new and a neat method of using a double Kirschner wire in a special clamp to apply compression in joint arthrodesis is shown. Charnley's work is given due mention, but his clamps do not figure in the illustrations. There appears to be some fear of infection with a Steinmann's pin, and preference is given to the use of Kirschner wires. Inadequate attention is given to the section of surgery on active tuberculosis. There is a curious omission: while Lapidus's operation on the hyperflexed great toe in poliomyelitis is accurately described, his neat and masterly procedure in correcting the congenital overlying fifth toe is omitted.

This work deserves great praise. Its completion is no mean task and the fact that this is the second edition in three years shows that it is appreciated. Its references are sound and widely distributed through the continental and English literature. It is adequately illustrated and is set out in a systematic manner. The minor criticisms above are trivial ones and cannot affect the general validity and value of such a sound and solid work.—J. G. BONNIN.

Poliomyelitis. Papers and Discussions Presented at the Fifth International Poliomyelitis Conference, Copenhagen, Denmark, July 26–28, 1960. Compiled and edited for the International Poliomyelitis Congress. 10 × 7½ in. Pp. xxiv + 435, with many figures and tables. Index. 1961. Philadelphia, Montreal: J. B. Lippincott Company. London: Pitman Medical Publishing Co. Ltd. Price 60s.

The report of the International Poliomyelitis Conference at Copenhagen in 1960 has shrunk again to the size of those of the first three conferences. This has been possible because discussion on the care of patients, the social aspects of the disease, physical medicine and orthopaedic surgery did not take place at the Fifth Conference. "The Programme Committee did not consider it desirable to include such subjects since little that was new and of importance had been added to the knowledge during the previous years." Nevertheless, readers of the previous volumes will welcome the new one because it continues the story of the successful attack on the disease by the virologists and offers an arena for the rehearsal of the world wide reports of the effects of the policies employed by the advocates of the two main systems of vaccination.

The whole of the first day of the Conference was devoted to virology including viral structure and reproduction, cell responses and immunological reactions. On the second day the discussion on vaccination began. The reports on the use of inactivated virus vaccines from various countries, particularly U.S.A., Czechoslovakia and Israel, admitted that the morbidity rates suggest that the vaccine could not ensure a long term prevention of epidemics. All agreed that the Salk vaccine had been effective in reducing the incidence of paralytic poliomyelitis and all lamented the lack of knowledge of the duration of post-vaccination immunity. Then followed reports on the large scale field studies with Sabin strains of live poliovirus in U.S.A., U.S.S.R., Czechoslovakia, Hungary, East Germany, China and Bulgaria and in all these there was a notable decrease in incidence of poliomyelitis and in its severity leaving only mild manifestations with spinal localisation and facial palsy. The vaccinations proved to be completely harmless without any danger of reversion or transition by the vaccinal strains to a more virulent state. The time would appear to be ripe for the attempt to eradicate poliomyelitis. The last day of the Conference was devoted to the immunological responses to attenuated poliovirus vaccines and to their spread in the community and to the consequent implications for public health.

Looking back to the First International Conference in 1948 the change in the world picture of poliomyelitis is much greater than the most sanguine of observers could have hoped at that time. The true international pooling of scientific data and materials in the conquest of this disease is one of the most heartening endeavours to have been seen in a century in which the common international coin continues to be distrust, secretiveness and brinkmanship. Not all the answers to the problems of coping with the vagaries of the wild poliovirus are yet known, the ecology of artificial viruses is not fully appreciated, but at least the problems of their management are less difficult and frustrating than those of their hosts. Few people who have studied the reports of the four previous International Conferences will be able to resist the present volume which has the air of being one of the final chapters of a fascinating crusade.—John M. P. CLARK.

Henry Ford Hospital Medical Bulletin. Orthopedic Issue. Volume 8, June 1960, Number 2, Part II, and Volume 9, March 1961, Number 1, Part II. By Harold M. FROST, M.D., Associate Surgeon, Department of Orthopedic Surgery; Anthony R. VILLANUEVA, B.S., Research Assistant, Orthopedic Research Laboratory; Herbert ROTH, B.A., Senior Medical Student, Wayne State University, College of Medicine; and Philip H. MCFARLAND, M.D., Former Resident, Department of Orthopedics; present address, Fullerton, California. 9½ × 6½ in. Pp. ii + 75 and i + 113, with many figures and several tables. 1960 and 1961. Detroit: Henry Ford Hospital. Available on application to the Chairman, Publications Committee.

These two issues of the Henry Ford Hospital Medical Bulletin are devoted to papers from the Orthopedic Research Laboratory of that Institution. Dr Harold Frost appears either as sole or co-author of each of the twenty-two papers—a remarkable feat reflecting the energy and enthusiasm with which he invests his studies. Some of the papers are concerned with different aspects of the morphology of bone using fresh undecalcified sections prepared by a simple technique which Dr Frost has developed; others with the measurement of rates of bone formation as revealed by tetracycline markers.

These papers contain a wealth of information on normal bone such as the number of osteocytes per unit volume of cortical bone, the percentage of bone volume which is occupied by the lacunae and the amount occupied by canaliculi (which surprisingly is almost twice the former figure). Osteoid has been found in normal bone at all ages, although the number of osteons containing osteoid diminishes from 10 per cent at the age of five to less than 1 per cent in adult life.

The examination of bone from a number of patients whose bones had been labelled by tetracyclines at known intervals before biopsy or autopsy has allowed calculation of rates of bone formation within an osteon which averages 0.9 micron per day. New bone formation was found to be suppressed in patients receiving cortisone therapy. Several papers describe some interesting properties in the "halo" of bone immediately surrounding the osteocyte, which throw some light on the metabolic activity of these cells. These are but a few examples of the mass of interesting information which is contained in these issues.

It is perhaps unfortunate that this work, which is so largely concerned with one or two basic topics, should be broken up into so many short articles. This has led to a great deal of repetition and an unnecessary separation of observations and ideas which would be easier to follow if collected in a more logical fashion. One might criticise Dr Frost also for a general tendency to refer largely to his own work while ignoring many important and highly relevant contributions of others on subjects which he discusses. However, these criticisms do not detract from the very substantial contributions contained in these papers and while one may disagree with some of the conclusions which Dr Frost draws from his observations, no one could read them without being immensely stimulated and instructed.—John CHALMERS.

Radiographic Atlas of Skeletal Development of the Foot and Ankle. A Standard of Reference. By Normand L. HOERR, Ph.D., M.D., S. Idell PYLE, Ph.D., and Carl C. FRANCIS, M.D., the Department of Anatomy, Western Reserve University School of Medicine, Cleveland, Ohio. 11½ × 9 in. Pp. xv + 163, with many figures and tables. 1962. Springfield, Illinois: Charles C. Thomas, Publisher. Oxford: Blackwell Scientific Publications. Price 76s.

Few books are conceived over thirty years before their first edition is offered to the purchaser. This radiographic atlas of the development of the foot and ankle originated in a systematic collection of data by Professor Wingate Todd, Professor of Anatomy at the Western Reserve University. Work was commenced in 1928 and was later continued by his successor, Professor Normand Hoerr, who also did not survive to see its publication.

The basis of the survey rests on a radiological study of the ossification and outline of the foot in 515 boys and 484 girls whose feet had been radiographed at three, six or twelve months intervals from birth to eighteen years. Selection was made from a larger collection of nearly 4,500 children who were examined.

The atlas is divided into three parts. The first part is concerned with method of study, definition of the terms used, assessment of bone growth, and the design of the standard of reference. The standard of reference used rests upon the state of ossification and the recognition of so-called maturity indicators which are defined as the appearance of recognisable osseous characteristics peculiar to the individual bone considered. The second part of the book presents in detail the appearances of a standard foot and ankle at different ages ranging from birth to eighteen years. This standard foot has been selected from the mean of 100 children of the age considered. The final section is made up of line drawings of individual bones made from the standard of reference to illustrate the maturity indicators present.

The authors have provided a monumental reference book for those who are especially interested in the detailed development of the foot. The atlas is well illustrated and beautifully produced. No index is provided but the table of contents is quite comprehensive. It is a pity that the language of the text is often ponderous and verbose. "The tangibility of contour markings provides a degree of definiteness that is especially reassuring when one is summarising a child's skeletal developmental status." Is it really necessary to put it quite like this?—F. PYGOTT.