

APHIDS OF FOREST AND ORNAMENTAL TREES AND SHRUBS OF ISRAEL*

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ABSTRACT

A list is given of 108 species of aphids feeding on forest and ornamental trees and shrubs in Israel, including new data on host plants, phenology and distribution. A further list is given of 239 species of forest and ornamental plants and of aphids feeding on them. The food valence and economic importance of the insects are discussed. **KEY WORDS:** Aphidoidea, forest, ornamentals, trees and shrubs, Israel.

INTRODUCTION

The present list of plant lice (Aphidoidea) feeding on forest and ornamental trees and shrubs in Israel is based mainly on three publications: (a) Bodenheimer and Swirski (1957) (BS) includes comprehensive data on aphid species found here until 1957; (b) Swirski (1963) (S) lists species recorded between 1957 and 1963; (c) Halperin, Binazzi and Swirski (1988) (HBiS) list aphids found in Israel since 1963. Some records based on other sources are also referred to (Amitai, i. 1.; Eastop and Raccach, 1988; Halperin, i. 1.; Harpaz, 1953; Hille Ris Lambers, 1957; Koacn and Wool, 1977; Wertheim, 1954, 1955; Wool, 1984; and Zehavi and Rosen, 1987).

The present paper also includes unpublished data by Halperin and Swirski (HS) obtained since 1963 on new host plants, phenology and distribution in Israel.

Separate enumerations are given of the aphids (in systematical order) and of the host-plants (in alphabetical order). Synonyms of aphids and plants are given only for species previously mentioned in Israel under other names. For aphid species found only once, or at a single site, the locality is listed; for other species, the known distribution in Israel is indicated. The nomenclature of Eastop and Hille Ris Lambers (1976) is followed.

Identifications of aphids in the last 25 years are by (in chronological order) E. Swirski, the late D. Hille Ris Lambers (Bennekom, The Netherlands), V.F. Eastop and J.H. Martin (British Museum, Natural History, London), and A. Binazzi.

Abbreviations are: AV, Arava Valley; Ca, Mt. Carmel; CN, Central Negev; CP, Coastal Plain; DS, Dead Sea area; GH, Golan Heights; HV, Hula Valley; JD, Judean Desert; JM,

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Judean Mountains (Judean Hills); JV, Jordan Valley; LG, Lower Galilee; MH, Mount Hermon; NN, Northern Negev; Sa, Samaria; Sh, Shefela (Foothills of Judea); UG, Upper Galilee; YV, Yizre'el Valley; a.y.r., all year round. Months of collection are indicated by Roman numerals.

Part 1. ENUMERATION OF APHIDOIDEA

LACHNIDAE

LACHNINAE

1. *Lachnus crassicornis* Hille Ris Lambers
Quercus ithaburensis, Dafna (HV); viviparae, IV (BS).
2. *Lachnus roboris swirskii* Hille Ris Lambers
Quercus boissieri, *Q. ithaburensis*, *Q. suber*; GH, LG, CP; viviparae, summer (BS, HS).
3. *Lachnus subnudus* Börner
Quercus sp.; Nahalal (YV); viviparae, VII (BS).
4. *Pterochloroides persicae* (Cholodkovsky)
Amygdalus communis, *Prunus pissardii*; HV, YV, CP, Sh, JM; viviparae, a.y.r. (BS, HS).
5. *Tuberolachnus salignus* (Gmelin)
Salix acmophylla, *S. alba*, *S. babylonica*, *S. humboldtiana*, *Populus nigra* (rare); GH, CP, SH, JM; viviparae, a.y.r. (BS, S, HS).

CINARINAE

Tribus Cinarini

6. *Cinara cupressi* (Buckton)
Callitris sp., *Cupressus arizonica*, *C. benthamii*, *C. sempervirens*, *Juniperus oxycedrus*, *Sequoia sempervirens*, *Tetraclinis articulata*; LG, CP, JM; viviparae, IV, V (HBiS).
7. *Cinara fresai* (Blanchard)
Juniperus oxycedrus, Beit Jann (UG), spring (Mendel and Zehavi, 1987; HBiS).
8. *Cinara maritima* (Dufour) (= *excelsae* Hille Ris Lambers)
Pinus canariensis, *P. excelsa*, *P. pinaster*, *P. pinea*, *P. radiata*; GH, Ca, SA, CP, JM; viviparae, I-VII (Hille Ris Lambers, 1948; BS, S, HS).
9. *Cinara palaestinensis* Hille Ris Lambers
Pinus brutia, *P. halepensis*; Ca, SA, CP, JM, NN; viviparae, I-XI (Hille Ris Lambers, 1948; BS, HS).
10. *Cinara tujafilina* (del Guercio)
Thuja orientalis; CP, JM; viviparae, a.y.r. (BS, HS).

Tribus Eulachnini

11. *Eulachnus rileyi tauricus* Bozhko
Pinus pinea; Qiryat Anavim (JM); viviparae, III-X (HBiS).

12. *Eulachnus tuberculostemmatum* (Theobald)

Pinus brutia, *P. canariensis*, *P. halepensis*, *P. pinea*; GH, UG, LG, JV, YV, Ca, Sa, CP, JM, NN; viviparae, II-XI (BS, HS).

CHAITOPHORIDAE

13. *Chaitophorus euphraticus* Börner

Populus euphratica; JV, DS, AV; viviparae, II-X (BS, HS).

14. *Chaitophorus leucomelas* Koch (= *versicolor* Koch)

Populus canadensis, *P. deltoides*, *P. eugenei*, *P.x euramericana*, *P. nigra*; GH, HV, UG, Sa, CP; viviparae, II-VII, X-XII (S, HS).

15. *Chaitophorus minutus* Hille Ris Lambers

Salix sp.; Deganya (JV); viviparae, V (BS).

16. *Chaitophorus populeti* (Panzer) s.l.

Populus alba, *P. nigra*, *Populus* sp.; GH, HV, UG, LG, Ca, Sa, CP, JM; amphigonic cycle during XII-III, also viviparae a.y.r. (BS, S, HS). Includes *C. populeti* ssp. *populeti* and *C. populeti* ssp. *sensoriatus* Mimeur.

17. *Chaitophorus populiabae* (Boyer de Fonscolombe)

Populus alba, *P. nigra*; HV, LG, CP, JM; viviparae, IV-VI, IX (HBiS).

18. *Chaitophorus syriaca* Börner, i.l.

Salix sp.; Deganya (JV); viviparae, VII (BS).

Note: Probably *C. minutus* Hille Ris Lambers.

CALLAPHIDIDAE

19. *Myzocallis boernerii* Stroyan

Quercus ilex, *Q. ithaburensis*, *Q. suber*; HV, CP; viviparae, II-IV (HBiS).

20. *Myzocallis* sp. *castanicola* Baker gp.

Quercus ilex; Ilanot (CP); IV (HBiS).

21. *Myzocallis* sp.

Quercus calliprinos; Ilanot (CP); IV (HBiS).

Note: The late Dr. D. Hille Ris Lambers considered it as a new species (letter, 7.VIII.74).

22. *Myzocallis (Dryomyzus) glandulosus* Hille Ris Lambers

Quercus ithaburensis, JV, CP, JM; amphigonic cycle during the winter, viviparae in III-V, X-XII (BS, HS).

23. *Myzocallis komareki* Pašek

Quercus ithaburensis; YV, CP; III-V (HBiS).

24. *Myzocallis schreiberi* Hille Ris Lambers and Stroyan

Quercus ithaburensis; Miqwe Yisrael (CP); IV (HBiS).

Note: According to Eastop and Hille Ris Lambers (1976) possibly a synonym of *M. boernerii* Stroyan.

25. *Hoplocallis pictus* (Ferrari) (= *bodenheimeri* Hille Ris Lambers)

Quercus boissieri, *Q. cerris*, *Q. ilex*, *Q. ithaburensis*; HV, CP, JM; amphigonic cycle during the winter, viviparae in spring-autumn (BS, HS).

26. *Hoplochaetaphis parvula* Hille Ris Lambers and van den Bosch
Quercus boissieri, *Q. ithaburensis*; GH, YV; viviparae, IV-VI (HBiS).
27. *Ctenocallis israelicus* Hille Ris Lambers
Calycotome villosa; Ca, CP; viviparae, IV-VI (Hille Ris Lambers, 1954; BS, HBiS).
28. *Tuberculatus (Tuberculoides) moerickei* Hille Ris Lambers
Quercus boissieri; YV, CP; I, III, IV, XI (HBiS).

PHLOEOMYZIDAE

29. *Phloeomyzus passerinii* (Signoret)
Populus canadensis, *P. eugenei*, *P. x euramericana*, *P. nigra*; GH, HV, Sa, CP; viviparae, III-XI (S, HS).

THELAXIDAE

30. *Thelaxes suberi* (del Guercio) (= *confertae* Börner)
Quercus boissieri, *Q. calliprinos*, *Q. ithaburensis*; GH, UG, JV, YV, CP, JM; viviparae, IV-VI, IX-XI (BS, HS).

APHIDIDAE

PTEROCOMMATINAE

31. *Pterocomma populeum* (Kaltenbach)
Populus alba, *Populus* sp.; HV, CP, JM; viviparae, IV, V (S, HS).

APHIDINAE

Tribus Aphidini

32. *Aphis bougainvilleae* Börner, i.l.
Bougainvillea spectabilis; Tel Aviv (CP); XII (BS).
33. *Aphis chloris* Koch
Hypericum sp.; Ca, CP; viviparae, VIII, XI (S, HS).
34. *Aphis citricola* van der Goot (= ? *A. spiraeicola* Patch)
Acacia saligna, *Acalypha wilkesiana*, *Agonis flexuosa*, *Anagyris foetida*, *Bauhinia purpurea*, *B. variegata*, *Bougainvillea glabra*, *B. spectabilis*, *Buddleia madagascariensis*, *Calycotome villosa*, *Carissa grandiflora*, *Celtis australis*, *C. bungeana*, *C. sinensis*, *Cestrum purpureum*, *Chaenomeles japonica*, *Chamelaucium uncinatum*, *Combretum krausii*, *Cotoneaster franchetii*, *C. frigidus*, *C. henryana*, *C. horizontalis*, *C. pannosa*, *Crataegus aronia*, *C. monogyna*, *C. oxyacantha*, *Cryptostegia madagascariensis*, *Dodonaea viscosa*, *Dovyalis caffra*, *Ficus bengalensis*, *F. microcarpa*, *F. pumila*, *F. religiosa*, *F. sycomorus*, *Gardenia jasminoides*, *Hibiscus rosa-sinensis*, *Hypericum canariense*, *Jacaranda acutifolia*, *J. chelonja*, *Jasminum mesnyi*, *Lagerstroemia indica*, *Lantana camara*, *Lycium* sp., *Melia sempervirens*, *Morus nigra*, *Murraya paniculata*, *Paulownia tomentosa*, *Pittosporum crassifolium*, *P. tobira*, *Plumbago capensis*, *Prunus lyonii*, *P. pissardii*, *Pyracantha angustifolia*, *P. coccinea*, *P. crenato-serrata*, *P. crenulata*, *P. koidzumii*, *Raphiolepis umbellata*, *Rhamnus alaternus*, *R. palaestinus*,

Robinia pseudacacia, *Ruta* sp., *Spiraea vanhouttei*, *Thevetia peruviana*, *Ulmus canescens*, *Viburnum odoratissimum*, *V. suspensus*, *V. tinus*; HV, JV, YV, Ca, Sa, CP, Sh, JM, DS, NN; viviparae, a.y.r. (Amitai, i.l.; HBiS).

35. *Aphis craccivora* Koch

Acacia sp., *Ailanthus altissima*, *Asparagus* sp., *Atriplex halimus*, *Calotropis procera*, *Calycotome villosa*, *Cassia corymbosa*, *Celtis australis*, *C. bungeana*, *C. sinensis*, *Ceratonia siliqua*, *Colutea istria*, *Crotalaria* sp., *Cryptostegia grandiflora*, *C. madagascariensis*, *Dalbergia sissoo*, *Fagonia arabica*, *F. mollis*, *Ficus religiosa*, *Genista canariensis*, *Gymnocarpos decander*, *Laburnum anagyroides*, *Lycium shawii*, *Mandevilla laxa*, *Peganum harmala*, *Pittosporum heterophyllum*, *P. tobira*, *P. undulatum*, *Platanus orientalis*, *Prosopis* sp., *Raphiolepis indica*, *Retama raetam*, *Rhamnus alaternus*, *R. libanoticus*, *R. palaestinus*, *Robinia pseudacacia*, *Rosa* spp., *Rubus sanctus*, *Spartium junceum*, *Tamarix* sp., *Tipuana tipu*, *Virgilia arboidea*, *Wisteria sinensis*; GH, HV, JV, Ca, Sa, CP, Sh, JM, DS, NN, CN, AV; viviparae, a.y.r. (BS, S, HS).

36. *Aphis fabae* Scopoli, sensu latiore

Amygdalus communis, *Asparagus sprengeri*, *Atriplex halimus*, *Cassia corymbosa*, *Centranthus ruber*, *Cestrum purpureum*, *Eucalyptus camaldulensis*, *Euonymus japonicum*, *Lavatera* sp., *Pittosporum tobira*, *P. undulatum*, *Rosa* sp., *Rubia tenuifolia*; HV, UG, JV, YV, Sa, CP, JM, DS, NN; viviparae, a.y.r. (BS, S, HS).

37. *Aphis ficus* Theobald (= ? *gossypii* Glover)

Ficus sycomorus; Tel Aviv (CP); I-VIII (BS).

38. *Aphis frangulae* Kaltenbach

Rhamnus alaternus; HV, Sa; viviparae, III, IV (HBiS).

39. *Aphis gossypii* Glover

Acacia sp., *Acalypha wilkesiana*, *Agonis flexuosa*, *Ailanthus altissima*, *Amygdalus communis*, *Asparagus* sp., *Bauhinia purpurea*, *B. variegata*, *Bontia daphnoides*, *Broussonetia papyrifera*, *Buddleia madagascariensis*, *Callistemon* sp., *Campsis radicans*, *Catalpa hybrida*, *C. speciosa*, *Celtis* sp., *Chaenomeles japonica*, *Combretum krausii*, *Cordia* sp., *Crataegus aronia*, *C. monogyna*, *Duranta repens*, *Eucalyptus camaldulensis*, *E. melliodora*, *Ficus bengalensis*, *F. microcarpa*, *F. religiosa*, *F. sycomorus*, *Fraxinus excelsior*, *F. syriaca*, *Gardenia jasminoides*, *Grevillea robusta*, *Grewia tilifolia*, *Hibiscus liliiflorus*, *H. rosa-sinensis*, *H. schizopetalus*, *H. syriacus*, *Hypericum canariense*, *Inula viscosa*, *Jacaranda acutifolia*, *J. chelonia*, *Kigelia pinnata*, *Lagerstroemia indica*, *Lawsonia inermis*, *Liquidambar styraciflua*, *Luehea divaricata*, *Malvaviscus arborecens*, *Periploca graeca*, *Pistacia atlantica*, *P. palaestina*, *Pittosporum tobira*, *Pyracantha crenato-serrata*, *Rhamnus alaternus*, *R. libanoticus*, *R. palaestinus*, *Robinia pseudacacia*, *Rosa multiflora*, *Rosa* sp., *Russelia equisetiformis*, *Sarcopoterium spinosum*, *Schinus terebinthifolius*, *Spiraea vanhouttei*, *Tamarix* sp., *Tecomaria capensis*, *Terminalia arjuna*, *Trachycarpus fortunei*, *Ulmus* sp., *Zizyphus lotus*, *Z. spina-christi*; throughout the country; viviparae, a.y.r. (BS, S, HS).

40. *Aphis hederæ* Kaltenbach

Hedera helix; JV, YV, CP, JM; viviparae, a.y.r. (BS, HS).

41. *Aphis nerii* Boyer de Fonscolombe

Araujia sericofera, *Asclepias curassavica*, *Calotropis procera*, *Gomphocarpus fruticosus*, *G. sinicus*, *Hoya carnosa*, *Nerium oleander*; *Pergularia tomentosa*; JV, YV, CP, JM, AV; viviparae, a.y.r. (BS, HS).

42. *Aphis passeriniana* del Guercio
Salvia sp.; Ca; viviparae, XI. (S).
43. *Aphis pomi* de Geer
Cotoneaster franchetii, *C. henryana*, *C. horizontalis*, *C. pannosa*; YV, Sa, CP, JM; hibernates as egg, reproduces parthenogenetically from spring until autumn (BS, HS).
44. *Aphis punicae* Passerini
Duranta repens, *Plumbago capensis*; YV, CP, JM; amphigonic cycle during autumn and winter on pomegranate and a parthenogenetic cycle on *Duranta* a.y.r. (BS, HS).
45. *Aphis ruborum* (Börner)
Rubus sanctus; JV, CP, JM; viviparae, a.y.r. (BS).
46. *Aphis* aff. *salviae* Walker
Adhatoda vasica; Beit Jimal (Sh), IV (BS).
Note: According to Eastop and Hille Ris Lambers (1976) *A. salviae* is probably a synonym of *A. craccivora* Koch.
47. *Aphis serpylli* Koch, sensu latiore
Thymus capitatus; Ca; viviparae, XI (S).
48. *Aphis verbasci* Schrank
Buddleia davidii, *B. madagascariensis*; JV, CP, JM; viviparae, a.y.r. (BS, HS).
49. *Aphis* ? *viticis* Ferrari
Vitex agnus-castus; JV, CP; viviparae, IV, VI. (BS).
50. *Aphis zizyphi* Theobald (= ? *nasturtii* Kaltenbach)
Zizyphus spina-christi; GH, JV; viviparae, IV, V (BS, HS).
51. *Brachyunguis harmalae* Das
Astragalus spinosus, *Calligonum comosum*, *Fagonia arabica*, *F. mollis*, *Gymnocarpus decander*, *Loranthus acaciae*, *Lycium shawii*, *Nitraria retusa*, *Peganum harmala*, *Suaeda asphaltica*, *S. monoica*, *S. palaestina*; JV, NN, AV; viviparae, II, III, V, VI, XII (BS, S, HS).
52. *Brachyunguis* nr. *harmalae* Das
Calligonum comosum; Qiryat Hayyim (CP); II, VI. (HBiS).
53. *Brachyunguis tamaricis* (Lichtenstein)
Tamarix spp.; CP, JD, DS, NN, AV; viviparae, IV-VII (BS, HS).
54. *Brachyunguis* sp.
Suaeda asphaltica, *Tamarix aphylla*, *Tamarix* sp.; CP, JD, DS; viviparae, IV, VI, VIII (HBiS).
55. *Toxoptera aurantii* (Boyer de Fonscolombe)
Agonis flexuosa, *Campsis radicans*, *Carissa grandiflora*, *Casuarina torulosa*, *Catalpa hybrida*, *Celtis australis*, *C. bungeana*, *C. sinensis*, *Crotalaria madurensis*, *Dovyalis caffra*, *Eucalyptus camaldulensis*, *E. gomphocephala*, *Ficus microcarpa*, *F. religiosa*, *Hypericum canariense*, *Ilex cornuta*, *Jacaranda acutifolia*, *J. chelonia*, *Myrtus communis*, *Pittosporum heterophyllum*, *P. tobira*, *P. undulatum*, *Rhamnus alaternus*, *Schinus terebinthifolius*, *Schotia latifolia*, *Styrax officinalis*, *Tamarix aphylla*, *Thunbergia grandiflora*, *Ulmus canescens*, *U. glabra*; HV, JV, YV, Sa, CP, Sh, JM; viviparae, a.y.r. (BS, HS).
56. *Hyalopterus amygdali* (Blanchard)
Prunus sp., Dan (HV), 8.VI.77 (HBiS).
57. *Hyalopterus pruni* (Geoffroy)

Amygdalus communis, *Arundo donax*, *Phragmites communis*, *Prunus pissardii*, *P. ursina*; GH, HV, UG, VJ, YV, CP, AV; amphigonic cycle on *Prunus* spp. viviparae on *Phragmites* and *Arundo* a.y.r. (BS, HS).

58. *Melanaphis donacis* (Passerini)

Phragmites communis; CP, DS; viviparae, II, VI, XI (BS).

59. *Rhopalosiphum rufiabdominalis* (Sasaki)

Bambusa vulgaris, *Phragmites communis*; CV, Ca, CP, Sh, AV; viviparae, IX, XII-V (BS, HS).

Tribus Macrosiphini

60. *Brachycaudus (Thuleaphis) amygdalinus* (Schouteden)

Amygdalus communis; JV, YV, CP, Sh, JM, NN, CN; amphigonic cycle on *Amygdalus*, viviparae a.y.r. on *Polygonum* (BS, HS).

61. *Brachycaudus helichrysi* (Kaltenbach)

Russelia equisetiformis; Ca, CP, JM, DS, NN; viviparae, XII-VI. (BS, HS).

62. *Hayhurstia atriplicis* (Linnaeus)

Atriplex halimus; CP, AV; viviparae, III, VII (S).

63. *Xerophilaphis* sp.

Calligonum comosum; *Tamarix aphylla*; CP; viviparae, VI-VIII. (Halperin, i.l.).

64. *Hyadaphis asparagi* (Börner), i.l.

Asparagus palaestinus; Tel Aviv (CP; XI (BS).

Might be *Brachycorynella asparagi* (Aizenberg).

65. *Hyadaphis foeniculi* (Passerini)

Lonicera canadensis, *L. caprifolium*, *L. etrusca*; GH, YV, CP, JM; viviparae, II-VII, XII (BS, S, HS).

66. *Myzaphis turanica* Nevsky

Rosa sp.; CP, JM; viviparae, II, IV, V, XI, XII (BS).

67. *Chaetosiphon (Pentatrachopus) tetrarhodus* (Walker)

Rosa sp.; CP, JM; viviparae, V, VI (BS).

68. *Cavariella aegopodii* (Scopoli)

Salix alba; HV, CP, JM, AV; viviparae, IV-VI (BS, HS).

69. *Ovatus insitus* (Walker)

Crataegus aronia, *C. monogyna*; YV, Ca, Sa, CP; viviparae, IV-VI (BS, HS).

70. *Myzus persicae* (Sulzer)

Acalypha wilkesiana, *Amygdalus communis*, *Asclepias curassavica*, *Asparagus* sp., *Atriplex* sp., *Bougainvillea spectabilis*, *Buddleia davidii*, *Catalpa hybrida*, *Centranthus ruber*, *Cercis siliquastrum*, *Duranta repens*, *Eucalyptus camaldulensis*, *Euonymus* sp., *Fagonia mollis*, *Gymnocarpos decander*, *Inula viscosa*, *Lycium europaeum*, *L. shawii*, *Mandevilla laxa*, *Nerium oleander*, *Peganum harmala*, *Periploca graeca*, *Reseda muricata*, *Rubus sanctus*, *Russelia equisetiformis*, *Salvia aegyptiaca*, *Tamarix aphylla*, *Tecomaria capensis*, *Withania somnifera*, *Zilla spinosa*; GH, UG, LG, JV, YV, CP, Sh, JM, NN, CN, AV; viviparae, a.y.r. (BS, HS).

71. *Cryptomyzus* sp. nr. *korschelti* Börner

Prasium majus; Ilanot (CP); V (HBiS).

72. *Capitophorus inulae* (Passerini)
Inula viscosa; UG, Ca, CP; viviparae, XII-VI (S).
73. *Capitophorus inulae* (Passerini), gp.
Pulicaria crispa; AV; II, III (Eastop and Raccah, 1988).
74. *Eucarazzia elegans* (Ferrari)
Majorana syriaca, *Salvia* sp.; CP, JM; viviparae, II, V (Bs, HS).
75. *Aulacorthum solani* (Kaltenbach)
Euonymus japonicus, *Pyrostegia ignea*, *Russelia equisetiformis*, *Tecomaria capensis*;
CP, JM; viviparae, II, IV (BS, HS).
76. *Acyrtosiphon pisum* (Harris)
Dalbergia sissoo, *Spartium junceum*; JV, YV, CP, JM, DS; viviparae, XII-VI (BS, HS).
77. *Acyrtosiphon gossypii* Mordvilko
Alhagi maurorum, *Astragalus spinosus*, *Fagonia arabica*, *F. mollis*, *Spartium junceum*;
Kokhav haYarden (LG), Yotvata (AV); II, V, VI (S).
78. *Macrosiphum euphorbiae* (Thomas)
Ailanthus altissima; GH, JV, CP, NN; viviparae, a.y.r. (S, HS).
79. *Macrosiphum rosae* (Linnaeus)
Rosa sp.; UG, JV, YV, Ca, CP, JM; viviparae, a.y.r. (BS, HS).
80. *Metopolophium* sp.
Rosa sp.; UG, JV; viviparae, II, IV (Halperin, i.l.).
81. *Rhodobium porosum* (Sanderson)
Rosa spp.; UG, JV, CP; viviparae, IX-IV (BS, HS).
82. *Sitobion fragariae* (Walker)
Rosa sp.; HV, CP, Sh, JM; viviparae, XII-VI (BS, HS).
83. *Uroleucon (Belochilum) inulae* (Ferrari)
Inula viscosa; LG, JV, Ca, CP, Sh, JM, NN; viviparae, II, IV, VI-X (BS).
84. *Wahlgreniella nervata arbuti* (Davidson)
Arbutus andrachne; Mt. Meron (UG); IV (HBiS).

PEMPHIGIDAE

ERIOSOMATINAE

85. *Eriosoma (Schizoneura) lanuginosum* (Hartig)
Ulmus sp. (in galls); Merom Golan (GH), Yiftah(UG); V (HBiS).
86. *Tetraneura caeruleascens* (Passerini) (= *aegyptiaca* Theobald)
Ulmus sp. (in galls); Yizre'el (YV); V (HBiS).

PEMPHIGINAE

87. *Pemphigus immunis* Buckton (= *lichtensteini* Tullgren)
Populus nigra (in galls); UG, HV, JV, CP, JM; V-VII (BS, S, HS).

FORDINAE

88. *Aploneura lentisci* (Passerini)

- Pistacia lentiscus*; UG, LG, JV, YV, Ca, Sa, CP, Sh, JM, NN; in galls of *Pistacia*, IV-XI, secondary viviparae on roots of Gramineae, XII-IV (Harpaz, 1953; BS, HS).
89. *Asiphonella dactylonii* Theobald
Pistacia palaestina (in galls); MH, UG, CP, JM; VI-XI; secondary viviparae on roots of Gramineae (Wool, 1984).
90. *Forda marginata* Koch (= *follicularia* Passerini, = *trivialis* Passerini)
Pistacia palaestina (in galls); HV, UG, Ca, Sa, CP, JM; galls, IV-VII (BS, HS).
91. *Forda formicaria* von Heyden (= *semilunaris* Passerini)
Pistacia palaestina; HV, UG, LG, CP, JM; in galls on *Pistacia*, IV-X, secondary viviparae on roots of Gramineae (BS, HS).
92. *Forda hirsuta* Mordvilko
Bambusa vulgaris, *Pistacia atlantica*; HV, UG, CP, JM, NN, CN; in galls of *Pistacia*, IV-XI, secondary viviparae on roots of Gramineae. Found (in I and XII) on the sheathed nodes of *Bambusa vulgaris* cane (BS, HS).
93. *Forda dactylidis* Börner (= *mordvilkoii* Börner)
Pistacia atlantica; UG, LG, Sa, Sh, JM, NN, CN; gall on *Pistacia* IV-X, secondary viviparae on roots of Gramineae (Wertheim, 1954; BS, HS).
94. *Forda riccobonii* (Stefani)
Pistacia atlantica; UG, HV, JM, N; in galls on *Pistacia*, IV-XI, secondary viviparae on roots of Gramineae (BS, HS).
95. *Rectinasus buxtoni* Theobald
Pistacia atlantica (galls); GH, UG; in galls VI-XI (Wool, personal communication); secondary viviparae on roots of Gramineae (BS).
96. *Paracletus cimiciformis* von Heyden
Pistacia palaestina; UG, Ca, Sa, CP, JM; in galls on *Pistacia*, IV-X, secondary viviparae on roots of Gramineae (BS, HS).
97. *Smynthuroides betae* Westwood (= *phaseoli* Passerini)
Bambusa vulgaris, *Pistacia atlantica*; GH, HV, UG, JV, YV, Sa, CP, Sh, JM, NN, CN; in galls on *Pistacia*, III-XI, secondary viviparae on roots of mono- and bi-cotyledonous grasses. Found in X, XI on young shoots of *Bambusa vulgaris*, under the sheathed nodes (BS, HS).
98. *Baizongia pistaciae* (Linnaeus)
Pistacia palaestina; GH, UG, LG, YV, Ca, Sa, CP, JM; in galls on *Pistacia*, VI-XI, secondary viviparae on roots of Gramineae (Harpaz, 1953; Wertheim, 1954; BS, HS).
99. *Baizongiini* gen. sp.
Pistacia palaestina; MH, UG; in galls on *Pistacia*, X, XI (Köach and Wool, 1977).
100. *Baizongiini* gen. sp.
Pistacia khinjuk, Jerusalem, in galls (BS).
101. *Geoica utricularia* (Passerini)
Pistacia atlantica, *P. palaestina*; GH, UG, LG, Ca, Sa, CP, Sh, JM; in galls on *Pistacia*, IV-XI, secondary viviparae on roots of Gramineae (BS, HS).
102. *Geoica* sp. A
Pistacia atlantica, emigrant alatae, JM, X; secondary viviparae on roots of Gramineae; JM, Sh, CP; II, III, X, XI (R.L. Blackman, in litt.; HBIS).
103. *Geoica* sp. B
Pistacia atlantica, emigrant alatae, JM, XI; secondary viviparae reared by G. Wertheim

on roots of Gramineae, XI (Blackman, in litt.; Koach and Wool, 1977).

104. *Slavum wertheimae* Hille Ris Lambers

Pistacia atlantica; GH, UG, LG, Sa, JM, NN, CN; in galls, VI-X; the aphids live on *Pistacia* a.y.r. (Hille Ris Lambers, 1957; Wertheim, 1954, 1955).

PHYLLOXERIDAE

105. *Phylloxera quercus* Boyer de Fonscolombe

Quercus boissieri, *Q. calliprinos*; GH, Sa, CP, JM; viviparae, IV-X (BS, as *florentina*; HS).

106. *Phylloxera* sp. cf. *glabra* (von Heyden)

Quercus boissieri; Beit Ummar (JM); VIII (HBiS).

107. *Phylloxerina salicis* (Lichtenstein)

Salix sp.; Binyamina (CP); VI (BS).

108. *Aphanostigma piri* (Cholodkovsky and Mokrzecky)

Pyrus syriaca; HV, YV, CP, JM; parthenogenetic cycle a.y.r. (BS, S).

Part 2. ENUMERATION OF HOST-PLANTS

- Acacia saligna* (Mimosaceae)
Aphis citricola (= ? *A. spiraeicola*)
- Acacia* sp.
Aphis craccivora, *A. gossypii*
- Acalypha wilkesiana* (Euphorbiaceae)
Aphis citricola (= ? *A. spiraeicola*)
A. gossypii
Myzus persicae
- Adhatoda vasica* (Acanthaceae)
Aphis aff. *salviae*
- Agonis flexuosa* (Myrtaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
Toxoptera aurantii
- Ailanthus altissima* (= *A. glandulosa*) (Simarubiaceae)
Aphis craccivora, *A. gossypii*
Macrosiphum euphorbiae
- Alhagi maurorum* (Papilionaceae)
Acyrtosiphon gossypii
- Amygdalus communis* (Rosaceae)
Aphis fabae s.l., *A. gossypii*
Brachycaudus amygdalinus
Hyalopterus pruni
Myzus persicae
Pterochloroides persicae
- Anagyris foetida* (Papilionaceae)
Aphis craccivora
- Araujia sericifera* (Asclepiadaceae)
Aphis nerii
- Arbutus andrachne* (Ericaceae)
Wahlgrentella nervata arbuti
- Arundo donax* (Gramineae)
Hyalopterus pruni
- Asclepias curassavica* (Asclepiadaceae)
Aphis nerii
Myzus persicae
- Asparagus palaestinus* (Liliaceae)
Hyadaphis asparagi
- Asparagus sprengeri*
Aphis fabae, s.l.
- Asparagus* sp.
Aphis craccivora, *A. gossypii*
Myzus persicae
- Astragalus spinosus* (Papilionaceae)
Acyrtosiphon gossypii
Brachyunguis harmalae
- Atriplex halimus* (Chenopodiaceae)
Aphis craccivora, *A. fabae* s.l.
Hayhurstia atriplicis
- Atriplex* sp.
Myzus persicae
- Bambusa vulgaris* (Gramineae)
Forda hirsuta
Rhopalosiphum ruflabdominalis
Smynturodes betae
- Bauhinia purpurea*, *B. variegata* (Caesalpiniaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
- Bontia daphnoides* (Myoporaceae)
Aphis gossypii
- Bougainvillea glabra* (Nyctaginaceae)
Aphis citricola (= ? *A. spiraeicola*)
- Bougainvillea spectabilis*
Aphis bougainvilleae, *A. citricola* (= ? *A. spiraeicola*)
Myzus persicae
- Broussonetia papyrifera* (Moraceae)
Aphis gossypii
- Buddleia davidii* (Loganiaceae)
Aphis verbasci
Myzus persicae
- Buddleia madagascariensis*
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*,
A. verbasci
- Calligonum comosum* (Polygonaceae)
Brachyunguis harmalae, *Brachyunguis* sp. nr.
harmalae
Xerophilaphis sp.
- Callistemon* sp. (Myrtaceae)
Aphis gossypii
- Callitris* sp. (Cupressaceae)
Cinara cupressi
- Calotropis procera* (Asclepiadaceae)
Aphis craccivora, *A. nerii*
- Calycotome villosa* (Papilionaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. craccivora*
Ctenocallis israelicus
- Campsis radicans* (Bignoniaceae)
Aphis gossypii
Toxoptera aurantii
- Carissa grandiflora* (Apocynaceae)
Aphis citricola (= ? *A. spiraeicola*)
Toxoptera aurantii
- Cassia corymbosa* (= *C. floribunda*) (Caesalpiniaceae)
Aphis craccivora, *A. fabae*, s.l.
- Casuarina torulosa* (Casuarinaceae)
Toxoptera aurantii
- Catalpa hybrida* (Bignoniaceae)
Aphis gossypii
Myzus persicae
Toxoptera aurantii

- Catalpa speciosa*
Aphis gossypii
- Celtis australis*, *C. bungeana*, *C. sinensis*
 (Ulmaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. craccivora*
Toxoptera aurantii
- Celtis* sp.
Aphis gossypii
- Centranthus ruber* (Valerianaceae)
Aphis fabae
Myzus persicae
- Cerantonis siliqua* (Caesalpiniaceae)
Aphis craccivora
- Cercis siliquastrum* (Caesalpiniaceae)
Myzus persicae
- Cestrum purpureum* (Solanaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. fabae*,
 s.l.
- Chaenomeles japonica* (Rosaceae)
Aphis citricola (= *A. spiraeicola*), *A. gossypii*
- Chamelauclium uncinatum* (Myrtaceae)
Aphis citricola (? *A. spiraeicola*)
- Colutea istria* (Papilionaceae)
Aphis craccivora
- Combretum kraussii* (Combretaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
- Cordia* sp. (Boraginaceae)
Aphis gossypii
- Cotoneaster franchetii*, *C. henryana*, *C.*
horizontalis, *C. pannosa* (Rosaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. pomi*
- Cotoneaster frigidus*
Aphis citricola (= ? *A. spiraeicola*)
- Crataegus aronia*, *C. monogyna* (Rosaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
Ovatus insitus
- Crataegus oxyacantha*
Aphis citricola (= ? *A. spiraeicola*)
- Crotalaria madurensis* (Papilionaceae)
Toxoptera aurantii
- Crotalaria* sp.
Aphis craccivora
- Cryptostegia grandiflora*, *C. madagascariensis*
 (Asclepiadaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. craccivora*
- Cupressus arizonica*, *C. benthamii*, *C. sempervirens*
 (Cupressaceae)
Cinara cupressi
- Dalbergia sissoo* (Papilionaceae)
Acyrtosiphon pisum
Aphis citricola (= ? *A. spiraeicola*)
- Dodonaea viscosa* (Sapindaceae)
Aphis citricola (= ? *A. spiraeicola*)
- Dovyalis* (= *Aberia*) *caffra* (Flacourtiaceae)
- Aphis citricola* (= ? *A. spiraeicola*)
Toxoptera aurantii
- Duranta repens* (= *D. plumieri*) (Verbenaceae)
Aphis gossypii, *A. punicea*
Myzus persicae
- Eucalyptus camaldulensis* (Myrtaceae)
Aphis fabae, *A. gossypii*
Myzus persicae
Toxoptera aurantii
- Eucalyptus gomphocephala*
Toxoptera aurantii
- Eucalyptus melliodora*
Aphis gossypii
- Euonymus japonicus* (Celastraceae)
Aphis fabae, s.l.
Aulacorthum solani
Euonymus sp.
Myzus persicae
- Fagonia arabica* (Zygophyllaceae)
Acyrtosiphon gossypii
Brachyunguis harmalae
- Fagonia mollis*
Acyrtosiphon gossypii
Aphis craccivora
Brachyunguis harmalae
Myzus persicae
- Ficus bengalensis* (Moraceae)
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
- Ficus microcarpa* (= *F. nitida*)
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
Toxoptera aurantii
- Ficus pumila*
Aphis citricola (= ? *A. spiraeicola*)
- Ficus religiosa*
Aphis citricola (= ? *A. spiraeicola*), *A.*
craccivora, *A. gossypii*
Toxoptera aurantii
- Ficus sycomorus*
Aphis citricola (= ? *A. spiraeicola*), *A. ficus*, *A.*
gossypii
- Fraxinus excelsior*, *F. syriaca* (Oleaceae)
Aphis gossypii
- Gardenia jasminoides* (Rubiaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
- Genista canariensis* (Papilionaceae)
Aphis craccivora
- Gomphocarpus fruticosus*, *G. sinaicus*
 (Asclepiadaceae)
Aphis nerii
- Grevillea robusta* (Proteaceae)
Aphis gossypii
- Grewia tillifolia* (Tiliaceae)

- Aphis gossypii*
Gymnocarpus decander (Caryophyllaceae)
Aphis craccivora
Brachyunguis harmalae
Myzus persicae
- Hedera helix* (Araliaceae)
Aphis hederae
Hibiscus liliflorus, *H. schizopetalus*, *H. syriacus*
(Malvaceae)
Aphis gossypii
Hibiscus rosa-sinensis
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
Hoya carnosa (Asclepiadaceae)
Aphis nerii
Hypericum canariense (Hypericaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
Toxoptera aurantii
Hypericum sp.
Aphis chloris
- Ilex cornuta* (Aquifoliaceae)
Toxoptera aurantii
Inula viscosa (Compositae)
Aphis gossypii
Capitophorus inulae
Myzus persicae
Uroleucon (Belochilum) inulae
- Jacaranda ncutifolia*, *J. chelonina* (Bignoniaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. gossypii*
Toxoptera aurantii
Jasminum mesnyi (Oleaceae)
Aphis citricola (= ? *A. spiraeicola*)
Juniperus oxycedrus (Cupressaceae)
Cinara cupressi, *C. fresai*
- Kigelia pinnata* (Bignoniaceae)
Aphis gossypii
- Laburnum anagyroides* (Papilionaceae)
Aphis craccivora
Lagerstroemia indica (Lythraceae)
Aphis citricola (= ? *A. spiraeicola*)
A. gossypii
Lantana camara (Verbenaceae)
Aphis citricola (= ? *A. spiraeicola*)
Lavatera sp. (Malvaceae)
Aphis fabae, s.l.
Lawsonia inermis (Lythraceae)
Aphis gossypii
Liquidambar styraciflua (Hamamelidaceae)
Aphis gossypii
Lonicera canadensis, *L. caprifolium*, *L. etrusca*
(Caprifoliaceae)
- Hyadaphis foeniculi*
Loranthus acaciae (Loranthaceae)
Brachyunguis harmalae
Luehea divaricata (Tiliaceae)
Aphis gossypii
Lycium europaeum (Solanaceae)
Myzus persicae
Lycium shawii
Aphis craccivora
Brachyunguis harmalae
Myzus persicae
Lycium sp.
Aphis citricola (= ? *A. spiraeicola*)
- Majorana syriaca* (Labiatae)
Eucarazzia elegans
Malvaviscus arborescens (Malvaceae)
Aphis gossypii
Mandevilla laxa (Apocynaceae)
Aphis craccivora
Myzus persicae
Melia sempervirens (Meliaceae)
Aphis citricola (= ? *A. spiraeicola*)
Morus nigra (Moraceae)
Aphis citricola (= ? *A. spiraeicola*)
Murraya paniculata (= *M. exotica*) (Rutaceae)
Aphis citricola (= ? *A. spiraeicola*)
Myrtus communis (Myrtaceae)
Toxoptera aurantii
- Nerium oleander* (Apocynaceae)
Aphis nerii
Myzus persicae
Nitraria retusa (Zygophyllaceae)
Brachyunguis harmalae
- Paulownia tomentosa* (Scrophulariaceae)
Aphis citricola (= ? *A. spiraeicola*)
Peganum harmala (Zygophyllaceae)
Aphis craccivora
Brachyunguis harmalae
Myzus persicae
Pergularia tomentosa (Asclepiadaceae)
Aphis nerii
Periploca graeca (Asclepiadaceae)
Aphis gossypii
Myzus persicae
Phragmites communis (Gramineae)
Hyalopterus pruni
Melanaphis donacis
Rhopalosiphum ruftabdominalis
Pinus brutia, *P. halepensis* (Pinaceae)
Cinara palaestinis
Eulachnus tuberculostemmatum
Pinus canariensis

- Cinara maritimae*
Eulachnus tuberculostemmatum
Pinus excelsa, *P. pinaster*, *P. radiata*
Cinara maritimae
Pinus pinea
Cinara maritimae
Eulachnus rileyi tauricus, *E. tuberculostemmatum*
Pistacia atlantica (Anacardiaceae)
Aphis gossypii
Forda dactylidis, *F. hirsuta*, *F. riccobonii*
Geoica utricularia, *Geoica* sp. A, *Geoica* sp. B
Rectinasus buxtoni
Slavum wertheimae
Smynthuroides betae
Pistacia khinjuk
 Baizongiini gen. sp.
Pistacia lentiscus
Aploneura lentisci
Pistacia palaestina
Aphis gossypii
Asiphonella dactylonti
Baizongia pistaciae
 Baizongiini gen. sp.
Forda formicaria, *F. marginata*
Geoica utricularia
Paracletus cimiciformis
Pittosporum crassifolium (Pittosporaceae)
Aphis citricola (? *A. spiraecola*)
Pittosporum heterophyllum
Aphis craccivora
Toxoptera aurantii
Pittosporum tobira
Aphis citricola (= ? *A. spiraecola*), *A. craccivora*, *A. fabae*, s.l., *A. gossypii*
Toxoptera aurantii
Pittosporum undulatum
Aphis craccivora, *A. fabae*, s.l.
Toxoptera aurantii
Platanus orientalis (Platanaceae)
Aphis craccivora
Plumbago capensis (Plumbaginaceae)
Aphis citricola (= ? *A. spiraecola*), *A. punicae*
Populus alba (Salicaceae)
Chaitophorus populeti, s.l., *C. populiabae*
Pterocomma populeum
Populus canadensis, *P. eugenei*, *P. euramericana*
Chaitophorus leucomelas
Phloeomyzus passerinii
Populus euphratica
Chaitophorus euphraticus
Populus nigra
Chaitophorus leucomelas, *C. populeti*, *C. populiabae*
Pemphigus immuns
Phloeomyzus passerinii
Tuberolachnus salignus
Populus sp.
Pterocomma populeum
Prasium majus (Labiatae)
Cryptomyzus sp. nr. *korschelti*
Prosopis sp. (Mimosaceae)
Aphis craccivora
Prunus lyonii (Rosaceae)
Aphis citricola (= ? *A. spiraecola*)
Prunus pissardii
Aphis citricola (= ? *A. spiraecola*)
Hyalopterus pruni
Pterochloroides persicae
Prunus ursina
Hyalopterus pruni
Prunus sp.
Hyalopterus amygdali
Pulicaria crispa (Compositae)
Capitophorus inulae gp.
Pyracantha angustifolia, *P. coccinea*, *P. crenulata*,
P. koidzumii (Rosaceae)
Aphis citricola (= ? *A. spiraecola*)
Pyracantha crenato-serrata
Aphis citricola (= ? *A. spiraecola*) *A. gossypii*
Pyrostegia ignea (Bignoniaceae)
Aulacorthum solani
Pyrus syriaca (Rosaceae)
Aphanostigma piri
Quercus boissleri (Fagaceae)
Hoplocallis pictus
Hoplochaetaphis parvula
Lachnus roboris swirskii
Phylloxera sp. cf. *glabra*, *P. quercus*
Thelaxes suberi
Tuberculatus moerickei
Quercus calliprinos
Myzocallis sp.
Phylloxera quercus
Thelaxes suberi
Quercus cerris
Hoplocallis pictus
Quercus ilex
Hoplocallis pictus
Myzocallis boernerii, *Myzocallis* sp. *castanica* gp.
Quercus ithaburensis
Hoplocallis pictus
Hoplochaetaphis parvula
Lachnus crassicornis, *L. roboris swirskii*
Myzocallis boernerii, *M. glandulosus*, *M. komareki*, *M. schrelberi*
Thelaxes suberi
Quercus suber
Lachnus roboris swirskii

- Myzocallis boeneri*
Quercus sp.
Lachnus subnudus
- Raphiolepis indica* (Rosaceae)
Aphis craccivora
Raphiolepis umbellata (= *R. japonica*)
Aphis citricola (= ? *A. spiraeicola*)
Reseda muricata (Resedaceae)
Myzus persicae
Retama raetam (Papilionaceae)
Aphis craccivora
Rhamnus alaternus (Rhamnaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. craccivora*, *A. frangulae*
A. gossypii
Toxoptera aurantii
Rhamnus libanoticus, *R. palaestinus*
Aphis citricola (= ? *A. spiraeicola*), *A. craccivora*, *A. gossypii*
Robinia pseudacacia (Papilionaceae)
Aphis citricola (= ? *A. spiraeicola*), *A. craccivora*, *A. gossypii*
Rosa multiflora (= *R. polyantha*) (Rosaceae)
Aphis gossypii
Rosa spp.
Aphis craccivora, *A. fabae*, s.l., *A. gossypii*
Chaetosiphon (*Pentatrachopus*) *tetrarhodus*
Macrosiphum rosae
Metopolophium sp.
Myzaphis turanica
Rhodobium porosum
Sitobion fragariae
Rubia tenuifolia (Rubiaceae)
Aphis fabae, s.l.
Rubus sanctus (Rosaceae)
Aphis craccivora, *A. ruborum*
Myzus persicae
Russelia equisetiformis (= *R. juncea*) (Scrophulariaceae)
Aphis gossypii
Aulacorthum solani
Brachycaudus helichrysi
Myzus persicae
Ruta sp. (Rutaceae)
Aphis citricola (= ? *A. spiraeicola*)
- Salix acmophylla*, *S. humboldtiana* (Salicaceae)
Tuberolachnus salignus
Salix alba
Cavariella aegopodii
Tuberolachnus salignus
Salix babylonica
Tuberolachnus salignus
Salix sp.
- Chaitophorus minutus*, *C. syriaca*
Phylloxera salicis
Salvia sp. (Labiatae)
Aphis passeriniana
Eucarazzia elegans
Myzus persicae
Sarcopoterium spinosum (Rosaceae)
Aphis gossypii
Schinus terebinthifolius (Anacardiaceae)
Aphis gossypii
Toxoptera aurantii
Schotia latifolia (Caesalpiniaceae)
Toxoptera aurantii
Sequoia sempervirens (Pinaceae)
Cinara cupressi
Spartium junceum (Papilionaceae)
Acyrtosiphon gossypii, *A. pisum*
Aphis craccivora
Spiraea vanhouttei (Rosaceae)
Aphis citricola (= ? *A. spiraeicola*)
A. gossypii
Aphis citricola (= ? *A. spiraeicola*)
Styrax officinalis (Styraceae)
Toxoptera aurantii
Suaeda asphaltica (Chenopodiaceae)
Brachyunguis harmalae, *Brachyunguis* sp.
Suaeda monoica, *S. palaestina*
Brachyunguis harmalae
- Tamarix aphylla* (Tamaricaceae)
Brachyunguis sp.
Myzus persicae
Toxoptera aurantii
Xerophilaphis sp.
Tamarix spp.
Aphis craccivora, *A. gossypii*
Brachyunguis tamaricis, *Brachyunguis* sp.
Tecomaria capensis (Bignoniaceae)
Aphis gossypii
Aulacorthum solani
Myzus persicae
Terminalia arjuna (Combretaceae)
Aphis gossypii
Tetraclinis articulata (Cupressaceae)
Cinara cupressi
Thevetia peruviana (Apocynaceae)
Aphis citricola (= ? *A. spiraeicola*)
Thuja orientalis (Cupressaceae)
Cinara tujafilina
Thunbergia grandiflora (Acanthaceae)
Toxoptera aurantii
Thymus capitatus (Labiatae)
Aphis serpylli, s.l.
Tipuana tipu (Papilionaceae)
Aphis craccivora

<i>Trachycarpus fortunei</i> (Palmaceae)	<i>Virgilia arboidea</i> (Papilionaceae)
<i>Aphis gossypii</i>	<i>Aphis craccivora</i>
<i>Ulmus canescens</i> (Ulmaceae)	<i>Vitex agnus-castus</i> (Verbenaceae)
<i>Aphis citricola</i> (= ? <i>A. spiraeicola</i>)	<i>Aphis</i> ? <i>viticis</i>
<i>Toxoptera aurantii</i>	<i>Wisteria sinensis</i> (Papilionaceae)
<i>Ulmus glabra</i>	<i>Aphis craccivora</i>
<i>Toxoptera aurantii</i>	<i>Withania somnifera</i> (Solanaceae)
<i>Ulmus</i> sp.	<i>Myzus persicae</i>
<i>Aphis gossypii</i>	<i>Zilla spinosa</i> (Cruciferae)
<i>Eriosoma lanuginosum</i>	<i>Myzus persicae</i>
<i>Tetraneura caerulescens</i>	<i>Zizyphus lotus</i> (Rhamnaceae)
<i>Viburnum odoratissimum</i> , <i>V. suspensum</i> , <i>V. tinus</i>	<i>Aphis gossypii</i>
(Caprifoliaceae)	<i>Zizyphus spina-christi</i>
<i>Aphis citricola</i> (= ? <i>A. spiraeicola</i>)	<i>Aphis gossypii</i> , <i>A. zizyphi</i>

DISCUSSION

The list of plant lice feeding on forest and ornamental trees and shrubs in Israel includes 108 species, 97 mono-oligophagous (including 17 species of Fordinae having secondary, mostly gramineous hosts) and 11 polyphagous species. Aphid species feeding on the highest number of hosts are *Myzus persicae*, *Toxoptera aurantii*, *Aphis craccivora*, *A. citricola* (= ? *A. spiraeicola*) and *A. gossypii*, which were found on 30, 30, 43, 67 and 69 plant species, respectively.

Aphids were recorded from 239 host-plant species, which belong to 146 genera (62 families). The botanical families having the highest number of aphid-hosting genera are Rosaceae with 12 and Papilionaceae with 15 plant genera. Other conspicuous aphid-hosting families are Myrtaceae, Caesalpiniaceae and Cupressaceae (5 genera each), Bignoniaceae (6 genera) and Asclepiadaceae (8 genera). Plant genera hosting the highest number of aphid species are: *Populus* – 8 mono-oligophagous species, including one gall-forming species; *Rosa* – 9 species, 6 of them mono-oligophagous; *Quercus* – 15 mono-oligophagous species; and *Pistacia* – 18 species, 17 of them mono-oligophagous, gall-forming species. Plant species hosting the highest number of mono-oligophagous species are: *Populus nigra*, *Quercus boissieri*, *Pistacia palaestina*, *Pistacia atlantica* and *Quercus ithaburensis* – with 6, 7, 7, 9 and 9 aphid species, respectively.

Most of the aphids belong to the local fauna, but some are of foreign origin. The following species are considered to be foreign [data of the first records are based on Bytinski-Salz (1966); Porath et al. (1974); Mendel and Golan (1983) and Halperin (1980, 1986a, b)]: 1) *Cinara cupressi* – 1980, central Coastal Plain; common in the Mediterranean Basin (Barbagallo and Stroyan, 1980). 2) *C. tujafilina* – 1946, Jerusalem (JM) and Coastal Plain; known from Europe. 3) *Eulachnus rileyi tauricus* – 1985; Qiryat 'Anavim (JM); known from Europe. 4) *E. tuberculostemmata* – 1922, Jericho (JV); first described from Egypt in 1915. 5-8) *Chaitophorus leucomelas*, *C. populeti* and *Pterocomma populeum* – probably introduced from Europe with poplar logs or cuttings; *Chaitophorus populialbae* – 1971, Kefar Blum (HV); introduced probably from Europe. 9) *Phloeomyzus passerinii* –

Euro-Siberian, re-introduced in 1958 from Italy with poplar cuttings. 10) *Aphis citricola* (= ? *A. spiraeicola*) – 1970, Sedot Yam (CP); one of the most polyphagous, most common and most noxious aphids on ornamentals and fruit trees. 11) *A. ficus* – 1931, Tel Aviv (CP). 12) *A. hederiae* – 1938, Nahalal (YV); European. 13) *A. pomi* – probably an old introduction. 14) *Toxoptera aurantii* – 1922, Miqwe Yisra'el (CP); widely distributed in tropical regions. 15) *Brachycaudus helichrysi* – 1923, Ramat Gan (CP); cosmopolitan. 16) *Aulacorthum solani* – 1946, Jerusalem. 17) *Macrosiphum rosae* – very old introduction. 18) *Rhodobium porosum* – 1946, Mishmar haSharon (CP); widely distributed in warmer countries. 19) *Pemphigus immunis* – 1922; Tel Aviv (CP); probably introduced from Europe. 20) *Aphanostigma piri* – 1935, 'Afula, 'En Harod (YV); introduced from Europe.

Damage done by aphids to forest and ornamental plants is expressed mainly by defiling various parts of the plant and by occasional early leaf shedding. There are records of leaf deformation caused by *Aphis citricola* (= ? *A. spiraeicola*) (Halperin, 1982 and Zehavi, 1985) of wilting of branchlets from mass feeding by *Cinara cupressi*, and of tree decline – from *Phloeomyzus passerinii* (Halperin, 1980). *Aphis gossypii* and *A. citricola* (= ? *A. spiraeicola*) are considered as vectors of the Tristeza virus in citrus (Raccah *et al.*, 1978), but nothing is yet known in Israel on aphids as vectors of plant diseases in forest and ornamental trees and shrubs.

The following species are considered as pests:

a) **Mono-oligophagous species:** 1) *Eulachnus tuberculostemmatum* on *Pinus*; 2) *Cinara cupressi* on Cupressaceae and *Sequoia sempervirens*; 3-6) *Chaitophorus leucomelas*, *C. populeti*, *C. populiabae* and *Pterocomma populeum* on *Populus*; 7,8) *Myzocallis* spp. and *Hoplocallis pictus* on *Quercus*; 9) *Brachycaudus amygdalinus* on *Amygdalus*; 10,11) *Macrosiphum rosae* and *Rhodobium porosum*, on *Rosa*.

b) **Polyphagous species:** 12) *Aphis citricola* (= ? *A. spiraeicola*), 13) *A. craccivora*, 14) *A. fabae*, 15) *A. gossypii*, 16) *A. nerii*, 17) *Brachycaudus helichrysi* and 18) *Myzus persicae*.

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