# BOTRYOSPHAERIA SPP. ON ROSA SP. AND JUNIPERUS SABINA

*Robert Hall*[1]

This report describes, apparently for the first time in Canada (2,4), the occurrence of Dothiorella states of Botryosphaeria on Rosa and Juniperus.

## Isolates from rose

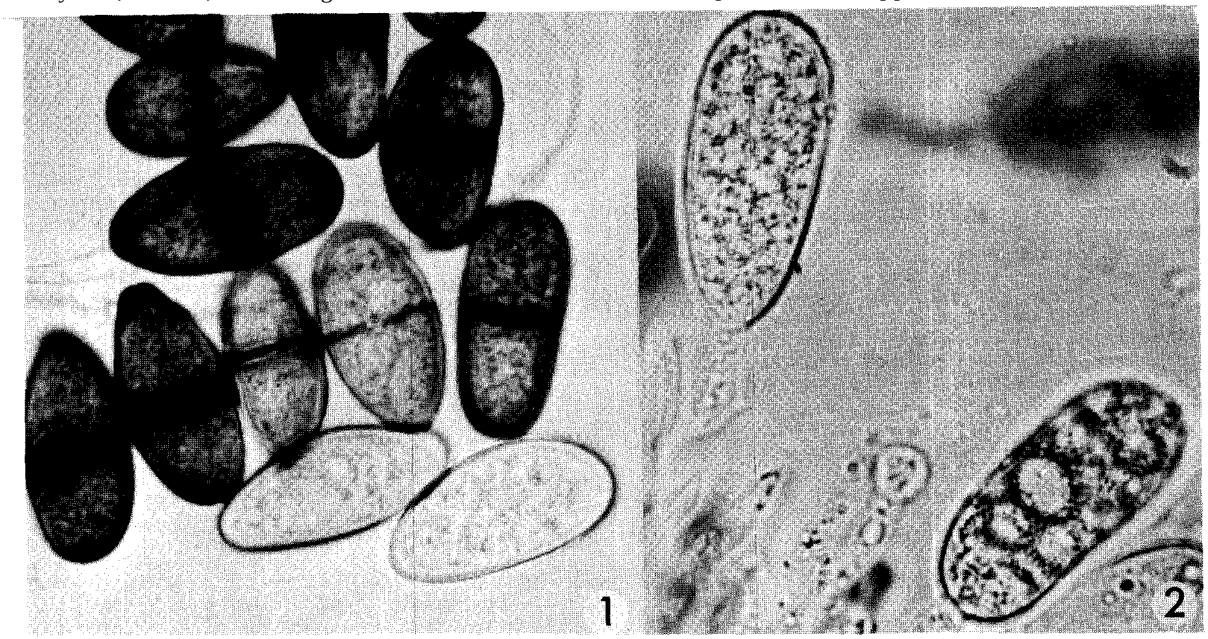
A Dothiorella species matching the description of the Dothiorella state of Botryosphaeria stevensii Shoemaker (4) was isolated from cankers on Rosa sp. cv. 'Pink Sensation' from Burlington, Ontario. The fungus produced Dothiorella pycnidia readily on potato dextrose agar (PDA). As cultures aged the conidia developed a septum and became darkly pigmented (Fig. 1).

Apple fruits wound-inoculated with this fungus were completely rotted within 1 week, and Dothiorella pycnidia were produced within 2 weeks under room conditions. Pathogenicity tests were not conducted on rose. A similar fungus, B. dothidea (Moug. 6 Fr.) Ces & de Not. (B. ribis Gross. 6 Dug. var. chromogena Shear, Stev. 6 Wilcox) causes canker and die-back of roses in Europe (K.A. Pirozynski, personal communication, 1969) and in Alabama, Maryland, Texas, and Virginia (1).

## Isolates from juniper

Dothiorella pycnidia were observed on dying 3-year-old bushes of Juniperus sabina L. cv. 'Blue Danube' from St. Catherines, Ontario. The pycnidia were produced separately and abundantly under the bark, especially towards the bases of dying and dead branches. The conidia were usually colorless and aseptate (Fig. 2). Occasionally dark conidia with a single septum were observed. Single spore cultures on PDA incubated under room conditons produced pycnidia containing numerous microconidia and a few much larger conidia of the Dothiorella type. The species of this Botryosphaeria has not been determined. The conidia resemble those of B. stevensii but the rose isolate (B. stevensii?) and juniper isolate are physiologically (growth rate, protein composition, reproduction on PDA) and pathologically distinct.

Stems of 1-year-old and 2-year-old J. sabina cv. 'Blue Danube' plants were wound-inoculated with pycnidia from single-spore cultures. Extensive discoloration of the tissue beneath the bark occurred within 2 weeks. Discoloration and desiccation of the entire plant was apparent 2 months after



Figures 1 ond 2. Conidia of *Dothiorella*, X 1250. 1) From rose. 2) From juniper.

[1] Assistant Professor, Botany Department, University of Guelph, Guelph, Ontario.

inoculation. These symptoms matched those observed in the field. Newly-developed Dothiorella pycnidia were present up to several cm from the site of inoculation. This fungus also slowly rotted apple fruits but Dothiorella pycnidia were not produced after 4 weeks.

Juniperus virginiana L. has been reported as a host for Botryosphaeria ribis (Tode ex Fr.) Gross. & Dug. in Alabama. New Jersey, and Virginia (1) and for Sphaeropsis sp. in Lithuania (5). An attempt was therefore made to identify the isolate from J. sabina. Acrylamide gel-electrophoretic protein patterns were prepared from extracts of the rose isolatk, the juniper isolate, Botryosphaeria ribis (A.T.C.C. 11232), and B. ribis var. chromogena (A.T.C.C. 11233). B. ribis and B. ribis var. chromo ena produced essentially identical patterns? The rose isolate and the juniper isolate produced patterns clearly different from each other and from the B. ribis Pattern. These results suggest (3) that the juniper isolate is not B. ribis.

Greenhouse tests indicate the juniper isolate is highly virulent to J. sabina cv. 'Blue Danube'. Since this is the first report of Botryosphaeria on Juniperus in Canada it would be of interest to determine the distribution and pathogenicity of this fungus on junipers and other plant genera, especially those in the family Rosaceae.

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## Literature cited

1. Anonymous. 1960. Index of plant diseases in the United States. U.S. Dep. Agr. Agr. Handbook 165. 531p.

2. Conners, I.L. 1967. An annotated index of plant diseases in Canada. Can. Dep. Agr. Pub. 1251. 381p.

3. Hall, R. 1969. Molecular approaches to taxonomy of fungi. Bot. Rev. 35:285-304.

4. Shoemaker, R.A. 1964. Conidial states of some Botryosphaeria species on Vitis and Quercus. Can. J. Bot. 4: 1297-1301.

5. Zuklys, L.P. 1960. Diseases of ornamental trees newly found in Lithuania. Rev. Appl. Mycol. 39:711.