FIRST RECORD OF GYMNOSPORANGIUM CLAVIPES ON MALUS SP. IN WESTERN CANADA[1]

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In July 1972 a single apple tree, variety unknown, in a private garden in Saskatoon was noted to be heavily infected with rust. Approximately 15% of the fruit and 5-10% of the terminal buds showed abundant bright orange aecia (Figure 1). The material was subsequently identified by Dr. J. A. Parmelee, Plant Research Institute, Ottawa, as Gymnosporangium clavines (Cke. & Pk.) Cke. & Pk. As this is the first record of this species on Malus sp. in western Canada and as the symptoms do not agree with the description of the disease given in Anderson's text (1), we believe that a short note is warranted.

The aecial stage of G. clavipes has been recorded in western Canada on Amelanchier alnifolia Nutt., Cotoneaster lucida Schlecht., Crataegus chrysocarpa Ashe, and C. douglasii Linde., while the telial stage has been recorded on Juniperus communis L. var. depressa Pursh (4), G. clavipes is well known on Malus sp. in eastern Canada (2) where some damage to apples has been reported from the Maritimes and eastern Quebec. The Saskatoon tree had approximately 15% of its fruit badly infected and the owner has estimated the fruit yield to be about half that of 1971. There are several other apple trees in the immediate vicinity but no rust was apparent on these. However, most were clearly varieties other than the one that was infected.

Using Anderson's text (1) to key out the rust species involved, two anomalies were found. In his description of the symptoms of G. clavipes on apple fruit he states "there is little evidence of pycnial or aecial development". Also he states "the flesh below the lesion shows a dead area often extending to the calyx tube". In the Saskatoon material there were abundant aecia surrounded by very obvious "green island" tissue (Figure 1) and there were no signs of necrosis beneath the infected area.

From the extent of the infection and the fact that apparently only one tree in the area was infected one might assume that the alternate host was nearby. Juniperus spp. (primarily J. horizontalis Moench) are common in the immediate vicinity but telia of Gymnosporangium were not found there in late September 1972. However, Parmelee (3) has reported a situation where Crataegus spp. were heavily infected by G. globosum, the aerial inoculum apparently originating 24 km away. The fact that only one tree was affected may indicate a specific "race"-variety interaction but this is just speculation. Whatever the source of inoculum it is to be hoped that this is an isolated case as such severe infection could cause serious losses.

Figure 1. Aecia of *Gymnosporangium clovipes* on fruit and terminal bud of apple.

Acknowledgments

We are grateful to Dr. J. A. Parmelee for confirming the identification and to Dr. D.F. Acton for drawing our attention to the diseased tree.

Literature Cited

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