Book review

G. Grunewaldt-Stöcker and F. Nienhaus: Mycoplasma-ähnliche Organismen als Krankheitserreger in Pflanzen (With English summary: Mycoplasma-like organisms as plant pathogens). Verlag Paul Parey, Berlin and Hamburg, 115 pp. with 36 illustrations, 8 tables, subject index and 21 pp. of references: paper cover; DM 44.

Since 1967, a rapidly increasing number of plant diseases, most of them hitherto ascribed to viruses, are being associated with mycoplasma-like organisms (MLO). Mycoplasmatales (class *Mollicutes*) have been known since 1898 as animal and human pathogens. Some are also saprophytes. Their detection in plants has started a new chapter in plant pathology.

The present booklet, which also appeared as a supplement to Phytopathologische Zeitschrift (Acta Phytomedica Heft 5) deals with MLO as plant pathogens. After a short introduction (1) and some data on the classification and properties of Mycoplasmatales (2), a more extensive chapter deals with the physical and biological properties and artificial cultivation of MLO (including *Spiroplasma* spp.) (3). In another chapter, the host plants, symptoms and host ranges of MLO (4) are discussed. The three remaining short chapters concern diagnosis (5), control (6), and relationships between MLO and other micro-organisms (such as Rickettsia-like organisms) and viruses (7). The book includes summaries in German and English, a list of some 300 references and a subject index.

The publication is meant for German-reading plant pathologists and contains much valuable information. The extensive tabular surveys on vectors and plant species infected merit special note. The book does not specifically refer to reviews published in other languages and ignores Ploaie's book (1973) on the same subject in Rumanian. Another publication not mentioned is the extensive bibliography and index on Mycoplasmatales (including those in plants) by Domermuth and Rittenhouse (1971, 1973, 1976).

In the chapters on MLO (3) and their hosts (4), I missed information on the history of the diseases and of their etiology. Pioneering reports on heat therapy of these diseases published before the detection of MLO are not mentioned.

The description of symptoms seems incoherent. Several of the diseases are typical leafhopper-borne witches' broom ('yellows type', or virescence) diseases, but phloem degeneration and ensuing atypical growth disturbances even leading to wilting and premature death may complicate the syndromes. Diseases like pear decline and elm phloem necrosis are exclusively characterized by deviations resulting from phloem degeneration. Such diseases resemble those caused by certain phloem-limited viruses, hence their long confusion with virus diseases.

Seed transmission, as suggested on p. 23, is unlikely. Like phloem-limited viruses, MLO almost certainly cannot invade the embryo and thence infect a developing seedling. Accumulation of MLO of citrus stubborn disease in aborting citrus seeds may easily be explained by an influx of MLO with assimilates into the coat of the developing seed. They seem neither to survive desiccation of the seed coat at seed maturation, nor to be introduced mechanically from there into the developing seedling, in contrast to tobacco mosaic virus in tomato.

The book has been well printed, but most of the symptom pictures have been poorly reproduced. The publication will be of special interest to German-reading plant pathologists with little access to the English literature.

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