Our Bookshelf.

Handbuch der biologischen Arbeitsmethoden. Ed. Prof. Dr. Emil Abderhalden. Abt. XI.: *Methoden zur Erforschung der Leistungen des Pflanzenorganismus.* Teil 1, Heft 7 (Schluss), Lieferung 134. *Experimentelle Physiologie der Pflanzenzelle.* Von Ernst Küster. *Serum-Reaktionen zur Feststellung von Verwandtschaftsverhältnissen im Pflanzenreich.* Von Carl Mez. Pp. 961-1123 + xxiv. (Berlin: Urban and Schwarzenberg, 1924.) 6·75 gold marks.

AN almost uncanny ingenuity seems to have been shown by the distinguished editor of this series in devising the subjects for monographic treatment, and in attempting the discussion of the experimental physiology of the plant cell, the author has almost inevitably taken refuge in banalities. There is a brief section upon material, which may be summarised as saying that unicellular organisms are more convenient for use and that tissue culture experiments with plants have so far been singularly unsuccessful.

Under the section upon testing material there is a brief discussion of the use of plasmolysis, staining, etc., to determine the vitality of the material under examination. The main part of this monograph may be useful as bringing together data upon a number of different technical methods scattered widely through the literature and including the isolation of microscopic organisms for examination, measurements of growth on single hyphæ, plasmolysis, following the internal movements of certain cell constituents or chloroplasts, the influence of light, centrifugal force, narcotics, etc., upon the cell and its component parts. Micro-dissection methods are briefly referred to, but more space is given to a number of out-of-the-way experimental methods which would certainly be buried in the literature but for this monograph.

The brief monograph upon serum diagnosis is confined strictly to a practical account of the method as employed by Mez, who has injected plant extracts into dogs and afterwards, by the use of precipitin and agglutinin reactions with serum from the animal, investigated extracts of other plants as to their biochemical similarity, relying upon the specific nature of the protein chemistry of these reactions as shown by the experience of animal physiology. This biochemical method is thus employed as a test of relationship as embodied in the current classification of the plants. Work of this nature has filled many pages of German and Japanese botanical journals in recent years, but so far has been left alone by British workers.

Pighude (*Echinodermer*). Af Th. Mortensen. (Danmarks Fauna: Illustrerede Haandbøger over den Danske Dyreverden med Statsunderstøttelse udgivne af Dansk Naturhistorisk Forening.) Pp. 274. (København: G. E. C. Gads Forlag, 1924.) 7·50 Kr.

THIS little book on the echinoderms of Denmark, by a well-known investigator of the group, is part of a Danish series comparable with the "Faune de France." Considerable progress has been made since the Trustees of the British Museum published the late Jeffrey Bell's "Catalogue of British Echinoderms," but British naturalists will now find their needs almost completely supplied by Dr. R. Koehler's "Echinodermes" and Dr. Mortensen's "Pighude." Between them they cover the English Channel and the greater part of the North Sea. One would have liked some general discussion of the echinoderm fauna as a whole, with its relations to Arctic, Atlantic, and southern faunas, but this book, like Dr. Koehler's, is almost purely descriptive. Two points in which it differs from any previous work of the kind are the description of the larval forms of the species wherever known, and the inclusion of the chief Danish fossil echinoderms. The latter course is practicable for Denmark, because examples are virtually confined to the Chalk. Another useful and unusual feature is the indication of the tonic accent in systematic names, thus: *Soláster éndeca.*

In view of the author's recognised competence it were superfluous to praise the exactitude and clarity of his descriptions, though British readers may get more use from the clear diagrams and photographs with which the book is liberally provided. One does not, perhaps, look in a work of this kind for its author's views on classification; one assumes that a somewhat conservative attitude is adopted for the sake of a wide public. This no doubt explains the retention of Phanerozonia and Cryptozonia as the two orders of starfish, and of Ophiuræ and Euryalæ as the two orders of brittle-stars. Under the sea-urchins we are glad to see the old ordinal name Diadematoidea. In this, as in other features, the book is thoroughly well suited to the working naturalist. F. A. B.

Air Ministry: Meteorological Office. British Meteorological and Magnetic Year Book, 1915. Part 5: *Réseau Mondial*, 1915. *Monthly and Annual Summaries of Pressure, Temperature, and Precipitation at Land Stations, generally Two for each Ten-degree Square of Latitude and Longitude.* M.O. No. 222g (Tables). Pp. xviii+115. (London: H.M. Stationery Office, 1924.) 24*s.* net.

THE outstanding feature of this work, gathered from a rough examination, after realising the immense labour in its production, is the valuable step made by the publication of the several annual results towards interpreting aright the causes which influence the weather and its changes in different parts of the globe. The monthly and annual means afford much material for study, especially now that results are available for six years, 1910–1915, and year by year the data are accumulating. For the present volume, observations are utilised for 434 stations. It is to be regretted that so far data from the sea have not been included; over the Atlantic, and somewhat in other oceans, where daily synchronous charts are or can be prepared, observations could be fairly easily obtained. Monthly charts for the several elements would facilitate immensely the study of the material.

The following are typical of some facts to be gathered from the work: the mean pressure results for the year show that the highest mean pressure is 30·22 in. at Tanana in 65° N. and 152° W., the lowest 29·28 in. on the *Endurance* in 73° S. and 44° W. The highest mean temperature for the year is 86° F. at Khartoum in 16° N. and 33° E., the lowest 13° F. at Markovo-sur-Anadyr in 65° N. and 171° E. The greatest annual precipitation is 12,875 mm. (507 in.) at Cherrapunji in 25° N. and 92° E., the bulk of which falls in the four