the lining. Without this preliminary operation only very limited benefits can be obtained from the bone graft.

I congratulate the authors on their careful work. This book meets a real need and should find a place on the bookshelf of every surgeon working in countries where leprosy is endemic.—Paul W. BRAND.

L'Ostéoporose. Symposium organised by the Centre du Métabolisme Phospho-Calciq (Centre André-Lichtwitz), Paris, 1963. Edited by D. J. HIOCO, Directeur du Centre du Métabolisme Phospho-Calciq. Preface by Professor S. DE SÈZE. 9½ × 6½ in. Pp. ix + 262, with 83 figures, 2 colour plates and 79 tables. Index. 1964. Paris: Masson et Cie. Price 55 F.

The increasingly common practice of publishing the proceedings of symposia on particular topics has the advantage of presenting to a very wide audience the current work on different aspects of the problem selected. Considerable credit must be given to the editor of these proceedings for the fact that they appeared in print well within a year of the date of the meeting itself. The omission of any transcript of the discussion following each paper is unfortunate, even though it may have expedited publication. Since this symposium was held in Paris, fifteen of the twenty-one papers are in French.

Morphology, calcium metabolism, clinical types and studies of pathogenesis and treatment are the four headings under which presentations are grouped.

The opening paper is a concise summary and interpretation of the histological differences between normal and osteoporotic bone. It is followed by a beautifully illustrated and remarkably comprehensive piece of work in which the microradiographic and histochemical characteristics of single undecalcified sections of normal and abnormal bone have been correlated. After a description of a direct method of measuring the trabecular bone content of iliac crest biopsies, with results to indicate the reliability of the method, a distinction is proposed between atrophic, active and osteopathic types of osteoporosis. A brief report of findings in post-traumatic metaphyseal rarefaction follows and a review of electron microscope studies of the formation of organic matrix and its subsequent calcification concludes the section on morphology.

The chapter on calcium metabolism opens with a comparison of the relevant parameters in twenty-seven osteoporotic and ten normal subjects reported from four different centres where kinetic analysis of the distribution of bone-seeking isotopes is undertaken. The discrepancies are considerable and, since the much more numerous results now available show greater consistency, they appear to have been over-emphasised. The second paper in this group indicates that senile osteoporotics absorb a subnormal proportion of their habitually low calcium intake. In the presence of normal loss of faecal endogenous calcium, negative calcium balance occurs and this can be corrected by a high intake. The next two presentations confirm that calcium deficiency is an important factor in the etiology of osteoporosis, citing evidence from isotope studies, and the last paper also suggests that, at the skeletal level, a decrease in the rate of formation of bone rather than increased resorption is responsible for the bone changes.

The clinical forms of primary and secondary osteoporosis are well summarised in the third chapter and the common associated metabolic abnormalities are given.

The final triad of papers starts with an assessment of methods of investigation, including urinary excretion of calcium under conditions of infusion, high oral intake and calciferol ingestion as well as calcium absorption and its restriction by phytate. Accepting the lack of a sound theoretical basis for the last two tests, the authors have found that they give useful information. The presentation concerned with pathogenesis summarises a vast amount of clinical and laboratory investigation, not only in patients with primary osteoporosis but also in a very large number of controls. Isotope studies have shown that in osteoporosis "bone formation rate" is normal, "bone resorption rate" is increased and intestinal absorption of calcium is decreased. Balance studies indicate that with a low calcium intake, osteoporotics are in more seriously negative calcium balance than are normal subjects. Evidence is also given for the arrest of progressive osteoporosis by high doses of calcium by mouth. This is also advised in the last paper, in which the use of anabolic steroids and oestrogens is also advised as a result of clinical trials of different methods of treatment.

The enormous amount of information presented at this symposium attests to the intensity with which osteoporosis is being studied. Workers in this field still have far to go, even in such apparently simple problems as definition. Although the cause of primary osteoporosis is still not completely understood, there is increasing evidence in favour of the belief that prolonged negative calcium balance is a prime factor. Conversely, little direct evidence can be adduced in support of the earlier belief that hormonal abnormalities or protein deficiency are important in the pathogenesis of this condition. Comprehensive and up to date as it is, this book is essential to those working on or interested in osteoporosis, the effects of which are so frequently encountered in orthopaedic practice.—J. STEVENS.