

**Citrus Likubin Pathogens in Salivary Glands
of *Diaphorina citri***

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ABSTRACT

Thin-sectioning of infective adults of *Diaphorina citri* fed on Likubin-diseased Ponkan citrus revealed numerous mycoplasma-like bodies in mucous cells of the salivary glands. The bodies were spherical, oval, or filamentous in form. They were surrounded by thin membranes and contained ribosome-like particles. These pleomorphic bodies in *D. citri* were similar to those observed in Likubin-diseased citrus trees.

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It has been commonly accepted that Citrus Likubin in Taiwan is a possible member of the stubborn-greening disease group, and that the causal agents of these diseases are mycoplasma-like bodies located in the phloem tissue cells of the diseased citrus trees (4, 5, 6, 7). Although vectors of stubborn disease are unknown, other members of the group are actually transmitted by psyllid vectors, *Trioza erythrae* Del Guercio and *Diaphorina citri* Kuw. (1, 2, 8, 9, 10). The present paper deals with mycoplasma-like bodies in the salivary glands of infective *D. citri*.

Adults of *D. citri* caged on Likubin-diseased Ponkan citrus (*Citrus reticulata* Blanco.) for about 1 month were fixed with glutaraldehyde for 4 hr (3) and osmium tetroxide for 4 hr (3). Thin-sections prepared from the fixed *D. citri* embedded in Epon 812 were observed in an electron microscope after a staining with uranyl acetate and lead citrate.

Numerous pleomorphic bodies were readily observed in mucous cells of the salivary glands (Fig. 1). They were spherical, oval, or filamentous in form and varied in size. They were surrounded by thin outer membranes. All of them contained ribosome-like particles, and light central areas were observed within some. These characteristic profiles of the pleomorphic bodies in the salivary glands of infective *D. citri* are similar to the mycoplasma-like bodies found in Likubin-diseased citrus trees (4). No mycoplasma-like bodies were observed in the salivary glands of noninfective adults of *D. citri* caged on healthy Ponkan citrus. More detailed distribution of the mycoplasma-like bodies in infective *D. citri* will be discussed in a later paper.

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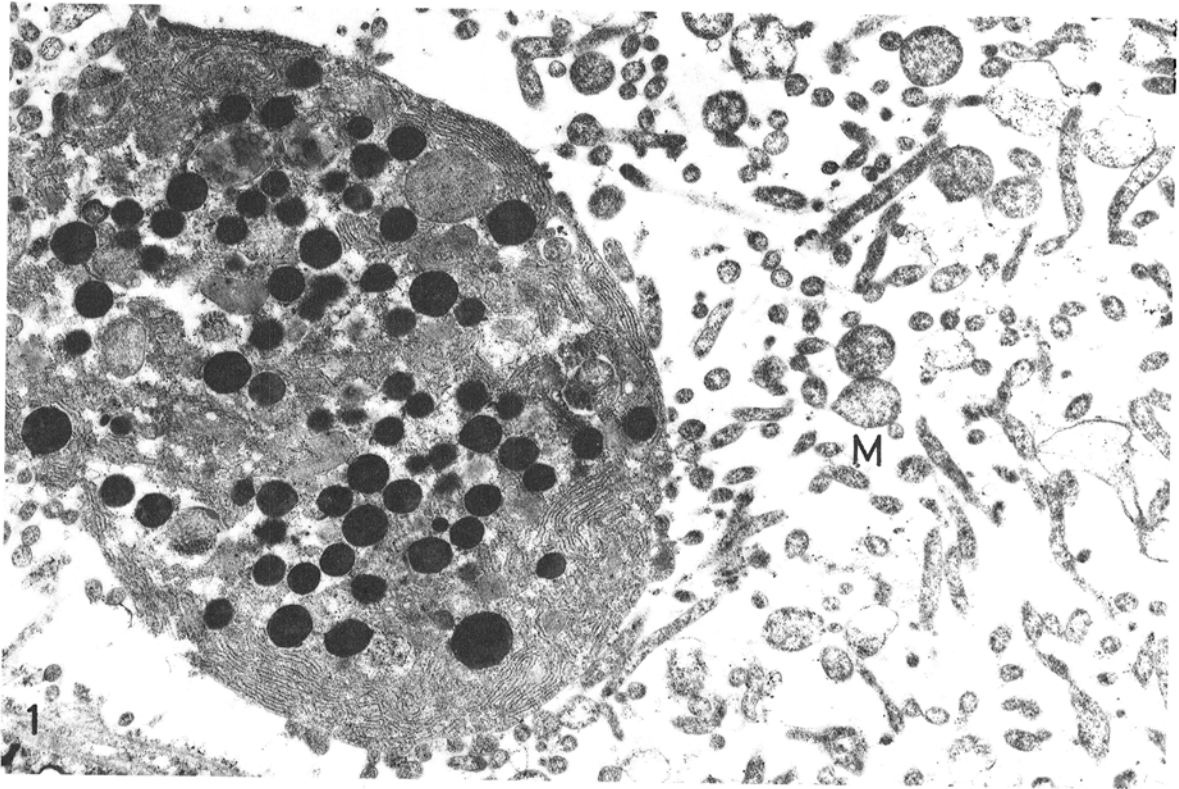


Fig. 1. Numerous mycoplasma-like bodies (M) in a mucous cell of the salivary gland of infective *Diaphorina citri* ($\times 9,300$).

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