

the time to collect for themselves the information rather widely scattered in the literature of the science, and necessary to obtain a grasp of the present state of the problem.

In a preliminary chapter the fundamental laws of the particulate theory of inheritance are crisply and clearly set forth, for which those who have not made a study of genetics will be grateful. The interaction of heredity and environment is then considered, with special emphasis on the internal environment provided by the gene complex. This is aptly followed by a review of the theory of the evolution of dominance and recessiveness. The question of the rôle of the cytoplasm in inheritance is well handled, and the adequacy of Mendelian inheritance to sustain the processes of evolution is demonstrated. The importance of geographic and also of genetic isolation with regard to the origin of species is well illustrated. Mr. Ford has, in fact, treated a very many-sided subject in a remarkably thorough and satisfying manner. A glossary which includes all technical words not explained in the work itself places this excellent book fully within the appreciation of the layman.

*Chemistry in the Service of Man.* By Prof. Alexander Findlay. Fourth edition. Pp. xviii + 355. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1931.) 6s. net.

WRITERS have called this a chemical age: it is certainly a period of chemical evolution, and side by side with a rapid advance in the science of chemistry there is great progress in its application to material things. Every layman participates in the benefits, and it behoves most of us to have some understanding of the how and the why of them. The conversation books of a former generation taught us in an entertaining way of the fruits of the earth and even of chemistry: to-day they are replaced by such books as that of Prof. Findlay, now in its fourth edition. He has somehow achieved the task of compressing everything into a very small compass, and yet produces a book which is eminently readable by an average person who seeks to enlarge his curiosity after the works of Nature. It is a book which should be widely read: in a more enlightened age one would expect a long notice of it to be treated as a feature by the literary reviews—surely a knowledge of what things are is of more importance than the history of a particular period, or the life of an eminent statesman, soldier, or courtesan? E. F. A.

*Handbuch der Pflanzenanatomie.* Herausgegeben von Prof. K. Linsbauer. Lief. 27. Abt. 1, Teil 2: *Histologie.* Band 4: *Die Epidermis.* Von K. Linsbauer. Pp. viii + 284. (Berlin: Gebrüder Borntraeger, 1930.) 29.40 gold marks.

THE section of this handbook upon anatomy that deals with the epidermis has been written by the editor of the series and might serve as a very good example of such encyclopædic work at its best. The epidermis is considered from the point of view of the morphology and detailed structure of the individual cells, with special sections upon the thickening and pitting of the wall and of the wavy

contours that characterise the anticlinal wall in many cases, etc.

The chemistry of these membranes—slime formation, lignification, the nature of the cuticle and of wax excretions—receives very adequate attention.

The protoplasm of the epidermal cells and the various inclusions that have been reported are fully dealt with. The development and regeneration of the epidermis are adequately treated, so far as is permitted by the lack of attention these problems have had up to the present. The function of the epidermis leads to a full treatment, as an absorbing system, of the root surface and of the root hairs, but such physiological subjects, as also theories of light perception by epidermal cells, are only considered so far as they have led to re-examination of structural features of epidermal tissues. The root hair receives much attention when considering the epidermis as an absorption system, but the epidermis as a protection against evaporation receives less attention, and the problem whether hairs on the shoot epidermis hinder or help evaporation is left alone. Stomatal apparatus is evidently excluded from the scope of the monograph.

*Studies on the Genus Pythium.* By Velma Dare Matthews. Pp. v + 136 + 29 plates. (Chapel Hill, N.C.: University of North Carolina Press; London: Oxford University Press, 1931.) 13s. 6d. net.

MISS V. D. MATTHEWS' book gives a very complete account of the genus *Pythium*. The author collects information of the methods and media for culture, discusses distribution and habit, the production of mycelium, sporangia, conidia, zoospores, and sexual organs, and considers taxonomic characters. The genus *Pythium* is taken as it was originally established by Pringsheim, though its vicissitudes since that time are also enumerated. A key to the species is given, and each one is described in detail, with such physiological characters as are known. The host-range is also enumerated, and the book includes twenty-six plates of line drawings and an extensive bibliography. The academic or economic mycologist will find the book a useful work of reference.

*Agricultural Policy in South Africa.* By Prof. H. D. Leppan. Pp. 101. (Johannesburg: The Central News Agency, Ltd., 1931.) 6s.

PERHAPS the chief interest of this book is the summary of the natural conditions in South Africa: the accounts of the soil, climate, water problems, and others. Few countries in the world are more interesting to students; within a comparatively short range one finds the moist temperate climate of the southern part of Cape Province, the semi-arid conditions of the Karroo, the desert of Griqualand, the open steppe-like country of the veldt, and the tropical luxuriance of northern Natal. Farther north comes the park-like country that stretches away to the equator and beyond. All these natural features react on the agriculture and bear on the agrarian policy best suited to the country. The author's discussion will be found of interest, even to those not particularly concerned with the agricultural industry.