

edition, and pages 416-438 contain new tables of the absorption coefficients of solutions of various substances. There are very few additions to the literature references given in the re-printed part of the book, and the references to the new parts are very far from complete. Apparently no corrections have been made in the older parts; for example, it is still stated that the action of light on silver chloride gives rise to sub-chloride.

In the preface the author states that complete revision of the subject matter is left to the next edition. It is to be regretted that such a revision was not carried out for the present volume. When such an edition is published, it is to be hoped that only the apparatus and methods of Plotnikow which have stood the test of experiment will be described, and that the work of other investigators will also be incorporated in its due proportion.

*The Tropical Crops: a Popular Treatment of the Practice of Agriculture in Tropical Regions, with discussion of Cropping Systems and Methods of growing the leading Products.* By Otis Warren Barrett. (The Rural Science Series.) Pp. xviii + 445 + 24 plates. (New York: The Macmillan Co., 1928.) 17s. net.

THE author estimates that about one-half of the area of cultivable land in the world lies within the torrid zone. When one considers the wide range of rainfall, humidity, temperature, peoples and civilisations which exist in the tropics, one realises that the agriculture of this part of the world embraces a very much wider field than can possibly occur in the temperate zones, where the range of such conditions is much more limited.

As this book is based mainly on the personal observations of the author, it is evident that only those aspects of tropical agriculture with which he is familiar can be dealt with at all fully. The book is chiefly confined to the perennial crops of the tropics and to those grown in more humid climates. So far as these are concerned the book is of value, especially since the writer has had so long an experience of such crops and conditions.

More than a quarter of the book deals with tropical fruits, many of which are of purely local interest. Reference is made to many tropical plants which yield commercial products but are only remotely connected with agriculture. On the other hand, the arable crops of the tropics are very briefly dealt with, and this aspect of tropical agriculture is evidently outside the writer's experience. He makes the statement that "really proper tilth in tropical areas is rare". This entirely neglects the arable agriculture of the Old World tropical civilisations, such as is to be seen in India, China, and Egypt, where very high standards of arable farming exist. Crops such as tropical cereals, bast fibres, oil-seeds and pulses, all of which are vital to the needs of the dryer regions of the tropics, are dismissed in a few pages. Even rice, which the author refers to as the world's most important crop, is summarily dealt with in less than three pages.

H. C. S.

*Automaton: or the Future of the Mechanical Man.* By H. Stafford Hatfield. (To-day and Tomorrow Series.) Pp. 100. (London: Kegan Paul and Co., Ltd.; New York: E. P. Dutton and Co., 1928.) 2s. 6d. net.

THE idea of a 'mechanical man' has receded into the background since the advent of the mechanical age. When practically all our necessities are provided by automatic or semi-automatic machines, there is no necessity to construct things having the external appearance of men and doing our bidding. They would do it much more effectively if they were specially designed for the job. Yet it is interesting to follow the author's account of modern efforts towards complete automatism, from the sorting of letters to the self-steering aeroplane. He recognises that mechanisation has worked both ways, and that, while machines have been endowed with almost human faculties, man himself has become mechanised, inasmuch as civilisation and humanitarianism tend to "create communities of well-washed, well-fed, well-regulated, well-behaved, mildly cultured people as devoid of all individuality as machine-made automata". An eminently readable essay.

*The Elasmobranch Fishes.* By Prof. J. Frank Daniel. Pp. xi + 332 + 30 plates. (Berkeley, Cal.: University of California Press; London: Cambridge University Press, 1928.) 27s. 6d. net.

STUDENTS and teachers of zoology alike will welcome the second edition of Prof. Daniel's comprehensive treatise on the elasmobranch fishes. The same method of treatment as that adopted in the first edition has again been followed. In dealing with the various systems of organs, a detailed description of the condition found in the notidanid shark *Heptanchus maculatus* is given, followed in each chapter by a comparative account of the more specialised forms. In this way the reader is made familiar not only with the general structure of the group but also with the various modifications and specialisations exhibited by different members of it. A considerable amount of new subject matter, several additional illustrations, and a number of corrections of the original text serve greatly to enhance the value of this useful and attractively produced work.

*Flora of the Presidency of Madras.* By J. S. Gamble. (Published under the Authority of the Secretary of State for India in Council.) Part 8: *Ulmaceae to Xyridaceae.* By C. E. C. Fischer. Pp. ii + 1347-1532. (London: Adlard and Son, Ltd., 1928.) 10s. net.

SINCE, on the death of Mr. J. S. Gamble, the "Flora of the Madras Presidency" was left unfinished, the continuation has been undertaken (at the express wish of Mr. Gamble) by Mr. C. E. C. Fischer, late of the Indian Forest Service and now assistant for India at Kew. The present part comprises the concluding families of the Angiosperms (*Ulmaceae* to *Salicaceae*), Gymnosperms, and the Monocotyledons from *Hydrocharitaceae* to *Xyridaceae*.