

Scan & Deliver - VALLEY

6/5/2014 12:18:15 PM

Call #: SB599 .P5 v.30 (1940)
Location: Compact Shelves

OSU ILLIAD TN#: 753525



Journal Title: Phytopathology
Volume: 30
Issue: 6
Month/Year: 1940
Pages: 530-533 .

Borrower: Weber, Genevieve L
EMAIL: WEBERG@ONID.ORST.EDU
Email: weberg@onid.orst.edu

Article Author: CHIDESTER, MAE
S.

Delivery location: VALLEY

Article Title: A pink stain of wood
caused by a species of Geotrichum.

Oregon State University Libraries

Library Contact Information:

Valley Library
(541) 737-4488
valley.ill@oregonstate.edu
<http://osulibrary.oregonstate.edu/ill/>

NOTICE:

When available, we have included the copyright statement provided in the work from which this copy was made.

If the work from which this copy was made did not include a formal copyright notice, this work may still be protected by copyright law. Uses may be allowed with permission from the rights-holder, or if the copyright on the work has expired, or if the use is "fair use" or within another exemption. The user of this work is responsible for determining lawful use

Pagers:

Scanners:

Initials: _____ NOS: _____ Lacking: _____

Initials: _____ Date: _____

BC: Checked Table of Contents: _____ Checked Index: _____

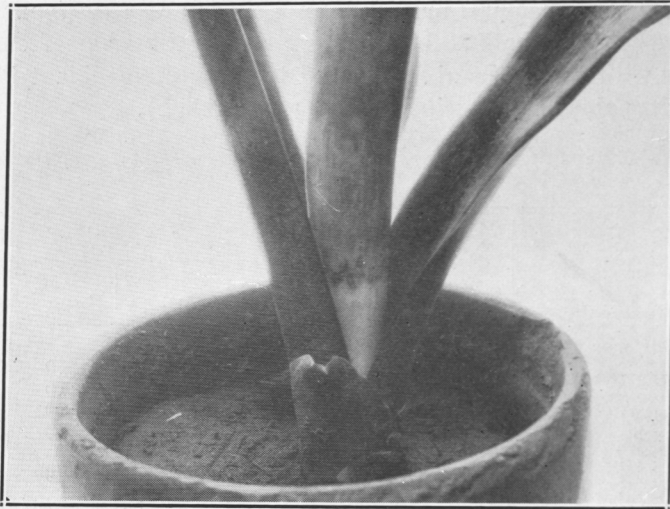


FIG. 2. Infection of Sansevieria leaf near the base by *Fusarium moniliforme* following inoculation of uninjured leaves.

coverage and lack of host injury. Sanitary practices in destroying diseased leaves and care in watering so that spores are not washed about on wet leaves should aid in reducing infection.

DIVISION OF PLANT PATHOLOGY,
 AGRICULTURAL EXPERIMENT STATION,
 THE STATE COLLEGE OF WASHINGTON,
 PULLMAN, WASHINGTON.

A PINK STAIN OF WOOD CAUSED BY A SPECIES OF GEOTRICHUM

MAE SPRADLING CHIDESTER
 (Accepted for publication February 16, 1940)

INTRODUCTION

A jasper pink¹ or light jasper red stain first attracted my attention when some southern yellow pine lumber was received from New Orleans, Louisiana. This lumber was infected with *Fomes pini* (Thore) Lloyd and the stained wood bordered the decayed portion. The material was believed by the consignor to be so-called red heart, a name commonly used for the incipient stage of *F. pini* rot. However, the color was distinctly different from that of red heart. Moreover, it not only bordered the *F. pini* decayed heartwood but extended out from the heartwood into the sapwood. Hubert² described a somewhat similar stain occurring in box elder trees, but no re-

¹ Ridgway, Robert. Color standards and color nomenclature. 43 pp., illus. (Washington.) 1912.

² Hubert, E. E. The red stain in the wood of box elder. Jour. Agr. Res. [U.S.] 26: 447-457. 1923.

port of such a stain in pine could be found. Hedgecock³ reported *Penicillium aureum* Corda and two other species of *Penicillium* as capable of staining pine wood orange red to crimson red, and *Fusarium roseum* Link as the fungus causing pink, red, or violet blotches in pine lumber. Scheffer and Lindgren⁴ reported *Fusarium moniliforme* Sheld. as the cause of pink patches in the sapwood of southern yellow pine. Since apparently similarly stained pine had not been described, it was considered desirable to identify the causal agent.

CAUSAL FUNGUS

A mold was isolated from the pink-stained specimens. When grown at room temperature (about 25° C.) on malt medium⁵ the fungus becomes mealy in appearance in a few days, because of numerous clumps of spores that vary *en masse* from an ivory yellow to a baryta yellow. The malt medium, on which the fungus grows rapidly, soon becomes pinkish. The under side of cultures becomes dark-specked, due to certain portions of the mycelium turning dark brown (Pl. II, A). Some of the mycelium turns a tyrian blue.

The conidia are borne in chains formed by the divisions of the branches of the much and irregularly branched conidiophores (Pl. II, B). The mature spores are hyaline, short cylindrical (Pl. II, C), extreme range 2 μ to 3.6 μ by 2.7 μ to 4.1 μ and sextile range 2.7 μ to 3.4 μ by 3 μ to 3.7 μ . The hyphae vary considerably in size, being from 2 μ to 13 μ in diameter.

The fungus was referred to the genus *Geotrichum* by Diehl.⁶ From a preliminary comparison with descriptions of species of this genus it seems to be a new species, but because of the confusion in the mycological literature concerned with *Geotrichum* and related genera no further attempt was made to classify the fungus or describe it as new.

The author has isolated the same fungus from red-stained cypress heartwood lumber, and Davidson⁷ has obtained it from pink-stained heartwood of a decaying oak log.

THE STAINING ABILITY OF GEOTRICHUM SP.

The staining ability of *Geotrichum* sp. was tested on the heartwood and sapwood of 8 different species of wood. Cultures originating from a single spore⁸ of *Geotrichum* sp. isolated from southern yellow pine heartwood were used to inoculate 10 1 \times $\frac{1}{2}$ \times 10 in. sticks, 5 of which were sapwood and 5 heartwood, of each of the following species of wood: silver fir (*Abies ama-*

³ Hedgecock, G. G. Studies upon some chromogenic fungi which discolor wood. Mo. Bot. Gard. 17th Ann. Rpt. (1906): 59-114. 1906.

⁴ Scheffer, T. C., and R. M. Lindgren. Some minor stains of southern pine and hardwood lumber and logs. Jour. Agr. Res. [U.S.] 45: 233-237. 1932.

⁵ Trommer's plain malt extract 25 gm.
Bacto-agar 15 gm.
Distilled water 1000 cc.

⁶ Diehl, W. W., Division of Mycology and Disease Survey, Bureau of Plant Industry, U. S. Department of Agriculture.

⁷ Davidson, R. W., Division of Forest Pathology, Bureau of Plant Industry, U. S. Department of Agriculture.

⁸ Single-spore isolations made by H. C. Greene of the University of Wisconsin.

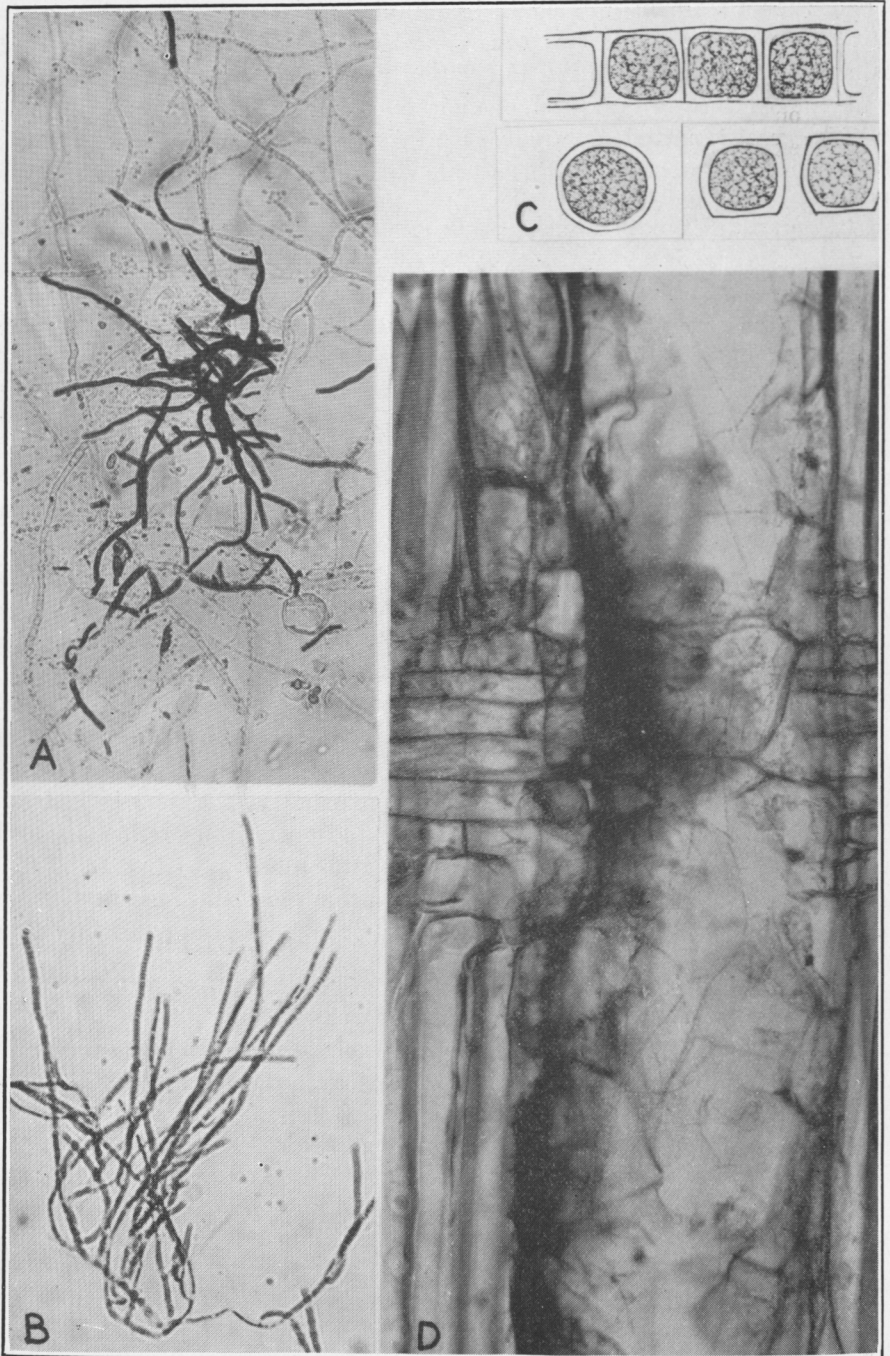


PLATE II. A. Mycelium grown on malt agar. $\times 300$. B. Conidiophores. $\times 300$.
C. Spores. Highly magnified. D. Mycelium in wood. $\times 225$.

bilis (Loudon) Forbes), yellow birch (*Betula lutea* Michaux), black spruce (*Picea mariana* (Miller) Britton, Sterns, and Poggenberg), loblolly pine (*Pinus taeda* L.), Douglas fir (*Pseudotsuga taxifolia* (LaMarck) Britton), red oak (*Quercus borealis* Michaux f.), southern cypress (*Taxodium distichum* (L.) Richard), and western hemlock (*Tsuga heterophylla* (Rafinesque) Sargent). Each stick was steamed 30 minutes at atmospheric pressure prior to inoculation. Within 3 weeks after inoculation all of the sticks were stained from a jasper pink to a light jasper red, the same color as the stained specimens from which the fungus was originally isolated. Sticks with a moisture content of 90 to 100 per cent were stained more intensely and more uniformly than sticks with a moisture content of 40 to 50 per cent. The sticks with high moisture content were stained throughout. Microscopical examinations showed only scattered hyphae (Pl. II, D) throughout the wood, but they were somewhat more numerous in the resin ducts and rays.

SUMMARY

A fungus isolated from pink-stained southern yellow pine sapwood and heartwood that is morphologically like a fungus isolated from the heartwood of cypress and from oak was found to be capable of producing the same color in the heartwood and sapwood of loblolly pine, yellow birch, cypress, western hemlock, black spruce, silver fir, red oak, and Douglas fir. It has been classified as a species of *Geotrichum*.

DIVISION OF FOREST PATHOLOGY,
BUREAU OF PLANT INDUSTRY,
IN COOPERATION WITH
THE FOREST PRODUCTS LABORATORY,
U. S. DEPARTMENT OF AGRICULTURE.

THE OCCURRENCE OF HELMINTHOSPORIUM TURCICUM IN THE SEED AND GLUMES OF SUDAN GRASS¹

S. J. P. CHILTON²

(Accepted for publication March 1, 1940)

Sudan grass (*Sorghum vulgare* var. *sudanense* (Piper) Hitchc.) is severely attacked at times by *Helminthosporium turcicum* Pass. How this fungus, which attacks maize and sorghum, overwinters in colder climates is apparently unknown (2), although Eddins (1) states that in Florida it overwinters on débris in the field. Species of *Helminthosporium* have been isolated from maize seed (3, 6, 7, 8), Valteau (8) demonstrating a high percentage of infected seed when a special technique was used. McDonald (4) obtained no evidence of seed infection by *H. turcicum* from

¹ A contribution from the U. S. Regional Pasture Research Laboratory, Division of Forage Crops and Diseases, Bureau of Plant Industry, U. S. Department of Agriculture, in cooperation with the Northeastern States.

² The writer wishes to express his gratitude to the agronomists and seed companies who furnished the seed.