

REVIEWS.

On Bone Formation. By MURK JANSEN, Leiden, Holland.
Manchester: University Press. 1920. Pp. 114.

PROFESSOR JANSEN'S name is associated chiefly with his researches into the nature of achondroplasia. These researches, first published in English form in 1912, gained for him the reputation of an observer of admirable accuracy, reasoning power, and imagination. The same qualities are to the fore in these observations on the nature of bone formation. He is not here concerned with questions of bone growth, as was McEwen in his investigations on periosteal function: rather is his enquiry of a more speculative, philosophical nature—viz., in response to what stimulus does bone formation take place?

In 1867, Culmann and Meyer, in a study of the architectural structure of spongy bone, first advanced the hypothesis that bone formation takes place along the lines of maximum pressure and maximum tension. This theory was supported by Roux's observation on the architectural structure of an ankylosed knee joint, in 1885, and received its final imprimatur in 1892, when J. Wolff enunciated his famous law: "Wheresoever stresses of pressure and tension are caused in a bone, be it by pressing forces or by pulling forces, formation of bone takes place." The opinion that tension as well as pressure forms a trophic stimulus to bone tissue has prevailed almost unchallenged in the orthopædic literature of the past half-century.

Two main questions form the subject of Jansen's investigations: Is bone formation equally stimulated by tension and pressure? Is all bone formation dependent on mechanical stresses exclusively? A systematic analysis of skeletal structure, and a whole series of fresh observations on ankylosed joints, scoliotic vertebrae, and coxae varae, supported by a series of enquiries in comparative osteology (all beautifully illustrated), afford Jansen a sufficient evidence of facts to overthrow the Culmann-Meyer hypothesis, and to replace it by the belief that to pressure alone can a trophic effect on bone formation be assigned. Although apparently

unaware of Lane's investigations, it is interesting to note the similarity of Jansen's conclusions with those of Lane in his observations on the effects of occupational pressure strain in miners and other heavy labourers in '87-'90, prior to the publication of Wolff's Law. Jansen's observations on the normal vertebræ of man and quadruped animals demonstrate a constant lessening, or failure, of cancellous structure wherever pressure stresses diminish, or cease to act: whereas a constant parallel is shown to exist between the amount and density of the contained cancellous tissue and the degree of pressure the bone has to withstand. Nowhere did he meet with crystallisation of bony tissue along lines in whose direction only tension stresses acted.

The clinical importance of these observations lies in the lesson to be drawn, that wherever bone formation is to be promoted (in fractures and transplants), it cannot on any reasonable ground be expected from tension: pressure stresses alone form the trophic stimulus to bone formation.

Wolff's Law represents bony tissue as a material completely plastic in regard to external forces: Jansen would replace this law by another—viz.: "The form of bone being given, the bone elements place or displace themselves in the direction of functional pressure": this is practically the same as John B. Murphy's aphorism, "the amount of growth in a bone depends on the need for it." Jansen considers his "law" to be the only "tenable remnant" of the older law.

In the latter portion of his book, he indulges in many fascinating speculations, and is occasionally difficult to follow in some of his quicker philosophical flights. His philosophy of the "entelechie" is Aristotelian in its recognition of the purposive factors in nature.

WM. DOOLIN.

Syphilis in General Practice, with special reference to the Tropics. By K. K. CHATTERJI. Butterworth and Co., Calcutta. 1920. Pp. xx. + 382.

MR. CHATTERJI tells us that as a result of the praise given in the Ayurvedan to the virtues of the Nim or Margosa tree in the treatment of diseases of the skin, Syphilis and

Leprosy, he was led to make experiments. He has come to the conclusion that it is the Margosa oil which possesses the therapeutic property. From the oil he has extracted an acid which he calls Margosic acid. Esters of this acid possess, in his opinion, parasitotropic and antiprotozoal properties. He advocates the combination of these esters with arsenic and mercury. But since he gives us no information of the results obtained, his observations are not yet of much practical value.

For the rest, the book is, as books on Syphilis must necessarily be, almost entirely a compilation; and the compilation has not had sufficient regard for the essential importance of early and accurate diagnosis, and early and thorough treatment. For example, in discussing the differential diagnosis of the primary sore, while its multiform characters are explained and a comparison with other venereal and non-venereal sores given, yet mention of the direct examination for the spirochete appears only in a table of differential diagnosis. The technique for collection and examination of material is meagrely described in another chapter. Again, the performance of repeated Wassermann tests in doubtful cases of primary sore is not advocated.

In discussing the differential diagnosis of syphilitic disease of the central nervous system, the value of testing the cerebro-spinal fluid is not emphasised.

Constitutional and local treatment are dealt with in separate chapters. There is a careful analysis of the various preparations of salvarsan and mercury, and of the various methods of administering them; but there is no expression of the author's experience or of preference for any particular method. Again, there is no scheme given for the spacing of arsenical dosage, nor any indication given of the number of courses or amount of the drug necessary at particular stages of the disease.

As regards the peculiarities of Syphilis in Indians; skin lesions are more severe; pigmentary changes in the secondary stages are naturally more marked, and the result of depigmentation is, of course, more conspicuous. No mention is made of the nodular syphilide which is frequently found in these countries as a "reminder." Tertiary ulcera-

tion assumes a malignancy which is rare in colder climates. Neglect of treatment and secondary infection probably account for this.

Mr. Chatterji's book gives but little help to the experienced Syphilologist; while to the beginner, the omissions which we have commented on make it an unsafe guide.

Notes on Midwifery. By J. MUNRO KERR and JAMES HENDRY. Glasgow: Maclehose, Jackson & Co. 1920. THE first edition of these notes were only for private circulation amongst Dr. Munro Kerr's students to serve as notes of his lectures. This, the second edition, has been revised and brought up to date.

They are printed on one side of the page only and contain a few diagrammatic illustrations. The teaching is good; perhaps in the treatment of placenta prævia the limitation of bipolar version might be made more definite.

The notes are only intended for use in association with a text-book, to give a clear classification of the subject to either a student working for his examination or a teacher wishing to rapidly put the headings of his lecture in order, as such they will be found very useful.

J. S. F.

Operative Gynæcology. By H. S. CROSSEN. 2nd Edition. London: Henry Kimpton, 1920. Pp. 717.

THE key-note of this book is the careful adaption of operative procedures to the repair of pathological conditions present in the individual case.

In this edition, beyond revision and the addition of about 60 new plates, particular attention is given to the classification of operations for prolapse of the uterus and bladder. They are treated in the same way as operations for retroversion were in the first edition—namely, a classification which will shew at a glance the relation of the operation to the anatomical structures involved and the relation of each operation to other operations employed in the particular condition.

Each large subdivision such as operations for prolapse, retroversion or cancer of the uterus is divided into—(1) Technique of operations; (2) indications for operative treatment; (3) choice of operative method; (4) pregnancy in the particular pathological condition and the relation of operation to it.

The chapter on cancer of the uterus is especially good, the various stages of the operation being well illustrated together with the complications which may be met with. Another chapter of note is that on chronic inflammation of the pelvis where indications for operation are gone into very fully.

In the index and text there are one or two false references, otherwise the author is to be congratulated on a work which is likely to be of great use to gynæcologists.

J. S. E.

Le Diabète Sucré. By DR. MARCEL LABBÉ (Professeur de Pathologie Générale à la Faculté de Paris Médecin de la Charité). 1920. Masson et Cie.

IN a volume running into 374 pages, the author discusses diabetes mellitus in an original and interesting way. The work is based on his personal observations, extending over many years, both in the laboratory and at the bedside. He divides diabetes into three forms—(1) Diabetes without denutrition in which the metabolism of carbohydrates is alone at fault, and in which the glycosuria and symptoms are due to an ingestion of carbohydrate greater than that which can be dealt with by the organism; in other words, a pathological alimentary hyperglycemia and glycosuria. The patients suffering from this form are usually obese, the obesity preceding the diabetes. These cases, he claims, are simply treated by reduction of carbohydrates. (2) Diabetes with denutrition, rarer than the first, but more grave. Here the patient is in negative nitrogenous equilibrium, uses up as a consequence body proteins and wastes. He cannot tolerate any quantity of carbohydrate, however small, and the glycosuria persists after all carbohydrate has been removed from the diet. In these cases Labbé believes the glycosuria to be derived from carbohydrates, proteins and

fats. It is in this form that acidosis develops; the disease is progressive and usually ends in coma. In our opinion, the form as described by the author must be very rare, for, in our personal experience, failure to abolish glycosuria by suitable diatetic treatment is extremely unusual. (3) Intermediate cases, where the negative nitrogenous equilibrium may be compensated for by increase of ingested protein. In discussing the latter type, the author remarks that a case which previously showed no acidosis developed it on a diet of 10 grams of carbohydrate, 119 grams of protein and 187 grams of fat (body weight not given). He apparently thinks that the development of acidosis is characteristic of a reversion to the second form of diabetes above mentioned, for the patient was at this time losing six grams of nitrogen per day. It would seem to us that the acidosis would be more simply explained by want of balance in the diet, inasmuch as the carbohydrate ration was extremely low when compared with the high protein and fat ration, particularly the latter. The negative nitrogen balance might be due to increased metabolism rate as a result of acidosis. There is a chapter on diagnosis and prognosis. The author says little on the important subject of blood sugar estimations, which is a real fault in the work. There is an interesting discussion on the nature of the polyphagia, palmoplantar xanthochromia, on the nervous symptoms, myalgias and arthralgias accompanying diabetes. The important question of oedema in diabetes with special reference to the action of sodium bicarbonate receives attention. With regard to this question we would like to see the author's ideas supported by more elaborate records than appear in the text, and he gives the impression that he makes free use of large doses of sodium bicarbonate in acidosis, a practice which we believe to be not devoid of danger as a routine. The relationship of diabetes to tuberculosis is also discussed in considerable detail from the point of view of treatment. The relationship of glycosuria to injections and to diseases of the liver and the question of "le diabète bronzé" also receives attention. The author inclines to the view that it is not yet absolutely certain that lesions of the islands of Langerhans are invariably responsible for the production of this disease.

In relation to treatment, the author estimates that in "diabetes without denutrition" the protein ration required to maintain the patient in nitrogenous equilibrium is approximately 1.6 grams per kilogram of body weight; a much larger protein ration he believes to be required in diabetes with denutrition," but the larger protein ration required may lead to glycosuria and acidosis. The chapters on treatment do not impress us as favourably as the rest of the book.

The survey of diatetics is discussed. The best chapters in the work are those on acidosis and coma, and they will repay reading. However, we cannot agree with the routine treatment of acidosis (without premonitory signs of coma) with large doses of sodium bicarbonate, believing the acidosis can be controlled more fundamentally, quickly and efficiently, as a rule, and with less danger, by diatetic treatment.

We are inclined to feel that Labbé does not sufficiently distinguish between true diabetes mellitus and glycosuria. There is a good bibliography in the book.

HENRY F. MOORE.

Diseases of the Chest and the Principles of Physical Diagnosis. By G. W. NORRIS, A.B., M.D., and H. R. M. LANDIS, A.B., M.D. Second Edition. W. B. Saunders Co. 1920.

THAT the first edition of this work should have been exhausted in less than two years bears eloquent testimony to its sterling worth. The authors may be congratulated on the second edition, which contains new chapters on influenza, streptococcus empyema, chronic inflammatory conditions of the lungs of uncertain origin, and many others. The chapter on influenza is written in the light of the recent pandemic, and is consequently fully up to date.

The electrocardiograph is dealt with in an able and lucid manner by Edward B. Krumbhaar, who gives some excellent tracings. The chapter on subacute infectious endocarditis comprises some of the work that has recently been done on this subject, in particular, that of

Libman. We note the absence in the symptomatology of this disease of all mention of clubbing of the fingers.

A feature of the book is the presence of photographs of frozen sections from the cadaver, previously hardened in formalin, showing the anatomic relations of the tissues during life. Another feature is the stress laid on acoustics, a knowledge of which is deemed necessary for physical diagnosis.

On the whole, we can thoroughly recommend the book, which is one of the best, if not the best on the subject.

L. A.

Lectures on Tropical Ophthalmology. By R. H. ELLIOT.

Henry Frowde, Hodder and Stoughton. London, 1920.

Pp. 36. Price 3/6 net.

THIS pamphlet contains a series of lectures, first written for delivery at the London School of Tropical Medicine.

The lectures deal in outline with the primary and secondary eye diseases most commonly met with in the Tropics, and with those operations in connection with the eye, which the general practitioner may be called upon to perform.

The pamphlet is mainly of interest to the medical reading public as forming the skeleton on which was written the author's "*Tropical Ophthalmology*," the most recent and extensive monograph on this interesting subject.

Anæsthetics: Their Uses and Administration. By DUDLEY

WILMOT BUXTON, M.D., B.S. Sixth Edition. London:

H. K. Lewis and Co., Ltd. 1920.

THE sixth edition of this book presents many new features. It includes new sections on hæmorrhage and on shock, and embodies some of the experiences gained in the war. Several chapters have been recast, including that on ether and several others.

The work is very complete and up-to-date. It deals with spinal anæsthesia, with anoci-association, with the question of ventricular fibrillation, and presents modern research on these subjects. A little more space might well

have been afforded to anæsthesias by means of mixtures as well as to the use of the ethyl-chloride-ether sequence.

The plates—eight in number—are clear; the print excellent, and the book is not only comprehensive, but very readable.

L. A.

Elements of Practical Medicine. By ALFRED H. CARTER, M.D., M.Sc. Revised by A. G. Gibson, M.A., D.M., F.R.C.P. London: H. K. Lewis and Co., Ltd. 1920.

THE number of small text-books on medicine is legion, and few succeed in justifying their existence. It is questionable whether the student gains much from choosing such books in preference to the larger works on the subject. Often, however, before an examination time is so limited that a small text-book is imperiously necessary, and in such an emergency Dr. Carter's book might well be of signal service.

However, as an "introduction to the study of systematic medicine," the book rather errs by excess of detail. It is perhaps over-ambitious to put into such a small space such a large amount of information. The work includes sections on general pathology, on diseases of the skin, and a therapeutic index.

That this edition is the eleventh speaks for a high degree of popularity.

L. A.

Venereal Diseases: Their Clinical Aspect and Treatment.

By J. E. R. McDONAGH, F.R.C.S., Surgeon, London Lock Hospital; late Hunterian Professor Royal College of Surgeons, etc. William Heinemann, London. 106 Colour and 21 Half-tone Illustrations. Pp. xii. + 420.

THIS book is a most valuable addition to the literature of venereal disease.

The work is, in its way, unique, and nearly every page, and certainly every chapter, contains much that is new, and often something that is startling, to the rather conservative mind of the average medical man. We thoroughly approve

of the author's division of syphilis into the primary, the generalisation, the latent and the recurrent stages; and we agree with him in the importance he attaches to clinical observation and experience rather than laboratory tests.

Mr. McDonagh finds many points to support his view of the life cycle of the leucocytozoon syphilidis in many manifestations of the disease; as, for example, the clinical difference between the ordinary and the experimental chancre; and in the polymorphism which is so diagnostic of the first syphilitic rash.

It is cheering to read that such an eminent authority has come to the conclusion that the infectivity of chronic gonorrhoea is very much over-estimated.

This work ought to be carefully read by all who make a special study of this branch of their profession.

The interest of the text is much enhanced by the very fine colour plates and half-tone illustrations, and the publishers are to be congratulated on a really excellent turn-out.

E. P. M.

Orthopædics for Practitioners. By PAUL BERNARD ROTH.

London: Edward Arnold, 1920. Pp. 190. 57 Illustrations. Price 10/6 net.

THIS book deals with "the commoner deformities likely to be met with in every-day practice," and does not pretend to be a complete text-book of orthopædics. For the most part the author describes in a somewhat dogmatic manner only those methods of treatment which he himself favours. Other methods receive scant notice and are mentioned usually only for purposes of prompt condemnation, so that not all orthopædic surgeons will agree with the views expressed.

Sections dealing with congenital dislocation of the hip, lateral curvature of the spine, and infantile paralysis are clear and good.

The subject of fractures receives less attention than its importance merits in a work of this description. It is confined to fourteen pages, and is not well proportioned: thus, approximately, equal space is devoted to fracture of the neck of the femur and to fracture of the scaphoid bone of the

wrist. To judge from the duration of treatment recommended in certain fractures the author appears to underestimate the time taken in repair and consolidation.

Other important conditions which receive insufficient attention are hip-joint disease, which is disposed of in four pages, and tubercular disease of the knee-joint, the space to which is largely occupied by condemnation of excision of the joint.

The book includes chapters on injuries to peripheral nerves, amputation stumps and artificial limbs, and the treatment of old gunshot injuries. The latter is very inadequate, and would have been better omitted.

On the whole, the book is hardly to be recommended to general practitioners as one to guide them safely through the difficulties and pitfalls of orthopædic surgery.

W. P.