

REVIEWS

WANG, C. J. K., *Fungi of pulp and paper in New York*. (Technical Publication No. 87 of the State University College of Forestry at Syracuse University). Pp. 115, 88 text-figures, 16 text-plates. Price \$ 1.75.

During the manufacture of paper living organisms may be the cause of undesirable slime deposits (consisting of bacterial colonies and fungus hyphae) in the machines. An extensive literature on this subject has accumulated and many of these fungus species have been isolated and described. The aim of Mrs. Wang's investigation is not only to determine the species and their frequency in pulp and paper mills in New York State, but also to provide a compendium describing and illustrating the fungus species in order to facilitate their recognition by workers in this field of microbiology and mycology.

Following a "Review of Literature" and a chapter on "Materials and Methods" there is a chapter entitled "Results and discussion". The bulk of the contents, however, consists of the isolated species: Phycomycetes (8 species), Ascomycetes (6), Basidiomycetes (8), Fungi imperfecti (86), and Actinomycetes (7). Of each species at least one and very often many cultures were studied. The descriptions of the colonies are clear and in conjunction with the illustrations they should enable future workers to recognize the species described. To this *Penicillium* forms an exception since no descriptions and illustrations of this genus are given; Raper & Thom's manual on the genus is referred to. With a few exceptions the photographs reproduced on the text-plates are of cultures on plates. A lengthy bibliography is added.

As is becoming more and more usual in North American monographs treatment of separate species lacks any references to descriptions and illustrations by other authors although these are widely found in the literature. In so far as these contain supplementary details and additional figures they may be of importance in furthering understanding of the taxa.

This 'Flora' will undoubtedly prove very useful since within recent times no other so comprehensive a survey on the subject has been published.

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M. F. MADELIN (Ed.). *The Fungus Spore*. Proceedings of the 18th symposium of the Colston Research Society (Bristol, 1966) (Butterworths, London, 1966). Pp. 338, illustrated. Price £ 6.—.—

The part played by fungus spores in the variation, dispersal and survival of fungi is of major significance not only for mycologists, but also for physiologists, systematists, biochemists, cytologists, geneticists, and plant pathologists. It was therefore an

excellent idea to bring a group of scientists together in the above-mentioned symposium to elucidate the various aspects of spores and phenomena related to them.

The proceedings of the symposium contain 24 articles; these can be divided roughly into four groups. Leaving out of consideration the introductory article the four groups are as follows:

1. Initiation and structure of spores. The first article of the six in this group deals in a general way with the genesis of spores of higher fungi and furnishes an excellent outline of the subject. This article is of special interest to the systematists. The other articles refer to research on species or small systematic groups, belonging for the most part to the Phycomycetes. It is striking that the electron microscope is becoming increasingly important in morphological and structural studies.
2. Liberation and dispersal of spores. The main article of the four under this heading deals with the violent discharge of spores. The explosive ascus, the ballistospore and discharge in conidial fungi, including the Phycomycetes, are treated. The other articles deal with air and water dispersal, with special reference to funig of economic importance.
3. Morphology, physiology and biochemistry of spore germination. No less than nine articles are devoted to this topic. Two of the articles refer to morphological and anatomical changes during germination and to the assessment of germination. The other articles treat of the orientation of zoospores and germ tubes, chemical factors in the germination of the spores of Basidiomycetes, respiration and spore germination, biosynthetic processes in germinating spores, types of dormancy as represented by conidia and ascospores of *Neurospora*, the effects of sterols and light on the production and germination of *Phytophthora* spores, and the germination *in vitro* of conidia of powdery mildew fungi. The articles of this group contain a considerable amount of very interesting and entirely new information. It is evident that fungus spores offer an excellent medium for physiological and biochemical studies.
4. Applied aspects. The first two articles of this group discuss the interaction of spores with fungicides; they are closely related to the preceding group. The following two articles deal with epidemiological aspects of spores and treat of spores as propagules of (plant) disease as well as spores in allergies and mycoses of men and animals.

As already indicated, this publication has a wide scope and gives an excellent survey of many aspects of the fungus spore. It must be admitted, however, that one important aspect has been omitted: the significance of the fungus spore in taxonomy. Furthermore it should be borne in mind that as this publication presents the proceedings of a symposium it does not cover adequately every detail of the various subjects treated. Nevertheless the book is strongly to be recommended. The layout is very good and the numerous figures, which are clearly printed, are clear and instructive.

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