Annellophora Leaf Spot of Date Palm in Texas

S. R. VANN, Graduate Student, and R. A. TABER, Research Scientist, Department of Plant Pathology and Microbiology, Texas A&M University and Texas Agricultural Experiment and Extension Stations, College Station 77843

ABSTRACT

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Distinctive circular brown leaf spots were observed on *Phoenix* spp. in the Rio Grande Valley of Texas in 1981. Lesions resembled those produced by *Cercospora* spp.; however, conidia were produced on annellophores rather than on sympodially proliferating conidiophores typical of *Cercospora* spp. The fungus was identified as *Annellophora phoenicis*. This report extends the known geographical range of this fungus and establishes its pathogenicity on *Phoenix canariensis*.

Date palms (*Phoenix* spp.) are important ornamental plants grown both in greenhouses and outdoor plantings in South Texas, where the subtropical climate is ideal for their propagation.

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Foliar spots significantly reduce the aesthetic value and marketability of these exotic trees.

Distinctive leaf spots similar to those caused by *Cercospora* and various other leaf-spotting fungi (4) were observed on date palm (*Phoenix canariensis* Chabaud.) at two locations in the Rio Grande River Valley near Weslaco, TX, in November 1981. The amphigenous spots were brown and circular (Fig. 1) and often reached a diameter of 1 cm. Coalescing lesions often caused defoliation. Typically,

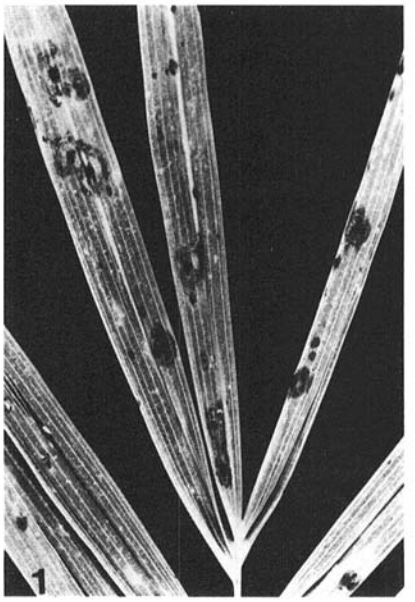
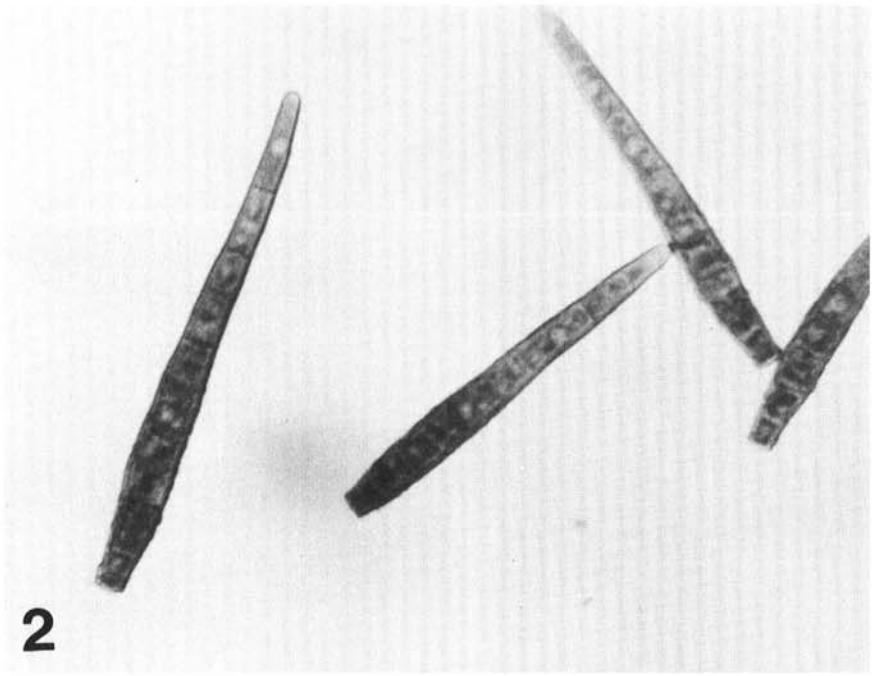
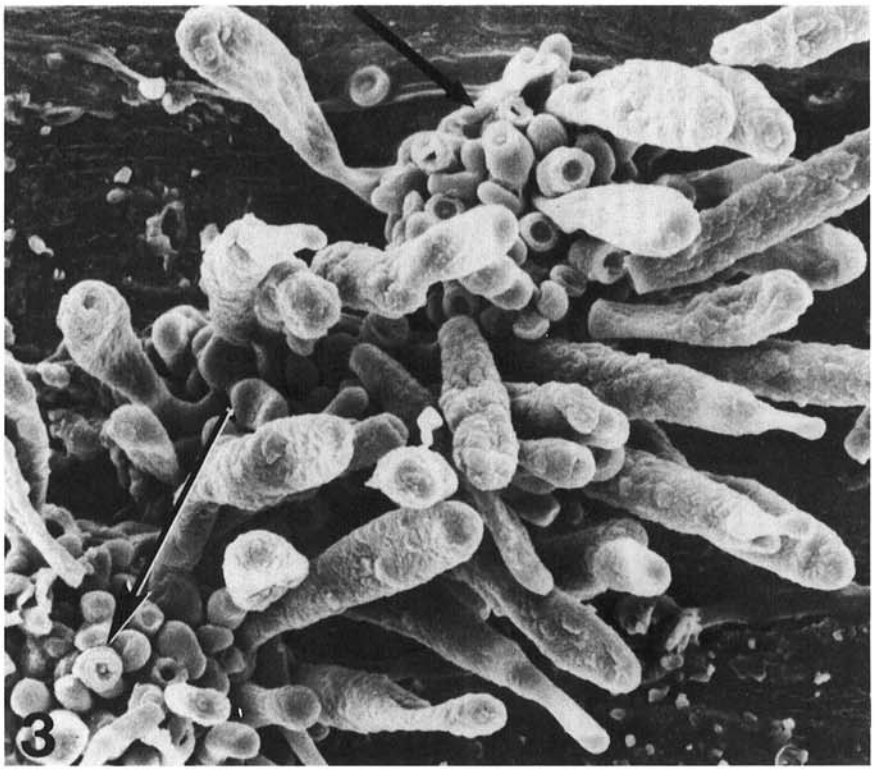


Fig. 1. Annellophora leaf spots on palm.





Figs. 2 and 3. (2) Typical septate conidia of *Annellophora phoenicis*. **(3)** Scanning electron micrograph of annellophores (arrows) and conidia in situ (×100).

the center of the spot was dark brown to black and was surrounded by a lighter halo with abundant sporulation of the fungus at the periphery. Conidia (Fig. 2) were produced on annellophores arising from basal stromatic cells of the leaf lesion (Fig. 3). Conidia were 9–10 septate and measured 50–93 × 5–9 μm. Primary conidia were straight to slightly curved, cylindrical, and pale brown to brown at maturity. The erect conidiophores were produced in fascicles, were straight or slightly flexed, and were swollen at the base. As many as four successive proliferations were observed on the annellophores.

At room temperature, colonies on potato-dextrose agar were dark brown to black, slow-growing with entire margins, and closely resembled *Cercospora* colonies. Conidia were produced on annellophores arising from smaller groups of dark stromatic cells in the medium. Colonies were roughened and appeared somewhat crusty after 3 wk.

Pathogenicity was established by inoculating conidia onto healthy leaves of *P. canariensis*. Twenty-eight leaflets of *P. canariensis* were inoculated one to four times each. Half of the loci of inoculation were wounded with a sterile toothpick. Uninoculated checks were included as controls. Identical leaf spots developed at all loci inoculated. *Annellophora* was reisolated from lesions. The morphology of this fungus conforms to the description of *Annellophora phoenicis* M. B. Ellis (1). This species has been found in the tropical regions of the world, associated with palms in Malaya, New Guinea, and Sierra Leone (1,2). Ellis (1) described *A. phoenicis* from dead leaves of Senegal palm (*P. reclinata* Jacq.).

The similarity of conidia of *Annellophora* to those of *Cercospora* and *Cercosporidium* has resulted in misidentification in the past. The characteristic that distinguishes *Annellophora* from these two common genera is that the conidia of *Annellophora* are produced on annellophores (3). Routine identification can be accomplished by surface-sterilizing leaf spots in 70% ethanol and 0.5% NaOCl and placing the specimens in a moist chamber. Typically, abundant sporulation is evident after 5 days.

A limited survey of date palms at two locations at Weslaco, TX, failed to reveal the presence of Cercospora leaf spot. One of these locations, a commercial nursery, had five potted plants infected with *Annellophora*. The other location was a mixed stand of date palms and other escaped subtropical plants growing along a drainage canal. Examination of 16 date palms there showed that the only leaf spots present were those caused by *Annellophora*. A more extensive survey for the incidence of this disease in the Rio Grande Valley of Texas is under way.

To our knowledge, this is the first report of *A. phoenicis* in the United States. This report illustrates the need for accurate observations on conidiogenesis to ensure correct diagnosis. Voucher specimens are deposited in the Department of Plant Pathology and Microbiology at Texas A&M University.

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