

LIBRI NOVI

A. FREY-WYSSLING, *Die pflanzliche Zellwand*, Springer-Verlag, Berlin 1959, 367 p.p. (German) DM 69.60.

This treatise on the plant cell wall is a revised and greatly enlarged edition of a monograph published in 1935; its author is well known for his contributions to modern knowledge of the subject. He divides his survey into three sections, (1) structure and development, (2) chemistry, and (3) biophysics of the cell wall. The first section deals descriptively with the microscopic and submicroscopic structure of the various kinds of cell walls or wall layers, and their possible modes of formation during growth and differentiation, emphasizing and richly illustrating the results of electron microscope study, while drawing on a wide variety of other research as well. The section on chemistry surveys the chemical structure, occurrence and detection of the types of cell wall constituents, but does not attempt very much coverage of or introduction to the extensive chemical literature in this area. The third (biophysics) section discusses fairly extensively the theory and technique of measurement of such properties as X-ray diffraction, birefringence, light absorption, dichroism, density, swelling and tensile strength, showing how they can be used in characterizing the submicroscopic structure, an approach in which FREY-WYSSLING has long been active.

Although some literature as late as 1958 is included in the book, the coverage of developments or ideas not even that recent is by no means complete. For example, the polyuronide crosslinkage hypothesis for action of auxin in promoting cell wall growth is not mentioned, and the section on cell wall analysis is oriented largely toward the classical cell wall fractions as distinguished by extraction with different solvents, and important literature both in this area and in cell wall growth is omitted. The possible role of cell wall submicroscopic structure in controlling morphogenesis during growth also receives little attention.

While concerned mostly with higher plant material, there is a good deal of information about cell walls in lower plants scattered through the book, perhaps not as easily available as might be, because of a somewhat spotty index (among matters discussed in the text, which I was surprised to find *not* in the index were *Acetabularia*, root hairs, slime molds, *Acetobacter*, *Oscillatoria*, *Avena*, and coleoptile). About 6 pages are devoted to chitin, and there are shorter treatments of yeast cell wall and cell walls or wall constituents of blue-green and other algae. Bacterial cell walls are also covered, perhaps in rather abbreviated fashion relative to present

interest in this subject. There is some, but not extensive, treatment and illustration of types of fungal digestion of cell walls.

The volume certainly affords a valuable source of literature and of illustrative material on cell walls and is a fertile bed of ideas on various aspects of their function and structure.

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PETER M. RAY

HAZEN, E. L. & REED, F. C.: *Laboratory Identification of Pathogenic Fungi simplified*. Pp. 150, illustrated.

C. C. Thomas, Publisher, Springfield, Ill. U.S.A. 1960.

Five years after the first edition of this remarkable text a second edition became necessary which is dedicated to the memory of the late Dr. RHODA W. BENHAM. The objective of the second edition remained the same as that of the first—an aid in the teaching of the essentials in the identification of pathogenic fungi to the beginner. The text deals with the subject matter under three broad headings: (1) Superficial mycoses, (1) Deep-seated mycoses, (3) Contaminants. In an appendix formulae of the most useful culture mediums are presented for the proper isolation and identification of fungi.

The didactic presentation of the subject is most excellent. The discussion of every microorganism is preceded by a "case" bringing the mediums for development of significant characteristic, macroscopically and microscopically. Then, a short, concise description of the clinical appearance of the mycosis follows with the headings: Specimens for examination, Cultural and microscopic characteristics, Pathogenicity for animals. Finally, a full page of illustration brings the features of the giant culture, the microscopical appearance in culture and the fungus' appearance in tissue sections. Drawings are completely eliminated, all the details are presented as photographs and photomicrographs of the highest quality as true documentary evidences. The accompanying text is clear, concise and sufficient. The authors have to be congratulated to their unique didactic achievement. This text is a fine tool for the identification of pathogenic fungi and for the so bothersome contaminants. The availability of this text should be a "must" for every mycological laboratory. Needless to say that the physical appearance of the book in every respect is of Thomas quality. It can be highly recommended.

TIBOR BENEDEK

DEIGHTON, F. C., Studies on Cercospora and allied genera. I. Cercospora species with coloured spores on Phyllanthus (Euphorbiaceae). Mycological Papers, No. 71, Commonwealth Mycological Institute, Kew, Surrey, 23 pp., 11 figs. Price 9 sh.

ELLIS, M. B., *Clastosporium* and some allied Dematiaceae-Phragmosporae. II. Mycological Papers, No. 72. Commonwealth Mycological Institute, Kew, Surrey, 75 pp. 58 figs. Price 25 sh.

The remarkable revival of interest in the imperfect fungi in recent years has been reflected in the numerous papers devoted to them, of which some of the most interesting and valuable have been included in the present series.

CHUPP's monograph of *Cercospora* recognized only one species on *Phyllanthus*, a very large, almost entirely tropical genus of the Euphorbiaceae. DEIGHTON recognizes six, describing three as new and redescribing the other three, one under a new name, adding notes on two additional species on related hosts. All are illustrated and a key is given to the six species on *Phyllanthus*.

ELLIS discusses a group of widely distributed but scantily collected genera, bringing together scattered references, redefining the genera, making transfers and providing keys to the species of four of them. The genera recognized are *Bactrodesmium*, *Bactrodesmiella* gen. nov., *Brachysporiella*, *Endophragmium*, *Stigmina*, *Clasterosporium* and *Sporidesmium*. Of the 58 species described and illustrated, only 13, including one validated name, bear current names. There are 25 new names or combinations and 20 new species.

Despite the title, it is to be noted that a number of the species could not easily be referred to the genera to which they are assigned by using a key based on SACCARDO's system. *Stigmina*, e.g., while predominantly phragmosporous, includes several dictyosporous species. At least one species of *Endophragmium*, as illustrated, would almost certainly, and originally was, referred to the Stilbellaceae. The synonymy of several of the older species is eloquent testimony to the difficulties involved. Nevertheless, while the inadequacies of the Saccardian system are becoming increasingly evident, it has served long and honorably and there is as yet nothing available to take its place. It is earnestly to be hoped that some general revision of the imperfects following current ideas of classification can soon be prepared. The obstacles in the path of such a revision are clearly recognized, and obviously anything of the sort done at the present time would be more than usually tentative. But even so, it would be so useful and the need is so urgent, that a highly provisional revision would be widely welcomed.

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Allergie und Allergische Erkrankungen, edited by E. RAJKA, with the collaboration of 21 noted investigators. With 228 illustrations, 52 tables. Vol. II. 1003 pp. Publishing House of the Hungarian

Academy of Sciences. Alkotmány u. 21. Budapest V. (German), 1959.

Vol. I of this handbook, reviewed in this Journal (cf. vol. XII, p. 96), dealt with the general theoretical concepts of Allergology. The present vol. II brings its clinical part. There are chapters on allergic diseases of the respiratory organs, of the gastro-intestinal tract, of the cardio-vascular system, followed by chapters of the allergic diseases of the skin, of the blood and blood forming organs, and of the kidneys. Furthermore, the allergic conditions in tuberculosis and in syphilis are discussed.

The medical mycologist will be mainly interested in the chapter of E. FÉJER on Fungous Allergy. When one would need a classical demonstration, how a one-sided investigation, based on the use of a single tool, may lead to the gravest clinical and etiologic errors, this chapter would provide all the evidences. Allergy and allergic skin reactions are the only principles, by means of which the author is able to look at dermatoses. Results of investigations of the last three decades obtained by the classical and concurring methods of bacteriology and histopathology do not enter the picture at all. A fungus culture is equated with fungus disease and adding a positive skin test, we have an allergic fungus condition. The center of all troubles is the interdigital and nail "mycoses" as a constant, feeding source of allergens. That in "interdigital mycosis" the primary lesion is a tiny blister and/or pustule which may or may not be sterile for the specific causative organism is nowhere mentioned. It is apparently unknown to the author that up to now there are only three cases of known primary onychomycosis, those described by STÜHMER. Classical forms of seborrheic dermatitis, nummular eczema and even neurodermatitis are of mycotic origin since they show positive allergy to this or that fungus extract. The dermatological nomenclature is most confusing. There are "dysidrosiform epidermophytids", "dysidrosiform eczemas", epidermophytids which look identical with the "dysidrosis" of TILBURY FOX, which in turn, as we learn, is identical with the pompholyx of HUTCHINSON . . . RAVAUT and RABEAU's "levurids" are revived as classical examples and manifestations of allergy to yeast-like fungi, although these levurides are classical examples, histopathologically and bacteriologically, of seborrheic dermatitis, an endoparasitic skin condition.

Almost the whole dermatology is included in the fungus allergic manifestations, and explained away in allergologic terms with complete disregard of classical clinical dermatology, histopathology and bacteriology. This trend of allergologic research is discrediting the seriousness of the method and its otherwise well established results. Skin testing and an allergic reaction might be a clinical help but not a supreme judge in establishing an etiologic diagnosis. In this respect we face the same facts as with the results of serology. We have at present about forty different causes of a biologically unspecific serologic reaction for syphilis!!

In FEJÉR's chapter we have the final impression after its careful scrutiny that dermatology and dermatomycology have to be saved of allergology. As to the positive fungus cultures one is reminded of the old adage: "I saw a rabbit climb on a tree, if you don't believe it, I'll show you the tree".

TIBOR BENEDEK

CLARKE, G.H.V.: *Skin Diseases in the African*

Pp. VIII & 169, Demy 4to. With 261 illustrations in the text, 1 colored plate and an extensive bibliography. Price: £ 4 4s or \$ 11.80. H. K. Lewis & Co. Ltd. London, 136 Gower Street, W.C.1. 1959.

This neatly presented volume gives a good opportunity to medical mycologists to enlarge their horizon. This volume is devoted exclusively to dermatology in the Negro based on the author's own experience in West Africa, the homeland of the Negro race. Diseases more or less peculiar to the African are treated more exhaustively than those diseases common also in the white race. As one can expect Nigeria and more particularly, Southern Nigeria with its humid, tropical climate is a hot bed for fungus diseases. Among the dermatological cases coming to the Lagos, Nigeria clinic fungus diseases (all forms) with 20.6 % take the second place in frequency! *Tinea capitis* is common due to *Microsporon audouinii*. Other species frequently encountered are *T. soudanense*, *T. ferrugineum*, *T. violaceum*. *M. felineum* is apparently absent. Favus (*A. schoenleinii*) is common. In tinea corporis *T. rubrum* is leading with 60 %. *T. ferrugineum* and *T. soudanense* attack the glabrous skin, too. Dealing with the superficial fungus infections there is a misleading caption. In fig. 233 it is said "Pinta' from *Tinea flava achromia parasitaria* (blood serology negative)". Since 1938 we know that "pinta" is not a fungus disease (although mycologists excelled in discovering a host of the most different fungi in the scaly lesions of "pinta") but a spirochaetosis. Furthermore "blood serology" cannot be negative or positive, for that matter, the author certainly means the "serologic test" of the blood. Interesting is the absence of the deep seated mycoses. North American, South American and European blastomycoses were not reported. Coccidioidomycosis is absent. Chromoblastomycosis, histoplasmosis were observed. The illustrative material is excellent, the most extensive bibliography is useful. The production of the book is outstanding. It can be highly recommended.

TIBOR BENEDEK

HUNTER, G. H., FRYE, W. W. and SWARTZWELDER, J. C.: *A Manual of Tropical Medicine*. Third edition. Illustrations: 323, 8 in color, 892 p. W. B. Saunders Co. Philadelphia, Pa. Price: \$ 15.—.

Tucked away in larger volumes of medical treatise of general scope there often are short chapters on medical mycology to round out the whole picture. This is the case in this volume of a well known, much used Manual. The chapter on mycotic diseases is written by the distinguished mycologist, NORMAN F. CONANT and encompasses altogether 40 pages. It succinctly covers the whole range of superficial and deep seated (systemic) mycoses.

Medical mycology is a borderline science, i.e. at one end as far as superficial mycoses are concerned, deeply dips in clinical dermatology; at the other end, i.e. concerning the deep seated (systemic) mycoses, it reaches far into the field of internal medicine proper. For that reason, "pure" mycologists have a difficult time and walk on an extremely thin ice at the moment, when the etiologic and pathogenetic significance of fungal organisms come up to be evaluated. Due to these facts, one has to scrutinize such short treatise from both the mycological and from the clinical angle. As far as the mycological facts are concerned, CONANT'S presentation is correct. Concerning the clinical evaluation of the fungal organisms it is a chain of unqualified errors. In the clinical part CONANT relied on a wholly misinformed dermatological advice, bringing the illustrative material of NOOJIN and CALLAWAY of Duke University. "Dermatophytosis", "Onychomycosis", "Otomycosis" are treated in etiology and pathogenesis as it was known thirty years ago. The research of the last three decades went by completely unnoticed.

CONANT is not only mycologist but also a noted bacteriologist and thus, he has all the qualifications to control that "dermatophytosis", "onychomycosis" are etiologically and pathogenetically not of fungus origin, but bacterial-endoparasitic. What is called "otomycosis" is again not a fungus disease of the external ear canal; fungi (*Penicillium*, *Mucor*, *Aspergillus*) vegetate there in detritus masses of the inflamed skin of an entirely different etiologic origine. Fungi do not play any part in it. Due to these grave errors the part of superficial mycoses has no value at all. The deep seated mycoses are presented in the usual fashion. There are no etiologic or pathogenetic errors, since the diagnosis basically rests on the histopathological findings.

The volume as a whole excellently presents the material on tropical diseases with well selected illustrative and graphic material. The physical appearance of the volume is excellent.

TIBOR BENEDEK

A. CHAVES BATISTA; *Monografia dos fungos Micropeltaceae*. Publicação No. 56, Instituto de Micologia, Universidade do Recife. One vol. Pp. 519. with 228 fig. Recife 1959.

The family, Microthyriaceae (Hemisphaeriaceae) order Micro-

thyriales (Hemisphaeriales) are tropical, mostly foliar Ascomycetes, characterized by small (about 1 mm) superficial thyriothecia, as a rule meandriform, without internal and free mycelium.

It is quite a critical group of fungi, whose species are encompassed in four subfamilies, including about 45 genera, fifteen being new for science. Many new species and new combinations are proposed, in part, after direct revision of the specimens, or accepted on the basis of a critical revision of the previous descriptions. Almost all the species studied on the real material are illustrated.

This monograph is based on classical morphological characteristics: shape of the ascostromata; presence or absence of the ostiole and type of dehiscence; presence and number of septa of the ascospores; presence or absence of paraphysis. If present, the pycnidiospores are described, but the species not named.

This massive and well illustrated monograph is a thorough revision of actual knowledge on this little known family of fungi, and the Author and his staff is to be congratulated for the work.

Professional mycologists, for whom this publication is intended, can judge its merits; after continued use, they may be in a condition to decide the usefulness of the application of SACCARDO'S strict criteria for this group of fungi. That it will be used, and, despite possible shortcomings, it will become a standard, is beyond question.

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HEUNERT, H. H.: *Praxis der Mikrophotographie*. 2. Auflage. Mit 80 Abbildungen in 120 Einzeldarstellungen, VII, 96 Seiten, Gr. 8. Springer-Verlag, Berlin, 1959, Preis: D.M. 19.80. (German).

Although we have a number of outstanding texts on photomicrography in English, we feel that it is always useful to look into what the other fellow does and how he does it. Under four headings this text presents (1) equipment for photomicrography, (2) methods of microscopical investigations (bright and dark field,¹ phase contrast, polarized light, fluorescence), (3) technique of exposure, (4) advice from the practice for the practice. The illustrative material for equipment and for test examples in animal and plant tissues is numerous and excellent. The production of the book is in every respect the best. This reviewer repeatedly had the opportunity to underscore the importance of photomicrography in mycological work of any and every description. It is always documentary. This small, excellent volume can be highly recommended.

TIBOR BENEDEK

GRAY, W. D.: *The Relation of Fungi to Human Affairs*. Profusely illustrated. 510 p. Holt, Rinehart and Winston, Inc. New York, N.Y. Price \$ 8.50, 1959.

This volume presents the subject of mycology in a most unusual way. In twenty-five chapters it deals with the beneficial activities of Fungi (Part I) and then, it discusses their harmful activities (Part II). In this comprehensive and penetrating text, the author considers both aspects, describing in detail not only the harmful activities, but also the many current uses and vast potential of fungi as controlled agents working for man. Throughout the text the author emphasizes fungus physiology and function, rather than fungus morphology. There are chapters on destruction of organic waste, on industrial mycology, on alcoholic fermentation, on the synthetic activities of fungi (synthesis of gallic, citric, gluconic acids, etc.), on fat production, etc. The chapters on harmful activities deal with plant diseases, destruction of timber and timber products, tropical deterioration of materials, food spoilage, etc. Finally a short chapter deals with medical mycology.

The volume is excellently written in a most interesting context with human affairs. The illustrations, the graphs are well selected and contribute a great deal to the understanding of the text. Every chapter has its own well selected bibliography. A good index enhances the usefulness of the volume. This volume presenting mycology in the most interesting, dynamic way can be warmly recommended for the library of every mycologist.

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