

of the larynx) infected with a type I foamy agent. Recently, BERTHIAUME and JONCAS (1973) observed almost identical tubular structures both in HEP-2 cells infected with respiratory syncytial virus and in uninfected (control) HEP-2 cells. These tubular structures showed also a honeycomb appearance with electron dense rings 8 nm in thickness, they were closely packed together with a centre to centre distance measuring approximately 22 nm; they were entangled in a haphazard way in the cytoplasm, usually in the vicinity of the nucleus. BERTHIAUME and JONCAS (1973) do not exclude their virus origin.

The tubular structures found in mycoplasma infected cells of apple trees show identical shape, like in HEP-2 cells, however their size seems to be larger. Our electron micrographs do not allow to presume any connection with any plant cells organelles; their connection with mycoplasmas could not be proved as well. Therefore the nature of tubular structures found remains unknown.

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References

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BOOK REVIEWS

JOHN, B., LEWIS, K. R.: **The meiotic mechanisms.** — Oxford Biology Readers. Vol. 65, Oxford University Press, London 1973. 32 pp. 60 p.

Authors of this booklet succeeded to make the most complex cytogenetic picture of the meiotic events. The booklet contains 39 microphotographs, 19 illustrations and 5 tables. It deals with the role of meiosis in the life cycle of different taxons, cytogenetic characteristics of the meiotic process, genetic consequences of meiosis and genetic control of the meiotic process. The booklet includes also detailed survey of contemporary hypotheses concerning the molecular mechanisms of chromosome pairing, synaptonemal complexes and crossing over. In the whole, it is the best contemporary review of the meiotic process. Complicated things are explained in a simple, understandable form and the text is supported by clear-cut illustrations. It is very useful booklet for all genetists and cytologists.

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BYRDE, R. J. W., CUTTING, C. V. (ed.): **Fungal Pathogenicity and the Plant's Response.** Proceedings of a Symposium held at Long Ashton Research Station University of Bristol 22—24 September 1971. Academic Press, London and New York 1973. 499 pp. £ 8.50.

This book makes an important contribution to physiological plant pathology. Leading European and American authorities presented a detailed account of current research on the activity and mechanisms involved in interaction between the plant and fungal pathogens. In the inaugural lecture Professor R. K. S. WOOD, President of the International Society for Plant Pathology, emphasized the importance of specificity in plant diseases. The problem of specificity dominates much of plant pathology because, although plant pathologists are preoccupied with plant disease, they cannot remind themselves too often that disease is a relatively rare phenomenon and that particular pathogens are able to parasitize only a very small proportion of the plants available to them. As the Symposium, this book is divided into two parts, "Fungal Pathogenicity" and "The Plant's Response". In "Fungal Pathogenicity" there are three sections: "Direct Involvement of Fungal Proteins" contains contributions about the role of cell-separating enzymes in cell death especially in potato tubers, the role of extracellular enzymes in the rotting of fruit tissue by *Sclerotinia fructigena*, and the control of apple scab disease on leaves. In the second section "The Involvement of Ethylene" the effect of certain bacteria on ethylene production by plant tissues and the importance of ethylene in plant diseases are explained. The problems of the mechanism of ethylene biosynthesis in diseased tissues, the extent to which ethylene is responsible for the symptoms of plant disease, the importance of ethylene in interactions between pathogens and their hosts, and the site of production of ethylene are discussed here. The third section "Obligate Parasitism" presents contributions on the study of the obligate parasites *in vitro*, on the host-parasite relations especially between *Plasmodiophora brassicae* and cabbage and on the means by which cereal rusts and smuts affect host translocation and growth. The most expanded contribution deals with structural concepts of host-pathogen interfaces. Much attention is paid to intercellular and intracellular pathogens and host cell relationships and to the determination of conditions of penetration sites.

In the second part there are two sections. In the section "Induced and Preformed Resistance Factors", induced factors are defined as those formed in response to infection, while preformed factors are those normally present, waiting as it were for the attack. The stress has been laid on the role of phytoalexins in the resistance of various plants to infection by fungi, bacteria and viruses. The final section "Altered metabolism" deals with studies on the biochemistry of plant diseases and resistance, the effect of some enzymes on some fungi, the importance of some enzymes in wilt pathogenesis, the role of lysosomal enzymes and pathogenicity and the enzyme changes of the host plant following fungal, bacterial and virus infection.

The great advantage of this book is the record of the lively discussions. We receive some idea about the control systems at various levels, at genetic level, at enzyme level, at hormonal level, etc. We know now how invading parasites can activate biosynthetic pathways in various ways from the many examples described in this book. Also we know a lot more now of the nature of the activities and of the specificity of the action of macerating enzymes, and about the interactions between cytoplasm, plasmalemma and cell wall. It is possible to say the same about the problem of entry of parasites into the tissues of a plant, about the specificity of the resistance mechanism of phytoalexins, and also about the problem of distinguishing the wound reaction from infection reaction. It is certain that in the new era of plant pathology, plant pathologists must be simultaneously biochemists, molecular biologists, plant biochemists and plant physiologists.

Finally, the book may be recommended as a very recent source of information for research workers, teaching staff and advanced students in agricultural, horticultural and biological institutions.

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