A REPORT ON THE EXAMINATION OF INSECTS FOR PATHOGENS: 1986

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For a number of years the protozoology project has examined spruce budworm, *Choristoneura fumierana* and the larch sawfly, *Pristiphora erichsonii* from permanent plots at Uxbridge, Ranger Lake Road, Kirkwood Forest and Gros Cap for the presence of microsporidia. In 1986 an insect disease diagnosis service was expanded to include other insects from more areas as well as samples submitted from various personnel. It is hoped that this type of survey might result in previously unreported pathogens or more pathogenic strains that could be considered for microbial control of insects. It also provides information to those encountering pathogens in insect rearing cultures and thus assists in the control of such diseases.

Samples were received from the following establishments:

Great Lakes Forestry Centre
Forest Insect and Disease Survey
Sault Ste. Marie, Ont.

Personnel of Great Lakes
Forestry Centre
Sault Ste. Marie, Ont.

Agriculture Canada
Research Station
London, Ont.

Personnel of Forest Pest
Management Institute
Sault Ste. Marie, Ont.

University of B.C.
Faculty of Forestry
Vancouver, B.C.

Table 1 shows the insect species and number examined as well as the pathogens that were present. In total, 1281 insects were examined, of these 133 were infected with a pathogen. The major pathogen encountered was microsporidia.

As mentioned above spruce budworm from the Uxbridge Forest have been examined for a number of years to determine the levels of microsporidia, particularly *Nosema fumiferanae*. In 1986 only 20 insects were collected and 10 of these were infected. This population has remained low since 1982, when 87% of the larvae were infected with microsporidia.

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Table 1. Pathogens present in host species examined during 1986.

Insect species	Number examined	Pathogens present
Acantholyda erythrocephala	50	-
Acleris variana	49	microsporidia (6)
Archips cerasivoranus	152	microsporidia - *Pleistophora* sp. (39) *Nosema* sp. (3)
Choristoneura fumiferana	47	microsporidia - *Nosema* sp. (20)
Choristoneura pinus pinus	18	microsporidia - *Nosema* sp. (8)
Dasychira plagiata	11	virus (2)
Delia antiqua	15	microsporidia - *Octosporea* sp. (10) flagellate - *Herpetomonas* sp. (2)
Dioryctria abietivorella	8	microsporidia (5)
Dioryctria reniculelloides	12	-
Erannis tiliaria	52	microsporidia (3)
Gilpinia hercyniae	34	-
Hyphantria cunea	150	fungus (2)
Lymantria dispar	8	bacteria - *Streptococcus* sp. (8)
Malacosoma americanum	50	microsporidia (1)
Malacosoma disstria	150	microsporidia - *Nosema* sp. (2) fungus (2)
Neodiprion pratti banksianae	68	-
Nymphalis antiopa	9	yeast (2)
Operophtera bruceata	83	microsporidia (2)
Phyllocnistis populiella	2	-
Pikonema alaskensis	13	-
Pissodes strobi	81	microsporidia - *Nosema* sp. (4) yeast (1)
Pristiphora erichsonii	169	microsporidia - *Pleistophora* sp. (11)
Pristiphora geniculata	50	-

( ) number in parentheses indicates number of hosts infected with pathogen.