

## REFERENCES

- Banks, N. 1900. Papers from the Harriman Alaska Expedition. X. Entomological results (4): Neuropteroid insects. Proc. Wash. Acad. Sci., II: 465-467.
- Denning, D. G. 1964. The genus *Homophylax* (Trichoptera: Limnephilidae). Ann. Ent. Soc. Am. 57:253-260.
- Denning, D. G. 1970. The genus *Psychoglypha* (Trichoptera: Limnephilidae). Can. Ent. 102:15-30.
- Ellis, R. J. 1978a. Seasonal abundance of adult caddisflies of Sashin Creek, Baranof Island, southeastern Alaska (Trichoptera). Pan-Pacif. Ent. 54:199-206.
- Ellis, R. J. 1978b. Over-winter occurrence and maturation of gonads in adult *Psychoglypha subborealis* (Banks) and *Glyphopsyche irrorata* (Fabricius) (Trichoptera: Limnephilidae). Pan-Pacif. Ent. 54:178-180.
- Fischer, F. C. J. 1960-73. *Trichoptorum catalogus*. vols. 1-15. Nederland, Ent. Veren., Amsterdam.
- Wiggins, G. B. 1977. The larvae of the North American caddisfly genera (Trichoptera). Univ. of Toronto Press, Toronto. 401 pp.
- Yamamoto, T., and G. B. Wiggins. 1964. A comparative study of the North American species in the caddisfly genus *Mystacides* (Trichoptera: Leptoceridae). Can. J. Zool. 42:1105-1126.

**THE APHIDS (HOMOPTERA:APHIDIDAE) OF  
BRITISH COLUMBIA  
10. FURTHER ADDITIONS**

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## ABSTRACT

Five species of aphids and new host records were added to the taxonomic list of the aphids of British Columbia.

## INTRODUCTION

Six previous lists of the aphids of British Columbia (Forbes, Frazer and MacCarthy 1973; Forbes, Frazer and Chan 1974; Forbes and Chan 1976, 1978, 1980, 1981) recorded 336 species. This includes aphids collected from 636 hosts and comprises 1173 aphid-host plant associations.

The present list adds 5 species of aphids (indicated with an asterisk in the list) and 125 aphid-host plant associations to the previous lists. Seventy-two of the new aphid-host plant associations are plant species not in the previous lists. The additions bring the number of known aphid species in British

TABLE 1. Localities where aphids were collected, with airline distances from reference points.

Locality	Reference Point	Dir.	Distance	
			km	mi
Enderby	Kamloops	SE	85	53
Fraser Lake	Prince George	NW	139	87
Haney	Vancouver	S	48	30
Hudson's Hope	Prince George	NE	237	148
Lytton	Kamloops	SW	102	64
MacKenzie	Prince George	NW	157	98
Moricetown Falls	Prince George	NW	325	203
108 Mile House	Williams Lake	SE	78	49
Osoyoos	Kelowna	S	93	58
Parksville	Victoria	NW	128	80
Westbridge	Kelowna	SE	85	53
White Lake	Kelowna	SW	62	39
Wilson Creek	Vancouver	NW	42	26
Wilson Landing	Kelowna	NW	14	9

Columbia to 341. Aphids have now been collected from 708 different host plants and the total number of aphid-host plant associations is 1298.

The names of aphids are in conformity with Eastop and Hille Ris Lambers (1976) and are arranged alphabetically by species. Fourteen new collection sites are tabulated in Table 1. The location of each collection site can be determined from Table 1 or from the tables of localities in the previous papers. The reference points are the same as those shown on the map which accompanies the basic list.

#### LIST OF SPECIES

##### AEGOPODII (Scopoli), CAVARIELLA

*Foeniculum vulgare* var. *dulce*: Vancouver (UBC), Aug 1/80.

##### ALBIFRONS Essig, MACROSIPHUM

*Lupinus* sp.: Burnaby (SFU), Jun 6/80; Diamond Head, Aug 13/74.

##### \*ARMORACIAE Cowen, APHIS

*Centaurea diffusa*: Summerland, Jun 6/81; Sep 17/80.

##### ASCALONICUS Doncaster, MYZUS

*Alchemilla mollis*: Vancouver (UBC), Jun 8/82.  
*Colutea arborescens*: Vancouver (UBC), May 8/81.  
*Dianthus deltoides*: Vancouver (UBC), Jun 10/80.  
*Eryngium maritimum*: Vancouver (UBC), May 28/82.  
*Lilium 'Cinnabar'*: Vancouver (UBC), May 30/78.

##### ASPARAGI Mordvilko, BRACHYCOLUS

*Asparagus officinalis*: Oliver, Aug 22/81; Osoyoos, Aug 21/81; Summerland, Aug 22/81.

##### AVENAE (Fabricius), SITOBION

*Asparagus officinalis*: Summerland, Jun 4/81.  
*Equisetum arvense*: Vancouver, June 13/81.

##### ATRIPLICIS (Linnaeus), HAYHURSTIA

*Chenopodium glaucum*: Dawson Creek, Jul 11/80.

##### BRASSICAE (Linnaeus), BREVICORYNE

*Brassica oleracea* 'Waltham 29': Abbotsford, Sep 8/81.

##### CALIFORNICA (Davidson), THELAXES

*Quercus garryana*: Vancouver (UBC), May 12/80.

##### CALIFORNIENSIS (Shinji), PERIPHYLLUS

*Acer circinatum*: Burnaby (SFU), May 30/78.  
*Acer macrophyllum*: Burnaby (SFU), May 30/78.

##### CANAE Williams, APHIS

*Artemesia tridentata*: White Lake, Jul 16/79.

##### CARPINI (Koch), MYZOCALLIS

*Carpinus betulus* 'Fastigiata': Vancouver (UBC), Jun 4/82.

##### CIRCUMFLEXUM (Buckton), AULACORTHUM

*Alchemilla vulgaris*: Vancouver (UBC), Jun 23/81.

*Epiphyllum* sp.: Richmond, Aug 11/81.

*Equisetum arvense*: Vancouver (UBC), Sep 24/81, Nov 13/81.

*Lilium 'Cinnabar'*: Vancouver (UBC), May 30/78.

*Osmunda regalis*: Vancouver (UBC), Jun 24/81, Jul 7/81.

*Pilularia globulifera*: Vancouver (UBC), Jul 7/81.

*Polystichum lonchitis*: Vancouver (UBC), Jul 7/81.

*Solanum tuberosum*: Vancouver (CDA), Aug 11/81.

##### CITRICOLA van der Goot, APHIS

*Morus alba*: Osoyoos, Aug 22/81.

##### COWENI (Cockerell), TAMALIA

*Arctostaphylos uva-ursi*: Burns lake, Aug 1/80; MacKenzie, Aug 6/80.

##### CRATAEGARIUS (Walker), OVATUS

*Verbena 'Sangria'*: Vancouver (UBC), Aug 15/80.

##### DIRHODUM (Walker), METOPOLOPHIUM

*Potentilla argyrophylla 'Leucochroa'*: Vancouver (UBC), Jun 11/78.

*Rosa 'Coral Dawn'*: Vancouver (UBC), Feb 26/81.

*Rosa nutkana*: Vancouver (UBC), Oct 2/80.

*Rosa 'Westerland'*: Vancouver (UBC), Feb 26/81.

##### EQUISETI Holman, SITOBION

*Equisetum arvense*: Vancouver (UBC), Aug 12/81.

##### ERIOPHORI (Walker), CERURAPHIS

*Carex leporina*: Vancouver (UBC), Jul 22/77.

*Carex limosa*: Vancouver (UBC), Jul 22/77.

*Carex pendula*: Vancouver (UBC), Jul 22/77.

##### EUPHORBIAE (Thomas), MACROSIPHUM

*Dianthus barbatus*: Vancouver (CDA), Mar 15/82.

*Gomphrena globosa*: Vancouver (CDA), Jul 15/81.

##### FABAE Scopoli, APHIS

*Beta vulgaris*: Westham Island, Jul 6/81.

*Spinacia oleracea*: Vancouver, Jul 12/81.

*Styrax obassia*: Vancouver (UBC), Jul 23/81.

##### FRAGARIAE (Walker), SITOBION

*Carex capitata* ssp. *capitata*: Vancouver (UBC), Jul 22/77.

*Hierochloe odorata* ssp. *hirta*: Vancouver (UBC), May 25/79.

*Sitanion hystrix* var. *hystrix*: Vancouver (UBC), Jun 10/79.

*Trisetum spicatum*: Vancouver (UBC), Jun 11/79.

##### FRAXINIFOLII (Riley), PROCIPHILUS

*Fraxinus excelsior*: Vancouver, May 1/77, Oct 25/77, Oct 31/77, Nov 7/77.

##### GLYCERIAE (Kaltenbach), SIPHA

*Arrhenatherum elatius 'Variegatum'*: Vancouver (UBC), Aug 24/79.

**GOSSYPII** Glover, APHIS

- Cyclamen persicum*: Vancouver, Jan 30/77.  
*Dieffenbachia maculata*: Vancouver, Mar 27/77.  
*Gardenia jasminoides*: Vancouver, Oct 25/77.

**HELIANTHI** Monell, APHIS

- Cornus sericea*: Westbridge, Jul 19/79.

**HELICHRYSI** (Kaltenbach), BRACHYCAUDUS

- Alchemilla mollis*: Vancouver (UBC), Jun 8/82.  
*Coriandrum sativum*: Vancouver (UBC), May 28/82.  
*Mertensia paniculata* var. *borealis*: Vancouver (UBC), May 26/81.  
*Parthenium hysterophorus*: Vancouver (UBC), Aug 29/79.  
*Phacelia sericea* ssp. *sericea*: Vancouver (UBC), Jun 10/79.

**KONOI** Takahashi, CAVARIELLA

- Apium graveolens*: Vancouver (CDA), Sep 24/81.  
*Salix acutifolia* 'pendulifolia': Vancouver (UBC), Jul 22/81.

**LACTUCAE** (Linnaeus), HYPEROMYZUS

- Ribes nigrum*: Cloverdale, May 13/82.

**\*MALVAE** (Mosley), ACYRTHOSIPHON

- Geranium dalmaticum*: Vancouver (UBC), Mar 27/81.

**MANITOBENSE** (Robinson), SITOBION

- Cornus sericea*: Vancouver (UBC), Apr 11/76, May 14/76.

**ORNATUS** Laing, MYZUS

- Alchemilla vulgaris*: Vancouver (UBC), Aug 12/81.  
*Apocynum androsaemifolium*: Vancouver (UBC), Jun 2/81.  
*Barbarea orthoceras*: Vancouver (UBC), Mar 17/77.  
*Bellis perennis*: Vancouver (UBC), Jun 12/81.  
*Buddleja davidii*: Vancouver (UBC), Jun 30/81.  
*Chrysanthemum leucanthemum*: Vancouver (UBC), Jun 23/81.  
*Clarkia pulchella*: Vancouver (UBC), Jun 23/81.  
*Dieffenbachia maculata*: Vancouver, Mar 27/77.  
*Euphorbia pelopus*: Vancouver (UBC), Apr 4/77.  
*Fragaria vesca* 'Alpine': Vancouver (CDA), Oct 8/81.  
*Geum aleppicum*: Vancouver (UBC), May 27/81.  
*Leonurus cardiaca*: Vancouver (UBC), May 28/82.  
*Liquidambar styraciflua*: Vancouver (UBC), Nov 10/81.  
*Origanum vulgare*: Vancouver, Dec 7/81.  
*Rosa rugosa* 'Alba': Vancouver (UBC), Jun 18/81.  
*Senecio vulgaris*: Vancouver (UBC), Oct 26/81.  
*Verbena* 'Coral Reef': Vancouver (UBC), Sep 15/81.

**PADI** (Linnaeus), RHOPALOSIPHUM

- Carex pendula*: Vancouver (UBC), Jul 22/77.  
*Ranunculus occidentalis*: Vancouver, Dec 15/76.

**PARVIFLORI** Hill, AMPHOROPHORA

- Rubus parviflorus*: Lytton, May 22/78.

**PERSICAE** (Sulzer), MYZUS

- Aethionema schistosum*: Vancouver (UBC), Jun 9/80.  
*Aloysia triphylla*: Vancouver (UBC), May 28/82.  
*Alyogyne huegelii*: Vancouver (UBC), Jun 15/81.  
*Anthericum liliago*: Vancouver (UBC), Jun 9/80.  
*Apocynum androsaemifolium*: Vancouver (UBC), Jun 2/81.  
*Asparagus officinalis*: Agassiz, Jul 9/81; Vancouver (UBC), Aug 12/81.  
*Brassica oleracea* 'Waltham 29': Abbotsford, Sep 8/81.  
*Calceolaria crenatiflora*: Vancouver (CDA), Jun 23/82.  
*Cannabis sativa*: Vancouver, Nov 23/79.  
*Capsella bursa-pastoris*: Vancouver (UBC), Dec 7/81.  
*Coriandrum sativum*: Vancouver (UBC), May 28/82.  
*Cynara scolymus*: Agassiz, May 13/81.  
*Datura innoxia*: Vancouver (UBC), Aug 24/79.  
*Datura stramonium*: Vancouver (CDA), Jun 17/82.  
*Euonymus japonica* 'Albomarginata': Vancouver (CDA), Jun 18/79.  
*Gomphrena globosa*: Vancouver (CDA), Jul 15/81.  
*Mikania scandens*: Vancouver (CDA), Oct 1/79.  
*Verbena* 'Coral Reef': Vancouver (UBC), Sep 15/81.

**PISUM** (Harris), ACYRTHOSIPHON

- Medicago sativa*: Vancouver (UBC), Apr 17/74.  
*Melilotus officinalis*: Hudson's Hope, Jul 12/80; Wilson Landing, Jun 12/82.

**PLATANI** (Kaltenbach), TINOCALLIS

- Ulmus americana*: Summerland, Aug 21/81.

**\*POPULICONDUPLIFOLIUS** (Cowen), THECABIUS

- Populus* sp.: 108 Mile House, Jul 16/80.

**POPULIMONILIS** (Riley), THECABIUS

- Populus trichocarpa*: Moricetown Falls, Jul 13/80.

**PTERIDIS** (Wilson), SITOBION

- Pteridium aquilinum*: Vancouver (UBC), Jun 11/79.

**RARA** Mordvilko, TRAMA

- Taraxacum officinale*: Mission, Nov 2/81.

**RIBISNIGRI** (Mosley), NASONOVIA

- Capsella bursa-pastoris*: Vancouver (CDA), Jun 16/82.  
*Catalpa speciosa*: Vancouver, Jun 11/82.  
*Catharanthus roseus*: Vancouver (CDA), Jun 17/82.  
*Datura stramonium*: Vancouver (CDA), Jun 17/82.  
*Lactuca sativa*: Cloverdale, Jun 14/82, Sep 28/81.  
*Ribes nigrum*: Cloverdale, May 13/82.

**ROBINIAE** (Gillette), APPENDISETA

- Robinia pseudoacacia*: Haney, Aug 26/79.

- Robinia pseudoacacia* 'Inermis': Summerland, Aug 21/81.
- ROSAE (Linnaeus), MACROSIPHUM**  
*Rosa* 'Coral Dawn': Vancouver (UBC), Feb 26/81.  
*Rosa* 'Handel': Vancouver (UBC), Feb 26/81.  
*Rosa* 'Mimi': Vancouver (UBC), Feb 26/81.
- SACCULI (Gillette), PACHYPAPPA**  
*Populus tremuloides*: Princeton, Jun 19/80.
- SJIPKENSIS Hille Ris Lambers, MACULOLACHNUS**  
*Rosa* sp.: Fraser Lake, Aug 1/80.
- SIPHUNCULATA Richards, PLACOAPHIS**  
*Rosa rugosa* 'Rubra': Vancouver (UBC), Nov. 9/81.
- SOLANI (Kaltenbach), AULACORTHUM**  
*Alchemilla mollis*: Vancouver (UBC), Jun 8/82.  
*Alchemilla vulgaris*: Vancouver (UBC), Jun 23/81.  
*Aloysia triphylla*: Vancouver (UBC), May 28/82.  
*Arctostaphylos uva-ursi*: Vancouver (UBC), Jun 17/80.  
*Asclepias tuberosa*: Vancouver (UBC), May 28/82.  
*Aucuba japonica* 'Variegata': Vancouver (UBC), May 20/78.  
*Bellis perennis*: Vancouver (UBC), Jun 12/81.  
*Catalpa speciosa*: Vancouver (UBC), Jun 3/81, Oct 16/80.  
*Deutzia gracilis*: Vancouver (UBC), Jun 4/82, Jun 16/81.  
*Eryngium maritimum*: Vancouver (UBC), May 28/82.  
*Euphorbia pelpus*: Vancouver (UBC), Aug 29/79, Sep 19/79.  
*Galega officinalis*: Vancouver (UBC), May 28/82.  
*Geum macrophyllum*: Vancouver (UBC), Jun 23/81.  
*Hypericum perforatum*: Vancouver (UBC), May 28/82.  
*Kolkwitzia amabilis*: Vancouver (UBC), Jun 16/81.
- Liquidambar styraciflua*: Vancouver (UBC), Nov 10/81.  
*Osmunda regalis*: Vancouver (UBC), Jun 24/81.  
*Polystichum munitum*: Vancouver, May 2/58.  
*Potentilla atrosanguinea*: Vancouver (UBC), Jun 11/79.  
*Potentilla gracilis* var. *gracilis*: Vancouver (UBC), May 8/81.
- STANLEYI Wilson, MACROSIPHUM**  
*Sambucus racemosa* ssp. *pubens* var. *arborescens*: Burnaby (SFU), Aug 18/74.
- STAPHYLEAE (Koch), RHOPALOSIPHONINUS**  
*Apocynum androsaemifolium*: Vancouver (UBC), Jun 2/81.
- TANACETARIA (Kaltenbach), MACROSIPHONIELLA**  
*Tanacetum vulgare*: Port Coquitlam, Jul 28/81.
- TESTUDINACEUS (Fernie), PERIPHYLLUS**  
*Acer cappadocicum*: Vancouver (UBC), Jun 4/82.  
*Acer macrophyllum*: Burnaby (SFU), May 29/78; Delta, Apr 29/78; Duncan, May 22/75; Parksville, Jun 25/74.  
*Aesculus hippocastanum*: Port Coquitlam, Jun 1/79; Vancouver Sep 15/80.
- TILIAE (Linnaeus), EUCALLIPTERUS**  
*Tilia americana*: Enderby, Sept 6/78; Port Coquitlam, Aug 1/76.
- \*UTRICULARIA (Passerini), GEOICA**  
*Tanacetum vulgare*: Wilson Creek Jul 7/81.
- VARIABILIS Richards, BOERNERINA**  
*Alnus viridis* ssp. *sinuata*: Diamond Head, Jul 27/73; Revelstoke, Jun 22/80.
- VARIANS Patch, APHIS**  
*Epilobium angustifolium*: Vancouver (UBC), Jul 20/81.
- VERRUCOSA Gillette, THRIPSAPHIS**  
*Carex pendula*: Vancouver (UBC), Jul 22/77.
- \*WOODSIAE Robinson, SITOBION**  
*Cryptogramma crispa*: Vancouver (UBC), Jul 7/81.
- \*Aphid species not in the previous lists.

## REFERENCES

- Eastop, V. F., and D. Hille Ris Lambers. 1976. Survey of the world's aphids. Dr. W. Junk b.v., Publisher, The Hague.
- Forbes, A. R., and C. K. Chan. 1981. The aphids (Homoptera:Aphididae) of British Columbia. 9. Further additions. J. ent. Soc. Brit. Columbia 78:53-54.
- Forbes, A. R., and C. K. Chan. 1980. The aphids (Homoptera:Aphididae) of British Columbia. 8. Further additions. J. ent. Soc. Brit. Columbia 77:38-42.
- Forbes, A. R., and C. K. Chan. 1978. The aphids (Homoptera:Aphididae) of British Columbia. 6. Further additions. J. ent. Soc. Brit. Columbia 75:47-52.
- Forbes, A. R., and C. K. Chan. 1976. The aphids (Homoptera:Aphididae) of British Columbia. 4. Further additions and corrections. J. ent. Soc. Brit. Columbia 73:57-63.
- Forbes, A. R., B. D. Frazer and C. K. Chan. 1974. The aphids (Homoptera:Aphididae) of British Columbia. 3. Additions and corrections. J. ent. Soc. Brit. Columbia 71:43-49.
- Forbes, A. R., B. D. Frazer and H. R. MacCarthy. 1973. The aphids (Homoptera:Aphididae) of British Columbia. 1. A basic taxonomic list. J. ent. Soc. Brit. Columbia 70:43-57.