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Lethal Yellowing in Texas Phoenix Palms¹

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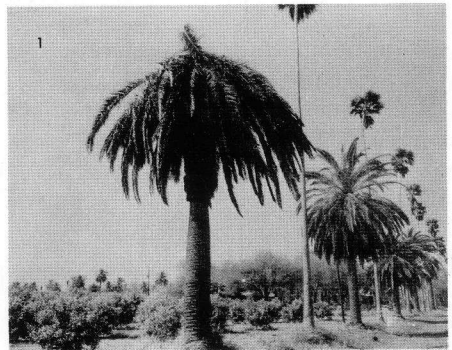
A rapidly spreading, lethal disease of *Phoenix canariensis* and *P. dactylifera* was noted by local plant pathologists in the Brownsville, Texas area approximately two years ago. Since that time, many of these palms have died in this area and the disease has spread 70 km inland up the Rio Grande Valley. Within disease foci, *Arecastrum romanzoffianum*, *Washingtonia robusta*, *W. filifera*, and *Sabal texana* appear to be unaffected by the disease.

Symptoms of the disease are identical to those seen in *Phoenix* palms affected by lethal yellowing in Florida (Fig. 1) (4). Initial symptoms are death of the central whorl of young fronds in the middle of the crown, death of adventitious roots at the base of the trunk, and necrosis of immature inflorescences within their enclosing spathes. This is followed by an off-coloration to a duller, grayer shade of green in the fronds. Fronds turn brown and desiccate beginning with the oldest basal fronds and moving upwards into the crown. Approximately four months is required to complete the progression from initial symptoms to death of the affected palm.

Tissue samples from the hearts of dying *Phoenix* palms in Texas contained mycoplasma-like organisms when examined by transmission electron microscopy (Fig. 2). The identity

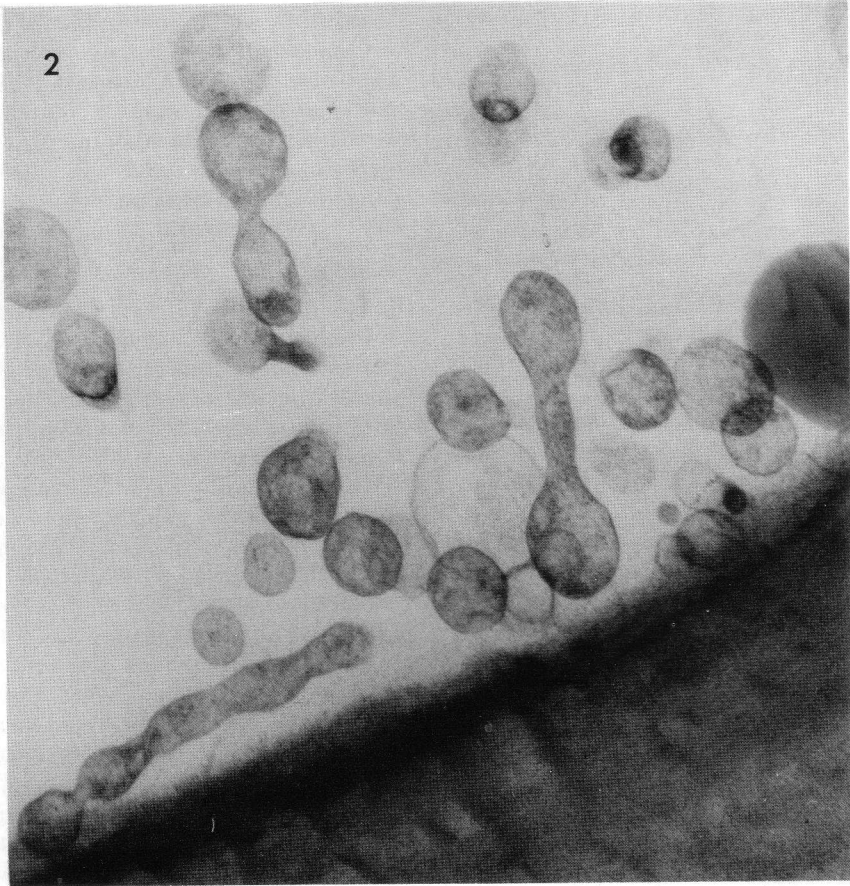
of symptoms and pattern of spread, the presence of mycoplasma-like organisms, and conformity to the lists of susceptible and resistant palm species in Florida all indicate that this disease is lethal yellowing.

The movement of lethal yellowing from Florida or the Caribbean to Texas is a major jump in the geographical range of this dread palm disease. The potential of lethal yellowing to eradicate plantings of susceptible palm species totally has been demonstrated more than amply in Florida and Jamaica. Its potential for rapid spread has been pointed out previously (1,2,3); however, the importance of imposing and enforcing regulations against the movement of susceptible palms from affected areas to disease-free regions must be emphasized again. The most likely avenue for the spread of lethal yellowing to Texas is



1. Dying and healthy *Phoenix* palms interplanted with tall, unaffected *Washingtonia* palms.

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2. Mycoplasma-like organisms within a phloem sieve element of a dying *Phoenix* palm from Texas, $\times 26,000$.

the importation, by man, of infected palms or vector insects. The presence of lethal yellowing threatens eradication of susceptible *Phoenix* palms from the lower Rio Grande Valley and increases the potential for spread to other previously unaffected areas.

LITERATURE CITED

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