

Phytopathology

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BOOK REVIEWS

Pathologie des Protoplasmas. By Ernst Küster. 200 pp., 36 figures. 1929. Gebrüder Borntraeger, Berlin.

The present volume is submitted as Part I of a more inclusive work, "Pathologie der Pflanzenzelle," announced as Volume III of a series of monographs on protoplasm completed or in preparation by authorities in various lands, the titles made known thus far appearing either in English, German, or French. Like the treatise on pathological plant anatomy by the same author, the several editions of which have served widely and well for more than two decades, the book presents a large mass of information gathered from numerous scattered sources. The text is divided into two chapters; the first, "Changes in Form," includes under separate headings discussions on plasmolyses, experimental shaping of protoplasts, divisions of protoplasts, protoplasmic deposits, plasmoptysis and related phenomena, local necrosis, and increase in size of uncovered protoplasts by swelling. In the second chapter, "Changes in Structure," are included sections dealing with changes in layered structure of protoplasm, coagulation of protoplasm, vacuolate or foamy degeneration, and swelling of protoplasm.

As the term "protoplasm" is used throughout the book in the sense in which it was early employed by Mohl, referring therefore to the material later designated as cytoplasm, any discussion of the nucleus or of chromatophores, except in occasional passages, is excluded. Yet, the variety of phenomena that comes in for attention is a surprisingly large one, and the student who can read any considerable portion of the text without uncovering some reference or other to some manifestation of protoplasm which he had not suspected was recorded in the literature is either unusually well informed or has not used his microscope to good purpose. I experienced an agreeable surprise, for example, on reading the section on "Plasmoptysis and Related Phenomena" to discover the wealth of observations extant concerning the expulsion of protoplasm from cells provided with walls, instances of which had frequently come to my notice in examining cultures of phycomycetous fungi. It is to be regretted that at times owing to the plethora of material available for discussion—the bibliography occupying 28 well-filled pages—the author was constrained often to summarize more rigorously than might be expected in a monographic treatment. This brevity, however, together with the commendable avoidance by the publisher of wastefully wide margins, disagreeably thick paper, and unnecessarily large print, so often employed to augment bulk and price, has resulted in a compact volume at once convenient to use and not excessively expensive.—CHARLES DRECHSLER, Bureau of Plant Industry, Washington, D. C.

Phytopathologische Zeitschrift. Edited by E. Schaffnit in collaboration with Appel (Berlin-Dahlem), Brierley (Harpenden), Foëx (Paris), Gassner (Braunschweig), Gäumann (Zurich), Jaczewski (Leningrad), Klebahn (Hamburg), Liro (Helsinki), Müller (Angora), Naumov (Leningrad), Petri (Rome), Hemmi (Kyoto), and Westerdijk (Baarn); 1 to 2 volumes appearing each year, each volume consisting of 6 issues; published by Paul Parey, Berlin. 1929—.

The "Phytopathologische Zeitschrift" represents a continuation of the "Forschungen auf dem Gebiet der Pflanzenkrankheiten und der Immunität im Pflanzenreich," brought to a close with the fifth issue at the end of the year 1928. In the publisher's announcement the new periodical is described as resting upon an international foundation—and this description has been substantiated tolerably well by the first volume, which appeared in 1929, as well as the several parts of the second volume already published. For, although of the twenty-three papers contained in the first volume, only two are in French and only one is English, the disproportion in favor of German is pronounced more in respect to language than to source, inasmuch as of the twenty remaining papers not more than eleven are referable to German laboratories, four of the other nine written in German having had their origin in Russian, two in Dutch, two in Swiss, and one in Italian establishments. The German displayed in the articles contributed from outside the German-speaking regions shows little or nothing in the way of obviously alien peculiarities. However English-speaking readers may perchance find some refreshing enjoyment in the novel though sometimes fetching expressions to be encountered in the one article appearing in their language.

For the most part the papers in the first volume of the "Zeitschrift" are expressive of the more intensive type of investigation which, especially during the last two decades, has provided increase both in fundamental knowledge and in economic mastery. Among subjects dealt with may be mentioned, for example, the effect of carbon dioxide on development of rust, the breeding of wheat for resistance to stripe rust, the varietal response of wheat and oats to stripe rust and loose smut, respectively, the physiologic races of stem rust, the influence of fertilizers on the susceptibility of plants to disease, the pathological effect of virus diseases on cell structure, and the biochemistry of potato-tuber rot caused by late blight. Yet, the older aspects of plant pathology have not been neglected. At least three papers are devoted primarily to the description of various parasitic fungi, one paper deals at some length with the phylogeny of fungi, another is devoted to the description of a new bacterial disease of chicory and the organism responsible for it, and still another discusses the bacteria associated with clubroot.

The new journal is put up in excellent form, the paper being of good quality, the type clear, and the margins sufficiently but not unnecessarily wide. The half-tone reproductions of photographic originals, as well as the colored plates, are of uniformly high merit. The drawings are always well reproduced, whether, as fortunately must often have been the case, the originals were carefully executed, or whether, as evidently was true in other instances, the somewhat cavalier draftsmanship of the contributor can hardly have promised an edifying end product. All in all, the periodical well deserves the place in the front rank of scientific publications which apparently it already occupies. That it will be found in all libraries serving the needs of plant pathologists may be taken for granted. I predict, however, that copies in lending libraries will be out much too frequently to be immediately available and that the active worker will find such measure of comfort in having a complete set on his own shelf as will repay him many times over for the outlay of the rather high, though according to European standards, not excessive price of subscription.—CHARLES DRECHSLER, Bureau of Plant Industry, Washington, D. C.