to the osteoclastomata, if they arise in the young vascular bone which replaces calcified cartilage, why should they be so rare below the age of twenty?

In the reviewer's opinion this tendency to dogmatise about the histogenesis of bone tumours is regrettable in a book which has so many excellent qualities and whose compilation has so clearly involved the authors in so much fruitful labour. For the surgeon who undertakes the heavy clinical responsibility of cases of bone tumour there is no better book of reference.—Geoffrey HADFIELD.

ILLUSTRATIONS OF SURGICAL TREATMENT, Instruments and Appliances. By Eric L. FARQUHARSON, M.D., F.R.C.S. (Edin.), F.R.C.S. (Eng.), Assistant Surgeon, Royal Infirmary, Edinburgh, Member of Clinical Teaching Staff, University of Edinburgh. Foreword by the late Sir John FRASER, Bt., K.C.V.O., M.C., M.D., Ch.M., F.R.C.S. (Edin.). Formerly Regius Professor of Clinical Surgery, University of Edinburgh. Third edition. 10×6 in. Pp. xii+391, with 319 figures and 16 plates. Index. 1949. Edinburgh: E. & S. Livingstone Ltd. Price 25/—.

This popular book, which is in nearly every house-surgeon's collection, contains an extract from the original preface stating the author's aim to illustrate those practical methods of surgical treatment which are rarely covered in text-books of general surgery. Apart from two sections on infusion and transfusion and an appendix on instruments and appliances, the teaching is entirely on fractures and orthopaedics. It is pertinent to ask whether Mr Farquharson's selection reflects faithfully modern British practice. The casual reader cannot fail to be enchanted with the sight and sound of every page, but the critical reader misses a description of those truly conservative and partially foolproof methods of treatment which do not lend themselves to photographic record. For example, a number of hyperextension manoeuvres to reduce compression fractures of the lumbo-dorsal and even dorsal spine are shown, but there is no mention of the renaissance of simplicity in the treatment of fractured spines, so ably sponsored by Nicoll from a mining area and by Guttmann from a paraplegic centre. In this chapter the teaching is of a choice pre-war vintage which nevertheless has become unpalatable to those who remember vividly the deplorable effects of hyperextension jackets applied during the stress of the bombing raids. Fractures of the os calcis are reduced by various means, such as hammering, the redresseur, screw-traction and the axial pin, but there is no appreciation of the results obtained by early active movement with freedom from weight-bearing. Possibly undue stress on the full reduction of bone deformity is seen in the treatment of sub-capital femoral fractures. Before pinning, the femur is manipulated into the fullest internal rotation and held there with the foot almost horizontal. The posterior gap opened up in the neck and the stretching of retinacular vessels must on occasion be considerable. Again, impacted fractures of the base of the first metacarpal bone are disimpacted, if need be by taps with a hammer.

Some minor criticisms are that continuous pulp traction by a suture is not in general use; that Denis Browne's "nut-crackers" for club feet do not appeal to most orthopaedic surgeons; that a walking sandal to control claw toes is impractical; and that anterior flat foot and metatarsalgia are by no means synonymous. The illustrations of surgical instruments include a number of museum pieces. The two pages devoted to eight tourniquets, for example, omit the two in everyday use, namely the Esmarch bandage and some variety of pneumatic tourniquet. Though the author's portable traction table, Braun's frame, Böhler's screw-traction apparatus, and Böhler's iron have each been seen in ten figures already, all four make a final appearance in the appendix.

Mr Farquharson's book is entirely admirable for the clear and concise text and for the excellent photographs and line drawings, but to a considerable extent it must be regarded as a lucid exposition of his own practice in fractures and orthopaedics. With some revision it would have an even wider appeal and could easily be the finest work of its kind.—K. I. NISSEN.

L'ORGANISATION DES OS. By P. LACROIX, Professeur à la Faculté de Médecine de Louvain. 9½×6¼ in. Pp. 230, with 87 figures. Index. 1949. Paris: Masson et Cie. Price 9.50 Francs (French).

How does a muscle cell differ from a bone cell or from a fibroblast? What factors have been at work controlling the development, from indifferent mesenchymal tissue, of such contrasting and specialised types of cell? For many years such problems of "cell differentiation" have fascinated those who study tissues under the microscope. The appearance of different cell types during early embryonic development provides striking examples of progression from unspecialised to specialised cells, and it is in the embryological field that the processes of cell-differentiation have been most closely studied.

Early embryologists regarded the fate of any part of the developing embryo as determined only by the inherent properties of the cells themselves, but experimental analysis has revealed that very often the differentiation of a particular tissue is brought about by outside influences acting on the cells concerned. An important task of experimental embryology has been to explore the nature of these controlling influences,

and in many cases it has been found that chemical factors are responsible. The discovery of the controlling influence of the anterior lip of the primitive streak was an outstanding example. Not only is the earliest differentiation of tissues in the embryo due to this type of chemical influence, but later in development there is an intricate co-ordination between nearby tissues, and this again appears to have a chemical basis. A well-known example concerns the eye region, where a necessary stimulus for the formation of the lens and conjunctiva is given by the eyecup as this outgrowth from the brain approaches the skin. The co-ordinated growth of many tissues depends on factors of this type, the local equivalents of the way in which a hormone can control the differentiation and development of a remote tissue. But this type of chemical influence, and the ability to respond to it by the production of specialised cells, are not restricted to early embryonic development. In pathological processes, for instance, adult cells often reveal a normally unsuspected plasticity and undergo a wide variety of transformations. Here too, chemical influences are often found to be the controlling ones. The present volume, by Professor Lacroix of the Institute of Anatomy of the University of Louvain, explores the extent of operation of such "organiser phenomena," as they are called, in bone tissue.

Readers of this journal will recall something of Lacroix's work from a brief article entitled "Organisers and the growth of bone," which appeared in 1947. On that occasion he summarised some of the experimental work that he had previously published on the subject in French and Belgian journals, and directed attention to its bearing on the role of "organiser" substances in bone growth and differentiation. This article is still the best introduction to Lacroix's work for the reader of English, but in "L'Organisation des Os" he presents in much more detail the experimental work on which his ideas are based. The book makes no attempt to be a formal or complete account of bone structure and behaviour, but is the description of an individual worker's material, amplified by illustrations from and references to the publications of others. Its matter is well presented, and it is clearly illustrated with numerous diagrams, drawings and photomicrographs.

Lacroix's work is based partly on ordinary histological studies on growing bones and partly on the results of transplanting various constituents of bone—periosteum, cortical bone, epiphyseal cartilage and bone marrow—to other sites in the body, particularly to the subcapsular tissue of the kidney. His description of the behaviour of transplants from growing epiphyseal cartilage is of outstanding interest. Active proliferation of cartilage cells takes place, the transplant continues to increase in bulk and undergoes the usual sequence of events that make up endochondral ossification. Columns of enlarged cartilage cells are invaded by cells of the surrounding connective tissue, and cartilage matrix is eroded by phagocytic giant-cells, just as occurs in the normal situation. Bone formation takes place on the cartilage scaffolding in the usual way, and even when the cells of the transplant have been completely killed by alcoholic fixation the same invasion by connective tissue cells and eroding "chondroclasts" occurs. These results suggest that these parts, at least, of the process of endochondral ossification are normally initiated by some chemical substance present in "pre-ossifying" cartilage. As well, the cartilage transplants quickly become surrounded by a "collar" of bone, formed by the host connective tissue. This is another "organiser" effect, and Lacroix believes that a similar stimulus is responsible for the development of the collar of bone that, in normal development, surrounds the margin of the epiphyseal cartilage. Can any of these "organising" substances be extracted from bone, and identified more specifically? Lacroix believes that this is possible, citing the work of Levander on the production of ectopic bone by means of alcoholic extracts of bone and cartilage, and he describes similar confirmatory experiments of his own.

Recent years have witnessed a great deal of advance in our knowledge of the chemical control of bone, both in its normal growth and maintenance, and under pathological conditions. The most significant studies have concerned generalised extrinsic influences, such as those provided by the hormones of the pituitary, parathyroids and gonads. Lacroix's contributions to knowledge are important because of the light they shed on quite a different type of chemical influence—local in origin and operation, and co-ordinating the development, maintenance and repair of the diverse tissues making up the skeleton. —H. A. Sissons.

FRACTURES AND DISLOCATIONS IN GENERAL PRACTICE. By John P. Hosford, M.S., F.R.C.S., Surgeon to St Bartholomew's Hospital. Second edition, revised by W. D. Coltart, M.B., F.R.C.S., Assistant Orthopaedic Surgeon to St Bartholomew's Hospital. 8×6 in. Pp. x+290, with 87 figures. Index and Appendix. 1949. London: H. K. Lewis & Co. Ltd. Price 21/-.

The author of this book, primarily intended for general practitioners, points out in the preface to the first edition its role as a shorter text-book for students. This double objective is difficult of attainment and has not been altogether achieved in so far as a manual for practitioners is concerned. The first seven chapters are devoted to the definitions and general principles of treatment of fractures and would be excellent reading for students. The major portion of the book gives a clear account of the commoner fractures and dislocations, together with sensible and orthodox methods of treatment. Indications are