

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

A.R. FORBES¹ AND C.K. CHAN¹

¹RESEARCH STATION, AGRICULTURE CANADA
VANCOUVER, BRITISH COLUMBIA, V6T 1X2

ABSTRACT

Four species of aphids and new host records are added to the taxonomic list of the aphids of British Columbia.

INTRODUCTION

Three hundred ninety-seven species of aphids collected from 1052 hosts or in traps, and 2043 aphid-host plant associations were recorded in fourteen 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, 1983, 1984, 1985, 1986a, 1986b, 1987, 1988; Forbes, Chan and Foottit 1982). The present list adds 4 aphid species (indicated with an asterisk in the list) and 183 aphid-host plant associations to the previous lists. Seventy-one of the new aphid-host plant associations are plant species not recorded before. As *Aphis herachella* Davis is synonymized with *A. helianthi* Monell (Addicott 1981), the additions bring the number of known aphid species in British Columbia to 400. Aphids have now been collected from 1124 different host plants and the total number of aphid-host plant associations is 2233.

Two of the four newly recorded aphid species are of economic importance. The Russian wheat aphid, *Diuraphis noxia* (Mordvilko ex Kurdjumov), was first detected in Creston in November 1988, as a result of a survey conducted in the winter wheat fields and grass seed fields. It poses a serious threat to production of cereals and grass seeds in British Columbia. The tobacco aphid, *Myzus nicotianae* Blackman (red form), feeding on tobacco in Victoria is the first confirmed record of this aphid in Canada. It has the same host range as *Myzus persicae* (Sulzer), and was shown to be a vector of beet western yellows and potato leaf roll viruses (unpublished data).

The aphid names are listed alphabetically by species and are in conformity with Eastop and Hille Ris Lambers (1976), except *Glabromyzus schlingeri* Hille Ris Lambers has been changed to *Utamphorophora schlingeri* (Hille Ris Lambers) based on Cook's finding (1984). The location of a new collection site is given in Table I. The reference point is the same as that shown on the map which accompanies the basic list (Forbes, Frazer and MacCarthy 1973).

TABLE 1.

Collection site of aphids, with airline distance from reference point.

Locality	Reference Point	Dir	Distance	
			km	mi
Garvin Creek	Prince George	NW	13	8

LIST OF SPECIES

ALNIFOLIAE (Williams 1911), PROCIPHILUS

Pinus monticola: Oliver, Sep24/88.

*ANTIRRHINII (Macchiati 1883), MYZUS

Datura stramonium: Vancouver (CDA), Oct18/88.

- ASCALONICUS Doncaster 1946, MYZUS
Alchemilla vulgaris: Vancouver (CDA), Feb20/89.
Anthriscus cerefolium: Vancouver (CDA), Feb20/89.
Fragaria vesca 'Semperflorens': Vancouver (CDA), Feb20/89.
Horminum pyrenaicum: Vancouver (UBC), Apr15/88.
Potentilla alba: Vancouver (UBC), Apr15/88.
Stellaria media: Vancouver (UBC), Sep16/88.
Verbena 'Ideal Florist': Vancouver (CDA), Mar3/89.
- ASPARAGI (Mordvilko 1929), BRACHYCORYNELLA
Asparagus officinalis: Vancouver (CDA), Dec29/88.
- AVELLANAE (Schränk 1801), CORYLOBIUM
Corylus maxima 'Purpurea': Vancouver (UBC), Apr26/88, May30/88.
- BERBERIDIS (Kaltenbach 1843), LIOSOMAPHIS
Berberis actinacantha: Vancouver (UBC), Jul20/88.
- BETULAE (Koch 1855), EUCERAPHIS
Betula pendula: Vancouver (UBC), Sep8/87, Sep29/87.
- BRASSICAE (Linnaeus 1758), BREVICORYNE
Brassica oleracea var. *gemmifera* 'Jade Cross': Vancouver (UBC), Sep30/88.
- BREVISPINOSA (Gillette & Palmer 1924), CINARA
Pinus contorta: Lac La Hache, Jun27/80.
- CALLIPTERUS (Hartig 1841), CALLIPTERINELLA
Betula pendula: Vancouver (UBC), Sep8/87.
- CAPILANOENSE Robinson 1969, AULACORTHUM
Rubus spectabilis: Peace Arch Park, Aug1/88; Vancouver, Jun21/88.
- CARNOSUM (Buckton 1876), MICROLOPHIUM
Urtica dioica: Peace Arch Park, Aug1/88.
- CERASI (Fabricius 1775), MYZUS
Prunus domestica: Pemberton, Apr12/88.
- CERTUS (Walker 1849), MYZUS
Gomphrena globosa: Vancouver (CDA), Oct18/88.
Nicotiana clevelandii: Vancouver (CDA), Mar1/89.
- CIRCUMFLEXUM (Buckton 1876), AULACORTHUM
Akebia quinata: Vancouver (UBC), Jun14/88.
Aquilegia x hybrida 'Dragonfly Mix': Vancouver (UBC), Nov22/88.
Gomphrena globosa: Vancouver (CDA), Feb20/89.
Schizophragma hydrangeoides: Vancouver (UBC), Jun30/88, Aug5/88.
Vitis vinifera 'Concord': Vancouver, May29/88.
- CITRICOLA van der Goot 1912, APHIS
Stranvaesia davidiana: Vancouver (UBC), Jun14/88.
- COLORADENSIS (Gillette 1917), CINARA
Picea glauca: Garvin Creek, Sep4/87.
- COWENI (Cockerell 1905), TAMALIA
Arctostaphylos uva-ursi ssp. *stipitata*: Vancouver (UBC), Sep30/88.
Arctostaphylos uva-ursi 'Vancouver Jade': Vancouver, Sep15/88.
- DORSATUM Richards 1967, AULACORTHUM
Gaultheria shallon: Vancouver (UBC), Apr15/87, May4/88, Jun14/88, Jun30/88.
- ENIGMAE Hottes & Frison 1931, RHOPALOSIPHUM
Typha orientalis: Vancouver (UBC), Sep29/87, Nov24/87.
- EUPHORBIAE (Thomas 1878), MACROSIPHUM
Arachis hypogaea 'Early Spanish': Vancouver (CDA), Feb20/89.
Chenopodium amaranticolor: Vancouver (CDA), Mar1/89.
Eucalyptus cinerea: Vancouver (UBC), Aug24/88.

- Ruta graveolens*: Vancouver (UBC), Jun8/88.
Ulmus americana: Burnaby, Jul21/84.
- FABAE Scopoli 1763, APHIS
Dracunculus vulgaris: Vancouver, Jun18/88.
Rheum rhabarbarum: Vancouver, Jun19/88.
- FOENICULI (Passerini 1860), HYADAPHIS
Lonicera 'Dropmore Scarlet': Vancouver (UBC), Sep30/88.
- FRAGAEOFOLII (Cockerell 1901), CHAETOSIPHON
Potentilla anserina: Goldstream, Aug20/59; Sea Island, Aug21/59.
- FRAGARIAE (Walker 1848), SITOBION
Typha orientalis: Vancouver (UBC), Nov24/87.
- GENTNERI (Mason 1947), FIMBRIAPHIS
Crataegus monogyna: Vancouver, Apr26/88.
- GILLETTEI Davidson 1915, EUCERAPHIS
Alnus rubra: Vancouver (UBC), Sep28/87, Oct8/87, Oct9/87.
- HELICHRYSI (Kaltenbach 1843), BRACHYCAUDUS
Myosotidium hortensia: Vancouver (UBC), Feb24/88.
Prunus cerasifera 'Atropurpurea': Vancouver, Jun23/88.
- HOLODISCI Robinson 1984, APHIS
Holodiscus discolor: Vancouver (UBC), Jun9/88.
- HUMBOLDTI (Essig 1941), UTAMPHOROPHORA
Physocarpus malvaceus: Vancouver (UBC), Nov4/88.
- HUMULI (Schrank 1801), PHORODON
Prunus cerasifera 'Atropurpurea': Kamloops, Jun26/88; Vancouver, Jun23/88.
- IDAEI van der Goot 1912, APHIS
Rubus idaeus: Vancouver, Aug25/60.
- LACTUCAE (Passerini 1860), ACYRTHOSIPHON
Lactuca serriola: Kamloops, Jun26/88.
- LONGICAUDA (Richards 1963), EOESSIGIA
Spiraea douglasii ssp. *menziesii*: Vancouver (UBC), Jun8/88, Jul9/88.
- LONICERAE (Siebold 1839), RHOPALOMYZUS
Lonicera 'Dropmore Scarlet': Vancouver (UBC), Sep30/88.
- MACROSPHUM (Wilson 1912), ACYRTHOSIPHON
Amelanchier laevis: Vancouver (UBC), Jul22/88.
- MENZIESIAE (Robinson 1969), ILLINOIA
Menziesia ferruginea ssp. *ferruginea*: Mount Seymour, Sep3/88.
- MODESTUM (Hottes 1926), MYZODIUM
Polytrichum juniperinum: Vancouver (UBC), Sep8/87.
- NERVATA (Gillette 1908), WAHLGRENIELLA
Arbutus menziesii: Vancouver (UBC), Dec16/88.
- *NICOTIANAE Blackman 1987, MYZUS
Alchemilla vulgaris: Vancouver (CDA), Sep3/88.
Anthriscus cerefolium: Vancouver (CDA), Nov9/88.
Apium graveolens: Vancouver (CDA), Nov9/88.
Arachis hypogaea 'Early Spanish': Vancouver (CDA), Nov9/88.
Asparagus officinalis: Vancouver (CDA), Nov9/88.
Beta vulgaris: Vancouver (CDA), Dec9/88.
Brassica juncea 'Florida Broadleaf': Vancouver (CDA), Sep3/88.
Brassica juncea 'Tendergreen Mustard Spinach': Vancouver (CDA), Sep3/88.
Brassica pekinensis: Vancouver (CDA), Sep3/88.
Capsella bursa-pastoris: Vancouver (CDA), Sep12/88.
Catharanthus roseus: Vancouver (CDA), Sep3/88.
Chenopodium capitatum: Vancouver (CDA), Nov9/88.
Chenopodium murale: Vancouver (CDA), Nov9/88.
Chenopodium quinoa: Vancouver (CDA), Nov9/88.

- Claytonia sibirica* var. *sibirica*: Vancouver (CDA), Feb20/89.
Cucumis sativus 'Straight Eight': Vancouver (CDA), Feb28/89.
Datura stramonium: Vancouver (CDA), Sep3/88.
Daucus carota: Vancouver (CDA), Nov9/88.
Dianthus barbatus: Vancouver (CDA), Jan5/89.
Fragaria vesca 'Semperflorens': Vancouver (CDA), Nov9/88.
Lactuca sativa: Vancouver (CDA), Jan5/89.
Lycopersicon lycopersicum 'Rutgers': Vancouver (CDA), Jan15/89.
Mimosa pudica: Vancouver (CDA), Feb20/89.
Nicotiana benthamiana: Vancouver (CDA), Sep26/88.
Nicotiana clevelandii: Vancouver (CDA), Sep26/88.
Nicotiana debneyi: Vancouver (CDA), Sep26/88.
Nicotiana glutinosa: Vancouver (CDA), Sep26/88.
Nicotiana rustica: Vancouver (CDA), Sep26/88.
Nicotiana sp.: Victoria, Jun15/88.
Nicotiana sylvestris: Vancouver (CDA), Sep26/88.
Nicotiana tabacum 'Harrownova': Vancouver (CDA), Oct10/88.
Nicotiana tabacum 'Havana 425': Vancouver (CDA), Oct10/88.
Nicotiana tabacum 'Samsun': Vancouver (CDA), Oct10/88.
Nicotiana tabacum 'White Burley': Vancouver (CDA), Oct10/88.
Nicotiana tabacum 'Xanthi': Vancouver (CDA), Oct10/88.
Petunia 'Coral Magic': Vancouver (CDA), Sep3/88.
Physalis pubescens: Vancouver (CDA), Sep3/88.
Plantago lanceolata: Vancouver (CDA), Jan5/89.
Plantago major: Vancouver (CDA), Jan26/89.
Raphanus sativus: Vancouver (CDA), Dec9/88.
Solanum tuberosum: Vancouver (CDA), Sep3/88.
Verbena 'Ideal Florist': Vancouver (CDA), Feb28/89.
Verbesina encelioides: Vancouver (CDA), Jan5/89.
Vicia faba: Vancouver (CDA), Mar1/89.
Zinnia elegans: Vancouver (CDA), Sep3/88.
- *NIGRA (Wilson 1919), CINARA
Pinus contorta: Quesnel, Aug11/80.
- *NOXIA (Mordvilko ex Kurdjumov 1913), DIURAPHIS
Phleum pratense: Creston, Nov23/88.
Triticum x aestivum: Creston, Nov23/88.
- NYMPHAEAE (Linnaeus 1761), RHOPALOSIPHUM
Anthriscus cerefolium: Vancouver (CDA), Feb20/89.
Lemna minor: Vancouver (UBC), Sep23/88.
- ORNATUS Laing 1932, MYZUS
Abelia x grandiflora: Vancouver (CDA), Dec9/88.
Anthriscus cerefolium: Vancouver (CDA), Mar8/89.
Capsella bursa-pastoris: Vancouver (UBC), Feb23/88.
Catharanthus roseus: Vancouver (CDA), Feb20/89.
Euonymus japonica 'Albo-marginata': Vancouver (UBC), Jan5/89.
Fatsia japonica: Vancouver (UBC), Jan26/89.
Garrya elliptica: Vancouver (UBC), Dec16/88.
Lactuca sativa: Vancouver (CDA), Jan13/89, Feb20/89.
Lavandula angustifolia ssp. *angustifolia*: Vancouver (UBC), Jan26/89.
Oxalis adenophylla: Vancouver (UBC), Jul20/88.
Plantago lanceolata: Vancouver (CDA), Jan26/89.
Potentilla fruticosa: Vancouver (UBC), Jun9/88.
Rumex obtusifolius ssp. *obtusifolius*: Vancouver (UBC), Feb23/88.
- PARVIFOLII Richards 1967, MACROSIPHUM
Vaccinium alaskaense: Mount Seymour, Sep3/88.

PERGANDEI (Wilson 1919), CINARA

Pinus contorta: Williams Lake, Jun18/80.

PERSICAE (Sulzer 1776), MYZUS

Alchemilla vulgaris: Vancouver (CDA), Oct18/88.

Arachis hypogaea 'Early Spanish': Vancouver (CDA), Oct18/88.

Brassica juncea 'Florida Broadleaf': Vancouver (CDA), Oct18/88.

Brassica juncea 'Tendergreen Mustard Spinach': Vancouver (CDA), Oct18/88.

Brassica oleracea var. *gemmifera* 'Jade Cross': Vancouver (UBC), Sep30/88.

Brassica pekinensis: Vancouver (CDA), Oct18/88.

Catharanthus roseus: Vancouver (CDA), Feb20/89.

Chenopodium amaranticolor: Vancouver (CDA), Feb20/89.

Chenopodium capitatum: Vancouver (CDA), Feb20/89.

Chenopodium murale: Vancouver (CDA), Feb20/89.

Chenopodium quinoa: Vancouver (CDA), Feb20/89.

Cucumis sativus 'Straight Eight': Vancouver (CDA), Nov21/88.

Dianthus barbatus: Vancouver (CDA), Nov21/88.

Fragaria vesca 'Semperflorens': Vancouver (CDA), Nov21/88.

Lycopersicon lycopersicum 'Rutgers': Vancouver (CDA), Nov21/88.

Nicotiana benthamiana: Vancouver (CDA), Nov21/88.

Nicotiana clevelandii: Vancouver (CDA), Nov21/88.

Nicotiana debneyi: Vancouver (UBC), Nov21/88.

Nicotiana rustica: Vancouver (CDA), Nov21/88.

Nicotiana sylvestris: Vancouver (CDA), Nov21/88.

Nicotiana tabacum 'Xanthi': Vancouver (CDA), Nov21/88.

Petunia 'Coral Magic': Vancouver (CDA), Feb20/89.

Plantago lanceolata: Vancouver (CDA), Jan15/89.

Raphanus sativus: Vancouver (CDA), Sep9/88.

Solanum tuberosum: Surrey, Aug15/88.

Verbena 'Ideal Florist': Vancouver (CDA), Jan15/89.

Verbesina encelioides: Vancouver (CDA), Jan15/89.

PISUM (Harris 1776), ACYRTHOSIPHON

Arachis hypogaea 'Early Spanish': Vancouver (CDA), Feb20/89.

POMI de Geer 1773, APHIS

Photinia x fraseri: Richmond, Jul14/88.

PRUNI (Geoffroy 1762), HYALOPTERUS

Typha orientalis: Vancouver (UBC), Aug25/87.

PSEUDOTAXIFOLIAE Palmer 1952, CINARA

Pseudotsuga menziesii: Garvin Creek, Sep4/87.

PTERINIGRUM Richards 1972, AULACORTHUM

Akebia quinata: Vancouver (UBC), Jun14/88, Nov17/88.

Alchemilla vulgaris: Vancouver (UBC), Nov17/88.

QUADRITUBERCULATA (Kaltenbach 1843), BETULAPHIS

Betula pendula: Vancouver (UBC), Sep8/87.

RHAMNI (Clarke 1903), SITOBION

Rhamnus purshiana: Vancouver (UBC), Nov5/88.

RIBISNIGRI (Mosley 1841), NASONOVIA

Lapsana communis: Vancouver, Jun6/88.

ROSAE (Linnaeus 1758), MACROSIPHUM

Rosa 'Peace': Vancouver (UBC), Jan26/89.

Rosa 'Playboy': Vancouver (UBC), Mar21/88.

Rosa rugosa 'Rubra': Vancouver (UBC), Nov17/88.

Rosa 'Vienna Woods': Vancouver (UBC), Mar21/88.

ROSARUM (Kaltenbach 1843), MYZAPHIS

Potentilla fruticosa: Vancouver, Jun25/88.

Rosa rubrifolia: Vancouver (UBC), Jun9/88.

SAMBUCI Linnaeus 1758, APHIS

Sambucus nigra: Vancouver (UBC), Jun8/88.

SCHLINGERI (Hille Ris Lambers 1966), UTAMPHOROPHORA

Juncus effusus var. *pacificus*: Vancouver (CDA), Jan13/89.

SOLANI (Kaltenbach 1843), AULACORTHUM

Anthriscus cerefolium: Vancouver (CDA), Feb20/89.

Arachis hypogaea 'Early Spanish': Vancouver (CDA), Nov9/88.

Camassia cusickii: Vancouver (UBC), Apr15/88.

Chenopodium capitatum: Vancouver (CDA), Mar1/89.

Chenopodium murale: Vancouver (CDA), Mar1/89.

Chenopodium quinoa: Vancouver (CDA), Mar1/89.

Cyclamen persicum: Vancouver, Jun11/88.

Davidia involucrata: Vancouver (UBC), Jun14/88.

Nicotiana clevelandii: Vancouver (CDA), Jan15/89.

Nicotiana debneyi: Vancouver (UBC), Feb20/89.

Potentilla alba: Vancouver (UBC), Apr15/88.

STAPHYLEAE (Koch 1854), RHOPALOSIPHONINUS

Abelia x grandiflora 'Select': Vancouver (UBC), Feb24/88.

Akebia quinata: Vancouver (UBC), Jun14/88.

Alstroemeria chilensis: Vancouver (UBC), Feb24/88.

Anthriscus cerefolium: Vancouver (CDA), Mar3/89.

Apium graveolens: Vancouver (CDA), Jan26/89.

Artemisia stelleriana: Vancouver (UBC), Feb24/88.

Arum pictum: Vancouver (UBC), Feb24/88.

Aucuba japonica var. *borealis*: Vancouver (UBC), Feb24/88.

Baccharis magellanica: Vancouver (UBC), Feb24/88.

Bergenia stracheyi: Vancouver (UBC), Feb24/88.

Campanula punctata: Vancouver (UBC), Jan5/89.

Campanula raddeana: Vancouver (UBC), Feb14/89.

Cephalaria gigantea: Vancouver (UBC), Feb24/88.

Cotyledon orbiculata: Vancouver (UBC), Feb24/88.

Dianthus giganteus ssp. *banaticus*: Vancouver (UBC), Jan5/89.

Dichelostemma volubile: Vancouver (UBC), Feb24/88.

Draba lindensii: Vancouver (UBC), Feb24/88.

Eucomis bicolor: Vancouver (UBC), Jan5/89.

Euonymus fortunei var. *radicans*: Vancouver (UBC), Feb14/89.

Glaucium corniculatum: Vancouver (UBC), Feb24/88.

Hebe 'Quick Silver': Vancouver (UBC), Feb24/88.

Helleborus orientalis: Vancouver (UBC), Feb24/88.

Hesperis matronalis: Vancouver (UBC), Mar21/88, Apr7/88.

Iris aucheri: Vancouver (UBC), Feb24/88.

Iris warleyensis: Vancouver (UBC), Feb24/88.

Lapeirousia anceps: Vancouver (UBC), Feb24/88.

Lavatera cachemiriana: Vancouver (UBC), Feb24/88.

Luetkea pectinata: Vancouver (UBC), Feb14/89.

Notholirion bulbiferum: Vancouver (UBC), Feb24/88.

Penstemon procerus var. *tolmiei*: Vancouver (UBC), Feb14/89.

Phoenicaulis cheiranthoides: Vancouver (UBC), Jan5/89.

Polemonium elegans: Vancouver (UBC), Jan5/89.

Ribes fasciculatum var. *chinense*: Vancouver (UBC), Feb24/88.

Romulea ramiflora: Vancouver (UBC), Feb24/88.

Scrophularia aquatica 'Variegata': Vancouver (UBC), Feb24/88.

Tellima grandiflora: Vancouver (UBC), Feb24/88.

Tellima grandiflora 'Purpurea': Vancouver (UBC), Feb24/88.

- STELLARIAE Theobald 1913, MACROSIPHUM
Chenopodium murale: Vancouver (CDA), Mar2/89.
Chenopodium quinoa: Vancouver (CDA), Feb20/89.
Cucumis sativus 'Straight Eight': Vancouver (CDA), Feb20/89.
Verbena 'Ideal Florist': Vancouver (CDA), Mar1/89.
- TENUICAUDA Bartholomew 1932, MACROSIPHUM
Urtica dioica: Ladner, Jun6/81, Jul14/81.
Urtica dioica ssp. *gracilis* var. *lyallii*: Rosdale, Aug10/88.
- TREMULAE (Linnaeus 1761), ASIPHUM
Picea glauca: Prince George, Sep28/88.
Pseudotsuga menziesii: Nelson, Aug21/87.
- TRIRHODUS (Walker 1849), LONGICAUDUS
Aquilegia x hybrida 'Dragonfly Mix': Vancouver (UBC), Nov22/88.
- VARIABILIS Richards 1961, BOERNERINA
Alnus viridis ssp. *sinuata*: Vancouver (UBC), Jul11/88.
- XYLOSTEI (de Geer 1773), PROCIPHILUS
Pseudotsuga menziesii: Nelson, Aug21/87.

ACKNOWLEDGEMENTS

We wish to thank Dr. A.G. Robinson, University of Manitoba, Winnipeg, Manitoba, Dr. R.L. Blackman, British Museum (Natural History), London, England and Dr. D. Voegtlin, Illinois Natural History Survey, Champaign, Illinois for valuable aid and advice in identification.

REFERENCES

- Addicott, J.F. 1981. Synonymy of *Aphis heraclella* Davis 1919 with *Aphis helianthi* Monell 1879 (Homoptera: Aphididae). *Canad. Ent.* 113:167-169.
- Cook, E.F. 1984. *Glabromyzus* and *Utamphorophora* (Homoptera: Aphididae) species of North America. *Ann. Entomol. Soc. Am.* 77:705-711.
- 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. 1988. The aphids (Homoptera: Aphididae) of British Columbia. 18. Further additions. *J. ent. Soc. Brit. Columbia* 85:87-97.
- Forbes, A.R. and C.K. Chan. 1987. The aphids (Homoptera: Aphididae) of British Columbia. 16. Further additions. *J. ent. Soc. Brit. Columbia* 84: 66-72.
- Forbes, A.R., and C.K. Chan. 1986a. The aphids (Homoptera: Aphididae) of British Columbia. 15. Further additions. *J. ent. Soc. Brit. Columbia* 83:70-73.
- Forbes, A.R., and C.K. Chan. 1986b. The aphids (Homoptera: Aphididae) of British Columbia. 14. Further additions. *J. ent. Soc. Brit. Columbia* 83:66-69.
- Forbes, A.R., and C.K. Chan. 1985. The aphids (Homoptera: Aphididae) of British Columbia. 13. Further additions. *J. ent. Soc. Brit. Columbia* 82:56-58.
- Forbes, A.R., and C.K. Chan. 1984. The aphids (Homoptera: Aphididae) of British Columbia. 12. Further additions. *J. ent. Soc. Brit. Columbia* 81:72-75.
- Forbes, A.R., and C.K. Chan. 1983. The aphids (Homoptera: Aphididae) of British Columbia. 11. Further additions. *J. ent. Soc. Brit. Columbia* 80:51-53.
- 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 and corrections. *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., C.K. Chan and R.G. Footitt. 1982. The aphids (Homoptera: Aphididae) of British Columbia. 10. Further additions. *J. ent. Soc. Brit. Columbia* 79:75-78.
- 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.