

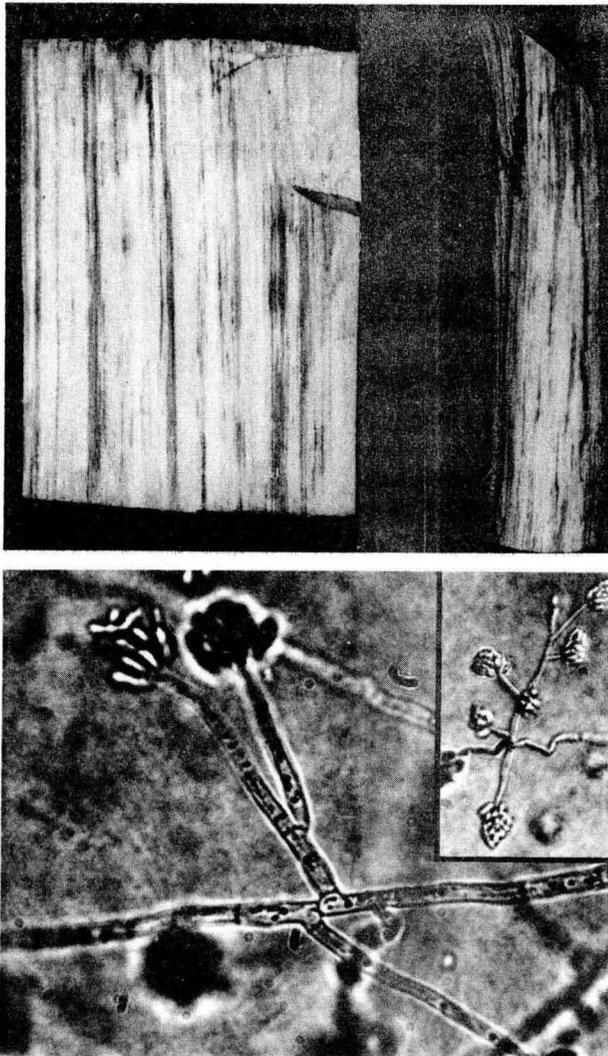
CEPHALOSPORIUM WILT OF ELM IN LOWER MISSISSIPPI VALLEYT. H. Filer, Jr., F. I. McCracken, and E. R. Toole¹

FIGURE 1.

Above -- Tangential view of trunk and limb of diseased American elm showing brown discoloration in xylem adjacent to cambium.

Below -- Photomicrographs of Cephalosporium culture isolated from brown streaks in diseased American elm.

Dead and dying American elms (Ulmus americana) and cedar elms (U. crasifolia) were observed on the Delta Experimental Forest, Stoneville, Mississippi, and in Desha County, Arkansas, near the Mississippi River (about 30 miles northwest of the experimental forest) during August 1967. The only fungus consistently isolated from these diseased trees belonged to the genus Cephalosporium as described by Corda (1) and McKenzie and Johnson (3). This is believed to be the first report of the fungus wilt in the Midsouth.

A survey of one 40-acre compartment in the experimental forest showed the disease to be epiphytotic in 14 acres. Diseased elms were also observed in adjacent areas of the forest. Thirty-seven percent of 119 American elms over 7 inches dbh were diseased, while only 5.7% of 193 smaller trees showed symptoms. Cedar elm did not appear to be as susceptible as American elm, since only 8.5% of 25 larger (dbh 7 inches and over) cedar elms were affected and only 1% of 132 smaller (dbh 6 inches and under) trees.

Symptoms: This disease is characterized by wilting, yellowing, and drying of the leaves. At first only the terminal twigs are affected. Later some leaves on other branches show yellow-green mottling, become necrotic on the margins, and drop off. Diseased parts of the crown look thin. Green leaves that wilt remain attached to the twigs the entire season. These symptoms are similar to those reported by Goss and Frink (2) in Nebraska, and McKenzie and Johnson (3) in Massachusetts. Both sources report that from initial infection until death of large trees may require several seasons.

Brown streaks often appear in the wood adjacent to the cambium even before the external symptoms are evident. Cephalosporium sp. (Fig. 1) was identified in wood chips taken from streaked areas.

¹ Plant Pathologists and Principal Plant Pathologist, Southern Forest Experiment Station, Forest Service, United States Department of Agriculture. Assigned to the Southern Hardwoods Laboratory, which is maintained at Stoneville, Mississippi, in cooperation with the Mississippi Agricultural Experiment Station and the Southern Hardwood Forest Research Group.

Literature Cited

1. CORDA, A. C. J. 1839. *Icones fungorum hucusque cognitorum*. Vol. 3, p. 11. New York: Wheldon & Wesley, Ltd. Reprinted 1963, New York: Stechert-Hafner Publishing Co.
2. GOSS, R. W., and P. R. FRINK. 1934. Cephalosporium wilt and die-back of the white elm. *Nebraska Agr. Exp. Sta. Res. Bull.* 70. 24 pp.
3. MCKENZIE, M. A., and E. M. JOHNSON. 1939. Cephalosporium elm wilt in Massachusetts. *Massachusetts Agr. Exp. Sta. Bull.* 368. 24 pp.

SOUTHERN FOREST EXPERIMENT STATION, FOREST SERVICE, UNITED STATES
DEPARTMENT OF AGRICULTURE