

An Introduction to the Scientific Study of the Soil  
By Prof. Norman M. Comber. Third edition. Pp. vii+206. (London: Edward Arnold and Co., 1936.) 7s. 6d. net.

WHILST no outstanding changes have been made in the third edition of Prof. Comber's deservedly well-known book, its subject-matter has been brought fully up to date without sacrifice to the conciseness and clarity of the original text. The book is intended for agricultural and horticultural students, that is, those whose interest in the soil has a strong practical bias; nevertheless, the scientific point of view is maintained so consistently in each chapter that the student is led to think of the soil as much from the pedological as from the purely practical point of view. Indeed, the greater part of the book is concerned with the study of soil as a natural entity, quite apart from the problem of its agricultural utilization. It is perhaps the chapters dealing with the main facts of soil physics and soil chemistry that help the reader most to bridge the apparent gap between the scientific and the practical approach to the study of soil.

The scientific point of view from which the book is written is typified in the title of the penultimate chapter on "The Artificial Treatment of the Soil", in which the effects of common cultivation practices on soil fertility are briefly reviewed. In this section a useful account of the replicated plot system used in modern field experiments is also given. The chapter on soil water is a good example of the author's facility in stating main facts and definitions, which are apt to be lost sight of in the more advanced literature of soil science. Useful advice on how to use the latter is given at the end of the book, but in the text itself there are practically no references to the sources of the works which are quoted. The inclusion of such references would be surely welcomed by what Prof. Comber describes in his preface as "botanists, ecologists and others besides agricultural students", who are partly responsible for the demand for a third edition of this extremely useful book.

A. J. L. L.

The Organisation of Agriculture :  
with Applications to South Africa. By Prof. Hubert D. Leppan. Pp. v+83. (Johannesburg: Central News Agency, 1936.) 4s.

ONE of the most urgent of many tasks confronting South Africa is to save the soil. The causative evils most frequently cited are faulty pasture management, particularly overstocking, and cultivation of unsuitable land. Behind these lie racial, social and political causes that have influenced the development of South African agriculture. A complete re-organization of agriculture is now imperative.

Prof. Leppan considers that in a policy of land utilization concentrating almost entirely on properly organized animal husbandry lies South Africa's chief hope of salvation. He traces the past policy of encouraging cereal production, assisted by export subsidies, tariffs and a magnificent elevator system, to the economic consequences of the South African War, and points out that the reverse policy of

encouraging cheap grain imports would have the effect of increasing soil fertility, thereby helping to save the veld from erosion. The imported feeds would be used to relieve pressure on the pastures, and not to carry more animals, which should be fewer and of better quality. More use should be made of cultivated land in producing animal rather than human foods. The meat market could be enormously extended, and the demand for maize proportionately reduced, by educating the natives and raising their standard of living.

Prof. Leppan considers that the land in South Africa is overstocked with men as well as with animals, and that a white peasant class is undesirable in South Africa. He recommends fostering urban activities to relieve pressure on the land, and the State purchase of derelict farms which might be rented on long leases with due safeguards against overstocking and other maltreatment. All economic and political measures, however, are useless unless they are supplementary to controlled veld management.

G. V. J.

The Physical Basis of Geography :  
an Outline of Geomorphology. By Dr. S. W. Wooldridge and R. S. Morgan. (University Geographical Series.) Pp. xxi+445. (London, New York and Toronto: Longmans, Green and Co., 1937.) 12s. 6d. net.

IN the first part of this book, the authors have deliberately 'taken sides', in an endeavour to place much-debated topics in geophysics and tectonics clearly before the student. For example, Wegener's continental drift theory is presented in a much more favourable light than customary. No harm will be done to the student by this method of treatment provided he realizes that he is receiving one point of view. Incidentally, it is pleasant to see that regrettable term "betwixt-mountains" somewhat frowned upon.

The second and more important part of the book has a different tone. Here the central theme is the cycle of erosion as conceived by W. M. Davis and elaborated and modified by Johnson and others. The development of landscape under many environments is critically discussed in the light of the orderly sequence of this cycle. Examples of the chronology of denudation, as for example in the Appalachians and the Weald, are fully described. Marine erosion, arid erosion, and erosion in limestone regions are considered. Under this last topic there is given a full account of the development of the land-forms of the chalk in Great Britain—forms in their way as remarkable and as interesting as those of the more fashionable Dalmatian Karst. The book closes with a critical discussion of the influence of glaciation upon scenery, in which the views of the erosionists and protectionists are fairly presented, and with a short account of the possible part played by glacial control in certain major physiographic effects of the Ice Age.

This book, and especially the more important second part of it, should be read by geographers and geologists alike, as it is a sound and critical exposition of erosion processes.