

THE FAUNA OF BLACK KNOT OF CHERRY, DIBOTRYON MORBOSUM
(SCHW.) THEISS AND SYD. (ASCOMYCETES: DOTHIDEACEAE)
IN MANITOBA AND SASKATCHEWAN

by

J.C.E. Melvin, H.R. Wong and B.B. McLeod

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INTRODUCTION

The black knot of cherry, Dibotryon morbosum (Schw.) Theiss and Syd. has been a serious pest of plums and cherries for over a hundred years in North America. It is common on choke cherry, Prunus virginiana L. and pin cherry, Prunus pensylvanica L. f. in the forested areas of Canada (Annual Reports of the Forest Insect and Disease Survey). The etiology of this fungus has been adequately described by Heald (1943). (Map I).

Hesler and Wetzel (1929) and Anderson (1956) indicated that insects in black knot bring about the death of tree branches and Heald (1943) reported that knots developed during the previous season are likely to be more or less eaten by insects. Thirteen species of insects and mites associated with black knot of cherry have been noted by Wong and Melvin (1965).

METHODS

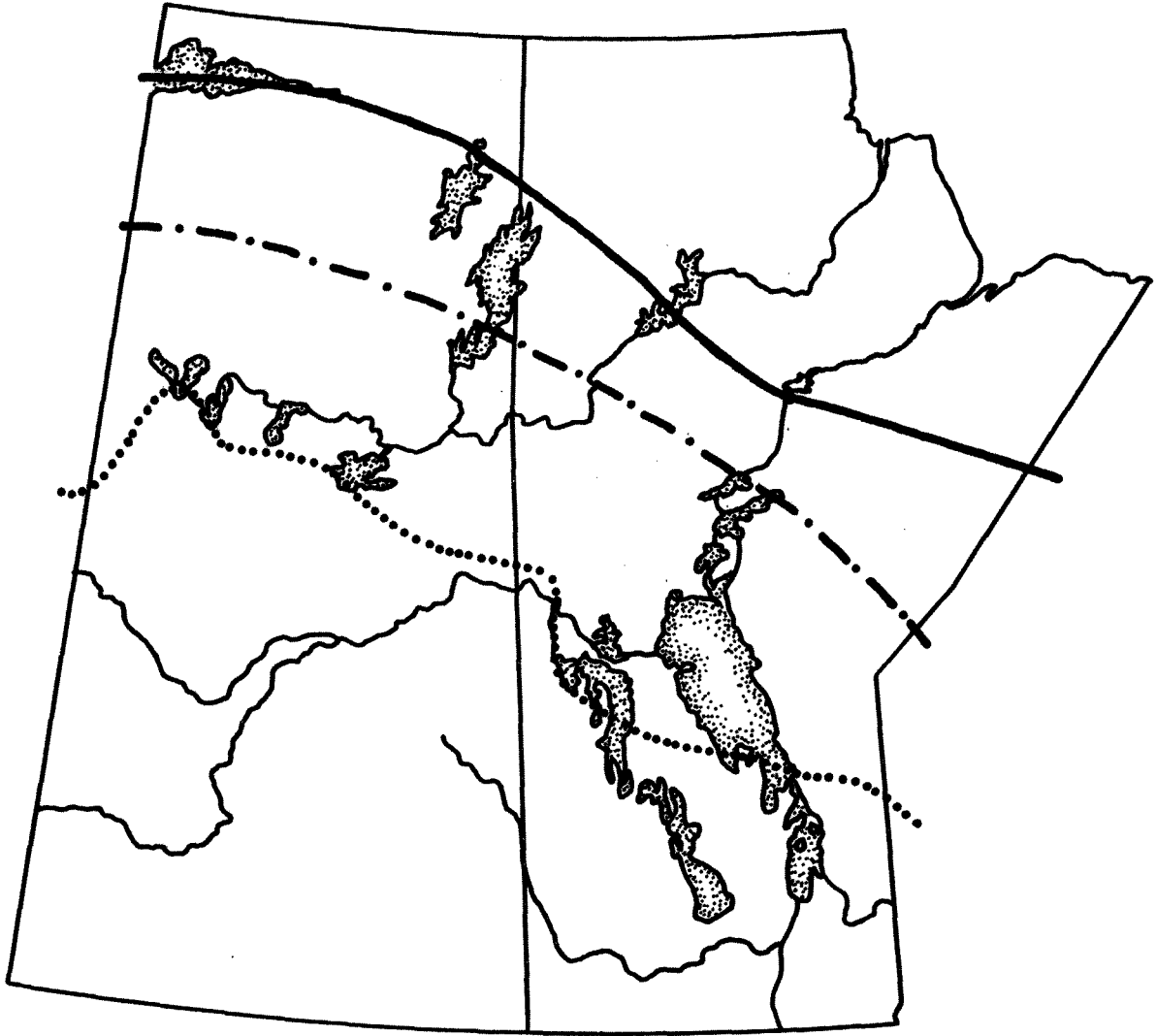
Old and new ascocarps on cherry were collected in May for the overwintering and immature feeding insects, in July for the insects that actually feed on the stromatic tissue, and in October for the inquiline adults and overwintering larvae. Collections were made by the forest research technicians and other collectors throughout Manitoba and Saskatchewan. The ascocarps were sent to the laboratory and incubated in large rearing jars or polyethylene crispers for ten months. The incubating containers were examined daily and emerging adults collected.

RESULTS

Over 7000 ascocarps were obtained from 250 collections in Manitoba and Saskatchewan (Map I). Ninety per cent of these collections were from choke cherry and the remainder from pin cherry. Most of the collections were made from living trees growing along roadsides. There was no apparent differences in the fauna between the insects found in black knot on choke cherry and pin cherry. A total of 1996 specimens, representing 9 orders, 34 families, 52 genera and 68 species were collected and incubated from 1963 to 1966 (Table I).

The + or - sign indicates whether or not the species fed on the black knot. The asterisk beside each emergence date indicates the date which the overwintering insects emerged following cold treatment at 44 F. from October 15 to February 15.

MAP I



KNOWN NORTHERN DISTRIBUTION OF

- Prunus pensylvanica L.f.
- · - · - · Prunus virginiana L.
- Dibotryon morbosum (Schw.) T.&S.

TABLE I

Insects and Mites Recovered from Black Knot

2

INSECTA

| | <u>Feeding in fungi</u> | <u>Emergence date</u> | <u>No. of Adults</u> |
|---|-----------------------------|---------------------------|--------------------------|
| COLEOPTERA | | | |
| Buprestidae | | | |
| <u>Buprestis</u> sp. | + | 9-2* | 1 |
| Carabidae | | | |
| <u>Bembidion</u> sp. | - | 22-10 | 1 |
| Cerambycidae | | | |
| <u>Elaphidionides villosus</u> (Fab.) | + | 10-3* | 2 |
| <u>Psenocerus supernotatus</u> (Say) | + | 3-5* | 4 |
| Chrysomelidae | | | |
| <u>Xanthonia decemnotata</u> (Say) | - | 3-6 | 2 |
| Corynetidae | | | |
| <u>Phyllobaenus humeralis</u> (Say) | - | 8-2* | 4 |
| <u>Phyllobaenus subasciatus</u> (Lec.) | - | 12-2* | 1 |
| Curculionidae | | | |
| <u>Conotrachelus nenuphar</u> (Hbst.) | + | 3-6 | 88 |
| <u>Pseudanthonomus</u> sp. | + | 11-8 | 7 |
| Lathridiidae | | | |
| <u>Melanophthalma</u> sp. | ? | 16-6 | 1 |
| Melandryidae | | | |
| <u>Canifa</u> sp. | + | 9-3* | 4 |
| <u>Canifa pallipes</u> Melsh. | + | 9-3* | 70 |
| Scolytidae | | | |
| <u>Phloeotribus liminaris</u> (Harr.) | + | 16-3* | 211 |
| Staphilinidae | | | |
| Staphilinid sp. | - | 20-1* | 1 |
| LEPIDOPTERA | | | |
| Aegeriidae | | | |
| <u>Synanthedon pictipes</u> G. & R. | + | 18-7 | 57 |
| <u>Thamnosphecia scitula</u> (Harr.) | + | ? | 1 |
| Arctiidae | | | |
| <u>Haploa lecontei</u> Guer | - | 3-5* | 2 |
| Carposinidae | | | |
| <u>Carposina</u> sp. | + | 6-7 | 6 |
| <u>Carposina</u> sp. nr. <u>comonana</u> Kft. | + | 3-7 | 149 |
| Gelechiidae | | | |
| <u>Chionodes</u> sp. | + | 4-3* | 27 |
| <u>Filatima</u> sp. | + | 18-7 | 1 |
| <u>Telphusa</u> sp. | + | 12-6 | 560 |
| <u>Xenolechia velatella</u> Busck | + | 13-1* | 21 |
| Geometridae | | | |
| <u>Hypagyrtis</u> sp. | - | 29-3* | 1 |
| Unidentified sp. | - | ? | 1 |

| | | | |
|--------------------------------------|---|-------|-----|
| Noctuidae | | | |
| <u>Polia imbrifera</u> Gn. | - | 10-5* | 2 |
| Unidentified sp. | - | 28-7 | 1 |
| Olethreutidae | | | |
| <u>Grapholitha prunivora</u> Walsh | + | 3-7 | 114 |
| Pyralidae | | | |
| <u>Acrobasis tricolorella</u> (Grt.) | - | 10-7 | 3 |
| Tineidae | | | |
| <u>Tinea</u> sp. | + | 20-4* | 1 |
| Tortricidae | | | |
| <u>Pandemis canadana</u> Kft. | - | 16-7 | 1 |
| Yponomeutidae | | | |
| <u>Argyrestia oreasella</u> Clem. | + | 3-7 | 1 |

DIPTERA

| | | | |
|--|---|-------|-----|
| Cecidomyiidae | | | |
| Cecidomyiid sp. | + | 24-2* | 112 |
| Chloropidae | | | |
| <u>Gaurax apicalis</u> Mallock | + | 28-5 | 7 |
| <u>Gaurax festivus</u> Loew. | + | 5-3* | 6 |
| <u>Gaurax</u> poss. <u>montanus</u> Coq. | + | 10-3* | 65 |
| <u>Oscinella catalpae</u> (Mallock) | + | 3-2* | 214 |
| <u>Oscinella</u> sp. nr. <u>catalpae</u> (Mallock) | + | 17-3* | 3 |
| <u>Oscinella</u> sp. | + | 5-6 | 6 |

HYMENOPTERA

| | | | |
|---|---|-------|----|
| Braconidae | | | |
| <u>Brachistes</u> sp. | - | 13-4* | 1 |
| <u>Bracon</u> sp. | - | 9-3* | 3 |
| <u>Bracon sanninoideae</u> (Gahan) | - | 9-6 | 21 |
| <u>Bracon variabilis</u> (Prov.) | - | 28-5 | 94 |
| <u>Helconidea ligator</u> (Say) | - | 3-7 | 36 |
| <u>Iphiaulax americanus</u> (Cress.) | - | 8-2* | 1 |
| <u>Macrocentrus marginator</u> (Nees) | - | 3-2* | 5 |
| <u>Meteor</u> n. sp. nr. <u>pinifolii</u> Mason | - | 12-5 | 1 |
| <u>Microctonus</u> sp. | - | 8-4* | 1 |
| Eulophidae | | | |
| <u>Euderus</u> sp. | - | 5-2* | 3 |
| <u>Hysopus sanninoideae</u> (Grlt.) | - | 27-1* | 1 |
| <u>Tetrastichus</u> poss. <u>fumipennis</u> (Grlt.) | - | 5-2* | 9 |
| Formicidae | | | |
| <u>Leptothorax muscorum</u> (Nyl.) | - | 20-10 | 8 |
| Ichneumonidae | | | |
| <u>Devorgilla</u> sp. | - | 9-2* | 2 |
| <u>Dolichomitus messor perlongus</u> (Cr.) | - | 11-2* | 1 |
| <u>Itoplectis conquisitor</u> (Say) | - | 20-1* | 1 |
| <u>Scambus</u> sp. poss. <u>tecumseh</u> Vier | - | 5-2* | 1 |

| | | | | |
|----------------|--|---|-------|----|
| | | | 4 | |
| Pteromalidae | | | | |
| | <u>Habrocytus</u> poss. <u>phycidis</u> Ashm | - | 16-6 | 8 |
| | <u>Pachyneuron</u> sp. | - | 15-3* | 2 |
| Tenthredinidae | | | | |
| | <u>Amauronematus</u> sp. | - | 9-2* | 1 |
| PSOCOPTERA | | | | |
| | Unidentified sp. | - | 17-2* | 4 |
| NEUROPTERA | | | | |
| Chrysopidae | | | | |
| | <u>Chrysopa</u> sp. prob. <u>carnea</u> Stephens | - | 3-8 | 1 |
| | <u>Chrysopa</u> sp. | - | 12-8 | 5 |
| THYSANOPTERA | | | | |
| Phaeothripidae | | | | |
| | <u>Cryptothrips</u> <u>rectangularis</u> Hood | - | 28-5 | 27 |
| HOMOPTERA | | | | |
| Aphididae | | | | |
| | <u>Rhopalosiphum</u> <u>cerasifoliae</u> (Fitch) | - | 9-7 | |
| ARACHNIDA | | | | |
| ACARINA | | | | |
| Acaridae | | | | |
| | <u>Histiogaster</u> n. sp. | + | 25-10 | |
| | <u>Thyreophagus</u> sp. nr. <u>corticalis</u> (Michael) | + | 13-1* | |
| | <u>Thyreophagus</u> <u>putrescentiae</u> (Schrank) | + | 25-10 | |
| Oribatulidae | | | | |
| | Unknown species | + | 6-4* | |

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