisphere. Anatomical findings and clinical phenomena force this view upon us. The upper and anterior part of the parietal lobe should also be included in the motor area. Whitehead believes that the majority of fibres of the median lemniscus terminate in the optic thalamus; he has many to support him in this view.

It is possible to pick out here and there other slight inaccuracies and debatable statements, but this is not an agreeable task, and gives an unfair impression of the value of the book. One is reminded by Whitehead's book of the early editions of Edinger's lectures, and yet

the two works are very differently constructed. Whitehead's little book may be recommended to the student, but he must not imagine after reading it that he understands all the microscopical anatomy of the central nervous system. He will have, however, a fair knowledge of this anatomy, and will be less liable to make the wild guesses too often indulged in by some who attempt cerebral and spinal localization with little knowledge of the relation of the parts.

W. G. S.

DISEASES OF WOMEN. A Treatise on the Principles and Practice of Gynecology. For Students and Practitioners. By E. C. DUDLEY, A.M., M.D., Professor of Gynecology, Northwestern University Medical School; Gynecologist to St. Luke's Hospital, Chicago, etc. Second edition, revised and enlarged. With 453 illustrations, of which 47 are in colors and 8 full-page plates in colors and monochrome. Pp. 717. Philadelphia and New York: Lea Brothers & Co.

Our prediction with regard to the reception which would be accorded to this admirable work has been verified, as shown by the appearance of a second edition in a little over a year. Although the short time which has elapsed since the appearance of the first edition naturally does not permit the introduction of many new facts, the book has been carefully revised, several chapters and illustrations have been added, and considerable new matter has been interpolated. The most striking feature, "the grouping of subjects, not by the more common regional method, but, so far as possible, from the stand-point of pathological and etiological sequence," has certainly commended itself to medical teachers and students.

Although the former edition was exhaustively reviewed in the JOURNAL, it may not be amiss to call attention again to the salient points of this successful work, which represents the mature experience of one of the ablest of the circle of gynecologists who have sat at the feet of Dr. Emmet. In this iconoclastic age it is characteristic of the author that he has never swerved in his loyalty to his old teacher. The criticism has been made that this attempt to reconcile early teaching with facts established by more modern pathology has in some instances led to embarrassment, especially in the chapter on pelvic cellulitis. Again, the objection has been raised that more attention has been paid to the subject of laceration of the cervix than would seem to be justified in view of the diminished importance now attached to this lesion by many gynecologists. Yet, to be consistent, the author could not have taken a different position with regard to these questions, and since he has shown that he is an original thinker, as well as a loyal follower of his honored leader, he should not be harshly criticised. A second reading of the introductory chapters confirms us in our opinion that they are full of practical hints and timely suggestions. The sections on operative technique are not, as is often the case, mere compilations, but represent the experience of a careful and resourceful surgeon.

In reviewing Part II., on infections and inflammations, we are again

struck with the happy way in which the unities are preserved. This is not a new plan, since it has been followed in some foreign works on gynaecology, but it has not been so skilfully elaborated in any previous American text-book. Whether the difficult subject of inflammation of the uterus has been made clear to the beginner or not is a question. Personally, we have found that the term "chronic metritis" (or "chronic myometritis," as the writer prefers to call it) is often a serious stumbling-block to the student. We hope some day to see both chronic endometritis and metritis described as end-processes rather than as true inflammatory conditions; indeed, we are sufficiently radical to believe that the expression "chronic inflammation" may eventually disappear from our text-books.

We note that in Part III. tumors, tubal pregnancy and malformations are grouped together, although the connection is not clear. We venture the criticism that the union is an artificial one and that Chapters XXXVI. and XXXVII. would appear to better advantage, the former under the head of inflammation of the tubes (which is practically the etiological factor in tubal gestation), and the latter either at the beginning or at the end of the book.

In Part IV. the author is clearly at home. The description of the various plastic operations on the pelvic floor, cervix and urinary tract show the hand of a master. It is no disparagement to the originator of the operation for repair of the lacerated cervix to say that not even in his own book is the subject so lucidly discussed.

The sequence between traumatism and displacements is entirely logical. The latter subject is presented most attractively, and will be especially appreciated by the student. The text and illustrations bearing on the author's operation make this ingenious and useful procedure almost as clear as a demonstration on a living subject. We commend pages 632-638 as a good specimen of Dr. Dudley's terse, lucid style. He handles the pen, as he does the scalpel, without any uncertainty as to the end to be attained.

Apropos of the chapter on massage, we question if this method of treatment will ever become popular in this country, or if it should be taught to students. An expert may clearly recognize the contraindications, but no other should attempt the delicate manipulation necessary to free imprisoned adnexa. When, after the lapse of another year, a third edition may, as we trust, be necessary, the author may decide that Part VI. as it now stands does not add to the strength of the book. Indeed, he states in a footnote that it is to be regarded rather as an appendix than as an integral part of the work.

We may have assumed the somewhat ungracious rôle of a critic of the second edition after the unqualified praise which was bestowed upon the first. But the work is so strong in almost all points that we wish it to be made better still, and we feel sure that in subsequent editions certain minor blemishes will disappear and the future critical reader will gladly place *Dudley's Gynecology*, as we do now, side by side with the classical work of his honored teacher.

H. C. C.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-Books of the Leading American and Foreign Authors and Investigators. Under the general editorial charge of GEORGE M. GOULD, M.D. Philadelphia: W. B. Saunders, 1900.

THIS year this valuable publication has been rendered more convenient by dividing it into two volumes. There are a few changes in the names of the contributors, but none in the quality of the articles, excepting possibly a slight improvement. In considering this work as it appears from year to year the most striking feature is the small number of really important articles that are contributed annually to medical literature. This is particularly impressive when one realizes the immense number of articles that have been abstracted in order to fill the two volumes. For example, there are considerably over a thousand abstracts in the section on general medicine, very nearly as many in the section on surgery, and altogether we should estimate the total number at approximately five thousand. Nevertheless, it is difficult to select one hundred of these that are likely to be read ten years hence, excepting by those interested in the literature of some special subject. In fact, upon consideration, we think it doubtful if there will be more than ten such—that is, one-fifth of one per cent. It is not to be supposed, however, that because an article becomes worthless in a few years it is necessarily worthless at the present time. If a physician has the good fortune to produce something of lasting value, that is no reason why another who makes a contribution merely to statistics, or simply repeats, to perhaps a different audience, information already more or less well known, has not fulfilled a worthy purpose.

In looking over the book we note in the section on medicine the great number of articles upon typhoid fever. Among the most interesting is one of Stahl's, who describes a curious form of gangrene of the skin that he observed in 10 of 144 cases. There is considerable discussion of the possibility of combined infection of malaria and typhoid, and a number of interesting cases are reported by various authors. Practically, nothing is added to the treatment of typhoid fever. In regard to malaria, there is a moderate amount of literature upon the etiological rôle played by the mosquito. This literature has, since the abstracts closed, been considerably increased, and some of it that had been published in the *Centralblatt für Bakteriologie*, etc., evidently escaped the attention of the contributors. Almost no notice is taken of the vigorous warfare that has been waged regarding the relation of the bacillus icteroides to yellow fever. Tuberculosis, as usual, occupies considerable space; but the only really important article is that by Hauser, who has made a careful statistical and experimental study of the transmissibility of the disease from the parent to the offspring. Considerable work has been done upon the blood, among the interesting articles being one by Löwit upon leukæmia, which he believes is due to an amœba circulating in the blood. Of course, the proof he furnishes is not at present satisfactory. But little that is of remarkable interest has been added to the diseases of the thoracic organs, and the pathology of the stomach has not yet apparently been crystallized into a definite and satisfactory system. Adami believes that cirrhosis of the liver is due to infection by

micro-organisms that ordinarily are killed by healthy tissues. In the section on pediatrics considerable space is devoted to infant feeding, and there is an excellent plate of Koplik's spots on the mucous membranes in measles. One of the most notable articles that is neglected is that of Birch-Hirschfeld upon the primary seat of tuberculosis in the lungs. Otherwise but little has been added to the subject of pathology in the past year, although Mallory has studied typhoid fever and Streckeisen the fragmentation of heart muscle. The subject of tumors has had barely two and-a-half pages allotted to it. In the section on nervous and mental disease a considerable amount of space is devoted to Collier's article on Babinsky's sign, which has recently attracted wide attention on account of the publications of Walton and others in this country. Some of the articles in this section apparently belong elsewhere, as, for instance, the article of Kuperwasser on the blood in syphilis. The *Archiv für Psychiatrie* appears again to have been neglected. We prefer the term *paralysis agitans* to Parkinson's disease, although in this article the latter is given in preference. Considerable space is devoted to the subject of Finsen's phototherapy in the section on skin diseases; without expressing a positive opinion the editors remark that it is well worthy of further study. In the section on materia medica there is a long discussion upon the results obtained from the antitoxic serums, particularly the antistreptococcic serum. The evidence on this subject is still so contradictory that it is impossible to arrive at any positive conclusion. A good deal of space is also devoted to suprarenal extract, which appears to have proven its value. Necessarily less space has been devoted to the scientific subjects, but we mention with cordial approval the excellent section on physiological chemistry by Jukes and Hunt.

The second volume is devoted to surgical conditions and to the specialties more or less akin to them. Improvement appears to have taken place in antiseptic technique, as, for example, by the use of rubber gloves. The study of tumors and cysts, both from an operative and pathological stand-point, is excellent, while the space devoted to diseases of the œsophagus, stomach, peritoneum, and intestines is an evidence of the advances in the surgery of these organs. The literature on X-rays has diminished considerably; on the contrary, the literature of bullet wounds has been somewhat increased as the result of the recent elaborate experiments that have been carried out by various nations in the pursuit of warfare. Kelly's operation of perineorrhaphy is liberally illustrated. The section on anatomy is unusually brief. Wyatt Johnson's article deserves especial praise.

Taking it as a whole, the book fully deserves all the commendation that can be bestowed upon it. It gives a very thorough review of the literature for the period it covers, and is invaluable for the purpose of getting on the track of literature, particularly in reference to obscure cases.

J. S.

PROGRESS OF MEDICAL SCIENCE.

MEDICINE.

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Aspiration of the Lung in the Diagnosis of Tuberculosis.—The diagnosis of pulmonary tuberculosis before bacilli appear in the sputum is becoming daily more important in practical medicine, since abundant experience shows that the diagnosis can sometimes be made with great certainty before there is sputum, and the X-ray apparatus and tuberculin test are neither always reliable nor always at hand. HENKEL (*Münchener medizinische Wochenschrift*, March 27, 1900) calls attention to the advantage of diagnostic puncture in such cases. The operation is done with strict aseptic precautions. The skin is washed with spirit of soap and ether, shaved, if necessary, the syringe is boiled, the hands are sterilized. Aspiration is made slowly and with short interruptions. The sputum after the operation is occasionally blood-stained, but actual hemorrhages have not been observed. At times there is a slight temporary rise of temperature. The author has never seen any injurious effects, but reserves the operation to the cases in which a positive diagnosis of the existing pulmonary disease cannot otherwise be made. The operation is useful in cases of pneumonia with delayed resolution, and cases of local bronchitis without sputum or without bacilli in the sputum. The puncture should be made where the physical signs are most distinct. Occasional assistance may be derived from the feeling of resistance of the lungs, especially when pleural thickening can be excluded.

Kinds of Gastric Secretion and their Anomalies.—A. SCHIFF (*Archiv für Verdauungskrankheiten*, Bd. vi. p. 107) has made an extensive series of examinations showing the relations of the different gastric secretions to each other in health and disease, and confirming on the whole what previous observers have found regarding the independence of these functions. The