

**MORE APHIDS (HOMOPTERA, APHIDOIDEA) COLLECTED
IN THAILAND (1978 - 1984)**

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ABSTRACT

111 species of aphids are listed; 103 are from host plant associations not previously reported in Thailand. As in the preceding long term survey an astonishingly high proportion of over half, i.e. 66 species, of the total found are new to Thailand. This indicates that the aphid fauna of the country is still incompletely known. Some 40 species are not yet identified to species level, several being new or belonging to difficult taxa. The total number of aphid species reported from Thailand, therefore, now amounts to about 160.

SYNOPSIS

There is hardly any need to point out the importance aphids have as the paramount vectors of plant viruses in agriculture. Despite this, and despite the fact that several surveys had been carried out in Thailand, the aphid fauna of the country still needed further study: the preceding survey (1974-1977) listed over 50 percent of the species found as new records for Thailand.

Previous faunistic and taxonomic work on the aphids of Thailand were by TAKAHASHI (1941), PHOLBOON (1965), LERKVIREE (1967), ROBINSON (1972 a, b), BÄNZIGER (1976, 1977), DANIELSSON & ROBINSON (1978), and CHAROENRIDHI *et al.* (1979). Until then altogether some 57 fully identified species of aphids were known to be present in Thailand. More recently, in the largest list so far, out of 59 species of aphids found between 1974 and 1977, 33 were new to Thailand (Bänziger, 1980a). To give a complete picture of the aphid fauna of the country, that author also mentioned the names of all the other 34 species recorded by earlier researchers but not found during his study.

Little new information on the aphid fauna of Thailand has been published since. A new species has been described as *Uroleucon acutirostre* Bänziger (1980b). A mainly faunistic study on the aphids from the Bangkhen area listed 20 species without any new records but added some data on the species' general aspects as well as names of ants and predators living among them (MELANON & ROJANAWONGSE, 1983). Also in 1983, an aphid population study based on yellow pan traps set in a soybean field in N. Thailand caught, between January and April, over 10,000 aphid

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specimens belonging to at least 31 different species (BÄNZIGER & HENGSAWAD, 1985). Among these *Acyrtosiphon* sp. aff. *kondo* Shinji, *Anomalosiphum indigoferae* A.K. Ghosh et al., *Cervaphis rappardi* Hille Ris Lambers, and *Sarucallis kahuokalani* (Kirkaldi) were mentioned as first records for Thailand.

Hence the total number of aphid species recorded in the country before the present survey amounted to some 97 (not considering those of which only the genus is known).

During a research and teaching appointment of the author one of several duties was to continue the survey of the aphids of Thailand. A preliminary accession list of nearly 9000 specimens mounted on 3200 slides was given in a report submitted to the Thai Government (BÄNZIGER, 1984). In the present study, 111 species are listed, 103 of which are from host plant associations not previously mentioned by BÄNZIGER (1980 a). Of the 103 aphid species, an astonishingly high proportion, viz. 66, are reported for the first time in Thailand, and a few are new to science. Thus, after a second long term survey, with over half the species being found new to the country, the aphid fauna of Thailand can still be said to be incompletely known.

If all previous and present results are considered, the overall number of aphids so far known in Thailand amounts to about 160. However, roughly one-fourth of these could not yet be identified to species level, for several reasons. Many are certainly new species but to be sure of this more research is needed before they can be described without danger of creating further synonyms. Also, most belong, or are closely related, to difficult, only recently established and as yet poorly known genera and species; the type material necessary for comparison is scattered and not easily accessible.

Unless a collector is specifically mentioned, all the material in this report was found by the author. The specimens are deposited at the Collection of the Department of Entomology, Faculty of Agriculture, Chiang Mai University (DEFACU).

The more difficult aphids were identified by the author during three visits to the British Museum (Nat. Hist.), London, with the invaluable help of the specialists there. The nomenclature used is that of EASTOP & HILLE RIS LAMBERS (1976) for the aphids and SMITINAND (1980) for the plants.

Collecting Sites

The more frequently visited collecting sites are listed below with the respective abbreviations. All places are from Chiang Mai Province, N. Thailand, unless otherwise mentioned.

- a. Chiang Mai Township area, 310 m.
- b. Khonthatharn Waterfall area, half way up Doi Suthep, 600-1000 m.
- c. Sangwal area, above Doi Suthep temple, 1100-1400 m.
- d. Doi Khun Chang Khian area on Doi Suthep, 1200-1400 m.
- e. Summit area of Doi Suthep/Pui, 1500-1685 m.

- f. Doi Chiang Dao, NW Pass area, 1100-1500 m.
- g. Doi Angkhang Agric. Exp. Sta. and neighbourhood, 1450-1800 m.
- h. Fang Agric. Exp. Sta., 480 m.
- i. Doi Inthanon, Khun Klang area, about 1300 m.

Classified List of Aphids with Host Plants, Distribution and Collecting Dates*

APHIDIDAE

APHIDINAE

Macrosiphini

1. *Acyrtosiphon* sp.

On Leguminosae: *Lespedeza parviflora* Kurz, c. 1400 m, 27.ii.83. The species is near but certainly different from *A. kondoi* Shinji, and probably represents a new species. However, so far only apterae were found. New Thai record.

2. *Acyrtosiphon* sp.

YPT, Mae Jo, 22.iii.83. Only one alata caught. Mentioned as a new Thai record in Bänziger and Hengsawad (1985).

3. *Aulacorthum circumflexum* (Buckton)

On Pinaceae: *Pinus kesiya* Royle ex Gordon. Mae Jo, 17.ii.82.

4. *Brachycaudus helichrysi* (Kaltenbach)

On Compositae: *Chrysanthemum* sp., Samoeng, 3.ii.84; *Dahlia* sp., Thung Jo, 27.i.82; *Eupatorium odoratum* L., h, 2.iii.79. *Inula cappa* DC., c, 30.i.83; *Blumeopsis falcata* Merr., Om Koi, 22.xii.79; *Senecio nagensium* C.B. Clarke, d, 1400 m, 22.i.83. The species from the latter may be a different subspecies or species as it has more slender siphunculi and ultimate rostral segment.

5. *Brevicoryne brassicae* (L.)

On Cruciferae: *Brassica oleracea* L., collected for the first time by Sirintip Wongdao at Ban Luang near g, 15.i.85 before being found also by the author on radish (*Raphanus sativus* L.) at f, 1320 m, 31.i.85. New Thai record.

6. *Capitophorus formosartemisiae* (Takahashi)

On Compositae: *Artemisia vulgaris* L., f, 1250 m, 3.iii.83; 1350 m, 6.ii.83; Doi Chiang Dao, 1830 m, 7.iv.80; g, 1450 m, 16.vi.84. New Thai record.

7. *Capitophorus* sp.

On Compositae: *Vernonia divergens* Edgew., f, 1150 m, 6.ii.83. The species is near but certainly different from *C. elaeagni* (del Guercio). Possibly a new species. New Thai record.

* YPT = Yellow pan trap capture; i-xii = months of the year; a-i = code of collecting sites.

8. *Cavariella araliae* Takahashi

On Araliaceae: *Aralia montana* Bl., c, 1330 m, 7.x.84. New Thai record.

9. *Cavariella salicicola* (Matsumura)

On Salicaceae: *Salix tetrasperma* Roxb. Taad Mook Waterfall, 550 m, 6.iii.83. New Thai record.

10. *Coloradoa artemisiae* (del Guercio)

On Compositae: *Artemisia vulgaris* L., f, 1350 m, 6.ii.83; i, 23.viii.80. New Thai record.

11. *Cryptosiphum artemisiae* Buckton

On Compositae: *Artemisia vulgaris* L., f, 1150 m, 6.ii.83; i, 23.viii.80. New Thai record.

12. *Hyperomyzus carduellinus* (Theobald)

On Compositae: *Sonchus arvensis* L., Thung Jo, 27.i.81; Ban Mae Tho, 1200 m, 29.x.82; g, 1450 m, 17.vii.84. New Thai record.

13. *Indomegoura* sp.

On unidentified tree, e, 1575 m, 22.x.79. Only one alata caught. New Thai record.

14. *Juncomyzus hillerislambersi* Calilung

On Cyperaceae: *Cyperus alternifolius* L., c, 1100 m, 8.ii.82; 1140 m, 14.ii.82; b, 650 m, 18.iv.79; Mae Nang Kaeo, 1000 m, 14.iv.79; h, 2.iii.79. This species, found on *Scleria scrobiculata* Nees et Mey. ex Nees, was mentioned as *J.* sp. near *obscurus* Hille Ris Lambers in Bänziger (1980a) but Calilung (*in litt.*) confirmed that the species belongs to *hillerislambersi*.

15. *Macrosiphoniella oblonga* (Mordvilko)

On Compositae: *Artemisia vulgaris* L., g, 1450 m, 16.vi.84, 17.vii.84. New Thai record.

16. *Macrosiphoniella* sp.

On Compositae: *Artemisia vulgaris* L., i, 23.viii.80, 5.viii.82; Ban Mae Tho, 1200 m, 29.x.82. The species is near but probably a different species from *M. yomogifoliae* (Shinji). New Thai record.

17. *Macrosiphoniella* sp.

On Compositae: *Artemisia vulgaris* L., f, 1150 m, 3.iii.83. Probably a new species, certainly different from the above. New Thai record.

18. *Macrosiphum* probably *aulacorthoides* David, Narayan & Rajasingh

On Labiatae: *Elsholtzia winitiana* Craib and *Isodon ternifolius* Kudo, e, 1600 m, 1.ii.80, 15.ii.80, 10.iv.80, 14.ii.82. New Thai record.

19. *Matsumuraja rubifoliae* Takahashi

On Rosaceae: *Rubus niveus* Thunb., f, 1350 m, 30.x.83. New Thai record.

20. *Megoura* probably *lespedezae* (Essig & Kuwana)

On Leguminosae: *Lespedeza parviflora* Kurz, c, 1120 m, 8.ii.82; 1170 m, 26.xii.82; 1220 m, 14.ii.82; 1300 m, 26.xii.82; 1450 m, 11. and 26.xii.82. New Thai record.

21. *Megoura* probably *pallipes* A. N. Basu

On Leguminosae: *Indigofera dosua* Buch. - Ham. ex D. Don, c, 1420 m, 31. vii. 83; e, 1600 m, 15.ii.80 and 17.iii.81. New Thai record.

22. *Myzus persicae* (Sulzer)

On Compositae: *Helianthus annuus* L., a, 24.i.83; *Inula cappa* DC., Doi Suthep, southern slopes, 630 m, 18.x.79; Cruciferae: *Brassica chinensis* Jusl. and *Raphanus sativus* L., Doi Chiang Dao, 2050 m, 6.ii.83; Leguminosae: *Vicia faba* (L.), Doi Khun Wang, 1300 m, 16.i.83, Jiraphand Chantararat leg.; Papaveraceae: *Papaver somniferum* L. Mae Sa Mai, 1000 m, 26.i.79; Doi Chiang Dao, 1250 and 2050 m, 3.iii. and 6.ii.83, respectively; Rosaceae: *Prunus mume* Sieb. et Zucc., Doi Sam Mün, 21.iv.84, Mrs. Jariya Visitpanich leg; Umbelliferae: *Coriandrum sativum* L., c, 1300 m, 22.i.83.

So far only one single aptera was found on *Prunus* (*P. mume*, the Japanese Apricot). In cold climates the Prunoidea are the primary hosts of *M. persicae* (Eastop, 1966) while in Thailand, so far and with the above exception, this aphid has never been found on this plant group.

23. *Myzus* or more probably *Amphorophora* sp.

One YPT capture, Pa Kia, 1500 m, 26.xi.84 J. Visitpanich leg. New Thai record.

24. *Neomasonaphis* probably *inulae* (A.K. Ghosh & Ray Chaudhuri)

On Compositae: *Inula cappa* DC., e, 1500 m, 1595 m, 1650 m, 23.x.79; 1450 m, 10.ii.80; f, 1200 m, 18.x.81. New Thai record.

25. *Pentalonia nigronervosa* Coquerel

On Araceae: *Dieffenbachia* sp. a, 21.i.82, Saroj Limpatikul leg.

26. *Pleotrichophorus* sp.

On Compositae: *Artemisia vulgaris* L., i, 11.v.80. New Thai record.

27. *Semiaphis heraclei* (Takahashi)

On Umbelliferae: *Apium graveolens* L., a, 6.iii.81, J. Visitpanich leg.

28. *Shinjia orientalis* (Mordvilko)

On Dennstaedtiaceae (Filices): *Pteridium aquilinum* Kuhn, e, 1585 m, 15.ii. and 16.viii.82. New Thai record.

29. *Sinomegoura citricola* (van der Goot)

On Euphorbiaceae: *Macaranga* sp. near *kurzii* Pax & Hoffm. f., c, 1150 m, 4.i.83.

30. *Sitobion smilacifoliae* (Takahashi)

On Smilacaceae: *Smilax corbularia* Kunth, *S. luzonensis* Presl, *S. perfoliata* Lour., *S. verticalis* Gagnep. Doi Chiang Dao, 1520 m, 10.xii.79; b, 22.i.83; c, 1140 - 1480 m, 17.iii.81; 29.vi.80, 12.viii.80, etc. New Thai record.

31. *Sitobion avenae-miscanthi* species complex

On Gramineae: *Andropogon ascinodis* C.B. Clarke, near Fang, 750 m, 10.i.80; Doi Chiang Dao, 1000 m, 5.xii.82; *Heteropogon triticeus* Beauv., *Imperata cylindrica* Beauv., h, 10.i.80; *Hordeum vulgare* L., h, 2.iii.79 and 13.ii.80; *Microstegium ciliatum* A. Camus, b, 1.i.80; h, 10.i.80; *Setaria palmifolia* Stapf, c, 1320 m, 6.xii.82; *Setaria geniculata* P. Beauv., c, 1450 m, 30.i.83; *Pseudopogonatherum contortum* A. Camus, Om Koi, 1100 m, 22.xii.79; *Triticum* sp. h, 2.iii.79 and 13.ii.80; Chiang Rai 15.i.80.

The complex appears in green as well as in brown forms. Despite all efforts, including help from the specialists at the British Museum, biochemical analysis

with thin layer chromatography (Bänziger, 1984), rearing methods (Limpatikul, 1984) it has not yet been possible to decide whether this important species is *S. miscanthi* (Takahashi), *S. avenae* (F.), or a mixture of both. The species from S., S.E. and E. Asia, though, is generally referred to as *S. miscanthi*. With the increasing spread of temperate cereal growing, such as wheat, barley, oat, in the hills this aphid species may become an important pest. It already is the main aphid species on these cereals in Fang and other areas in N. Thailand.

32. *Sitobion* sp.

On Menispermaceae : *Cyclea atjehensis* Forman, b, 700 m, 1.i.80; *C. barbata* Miers, c, 1240 m, 29.vi.80; *C. varians* Craib, b, 7.i.78; *Stephania brevipes* Craib, c, 1300 m, 14.ii.82, 19.xi.80; *S.elegans* Hook.f. & Thoms. c, 1300 m, 14.ii.82, 19.xi.80; d, 1200 m, 27.ix.81; Doi Chiang Dao, 1610 m, 2100 m, 29.xi.83; *S. japonica* (Bl.) Spreng. c, 1050 m, 8.xi.79; Doi Saket, approx. 500 m, 24.xi.79; *Stephania* sp. 15 (close to *glabra*), Pa Pă, 660 m, 30.vi.79. The species is close to both *S.avenae-miscanthi* complex and *S. smilacifoliae*. However, rearing on gramineous and *Smilax* plant species (hosts of the above two aphid species) were unsuccessful. This and small morphological differences, e.g. a more slender ultimate rostral segment, indicate that this species is most probably different from the above, and undescribed. New Thai record.

33. *Sitobion* sp.

On Zingiberaceae: *Alpinia bracteata* Roxb., c, 1300 m, 19.xi.80. The species is close to the above. New Thai record.

34. *Sitobion* sp.

On Commelinaceae : *Murdannia nudiflora* (L.) Brenan, c, 1410 m, 31.vii.83. The species is close to, but quite different from *S. avenae-miscanthi* complex. New Thai record.

35. *Sitobion* or possibly *Micromyzus* sp.

On Polypodiaceae (Filices) : *Platyserium* sp., collected by Miss Sivilai Sirimungkararat near Khon Kaen, Feb. 1984. New Thai record. The 3 damaged apterae do not allow certain identification.

36. *Sitobion* sp.

In YPT. One single specimen caught at Pa Kia, 1500 m, 24.xii.84, J. Visitpanich leg. New Thai record.

37. *Tuberocephalus sasaki* (Matsumura)

On Compositae : *Artemisia vulgaris* L., f, 1350 m, 6.ii.83. New Thai record.

38. *Uroleucon acutirostre* Bänziger

On Compositae : *Cynara scolymus* L., Khun Wang, Apr.84, S. Wongdao leg.; *Vicoa indica* DC., Doi Inthanon, 1100 m, 12.i.84. The species was first collected from *Inula cappa* DC., mentioned and then described by Bänziger (1980 a, b). More recently also found at Pha Lad (Doi Suthep), 700 m, 30.i.81, 13.xii.83; e, 1430 m, 31.vii.83; 1590 m, 16.viii.80, 23.x.79; 1645 m, 23.x.79; Doi Chiang Dao, 1100 m, 21.x.79, 22.xi.80.

39. *Uroleucon formosanum* (Takahashi)

On Compositae : *Lactuca alatipes* Coll. et Hemsl., c, 1250 m, 27.ii.83; 1300 m, 7.iii.82, 6.xii.82, 26.xii.82; 1480 m, 15.i.83, 30.i.83. Also found by S. Wongdao on *Lactuca sativa* L., Nong Hoi, 1000 m, 15.xii.84. New Thai record.

40. *Uroleucon orientale* (van der Goot)

On Compositae : *Camchaya eberhardtii* (Gagnep.), c, 1450 m, 31.vii.83; *Lactuca alatipes* Coll. et Hemsl., c, 30.i.80; *Inula cappa* DC., c, 1450 m, 31.vii.83, 26.xii.82; *Vernonia clivorum* Hance, c, 1370 m, 27.ii.83; 1480 m, 30.i.83; *V. divergens* Edgew., f, 1100 m, 3.iii.83; 1150 m, 6.ii.83; *V. parishii* Hook. f., c, 1250 m, 29.vi.80, 20.vii.80, 12.viii.80; 1450 m, 31.vii.83; *V. pierrei* Gagnep., Doi Chiang Dao, 750 m, 21.xii.83. New Thai record.

Aphidini**41. *Aphis citricola* van der Goot**

On Compositae : *Anaphalis margaritacea* Benth., e, 1640 m, 23.x.79; *Dahlia* sp., Sankamphaeng, 14.i.80, Prachaval Sukumalanan leg.; a, 16.i.81.; *Vernonia clivorum* Hance, f, 1000 m, 5.xii.82; *Vicoa cernua* Dalz. et Gibs., f, 1000 m, 5.xii.82. Convolvulaceae : *Aniseia martinicensis* Choisy. Moraceae: *Ficus* sp., Om Koi, 800 m, 22.xii.79. Rosaceae: *Prunus mume* Sieb. et Zucc., Huay Nam Ru, Doi Sam Mün, 21.iv.84, J. Visitpanich leg.; *Pyrus lindleyi* Rehd., Kae Noi, 21.vi.84, S. Wongdao leg. Rutaceae: *Glycosmis pentaphylla* Corr., c, 1030 m, 18.xi.79. Sapindaceae: *Litchi chinensis* Sonn., Fang, 590 m, 13.xii.79. Umbelliferae: *Apium graveolens* L., a, 6.iii.81. J. Visitpanich leg.; *Coriandrum sativum* L., c, 1300 m, 22.i.83.

42. *Aphis craccivora* Koch

On Leguminosae: *Caesalpinia pulcherrima* Sw. and *Crotalaria pallida* Ait., Sankamphaeng, 600 m, 15.iv.79; *C. brevipes* (Craib) Hin Linshi, a, 19.vi.79; *Glycine max* Merr., Mae Jo, xii. 82; *Vicia faba* L., Doi Khun Wang, 1300 m, 16.i.83, J. Chantararat leg.; *Vigna sesquipedalis* Fruw. Lythraceae: *Lagerstroemia loudonii* Tejasm. et Binn., a, 20.iii.84.

43. *Aphis eugeniae* van der Goot

On Lythraceae : *Lagerstroemia loudonii* Tejasm. et Binn., a, 20.iii.84. Rosaceae: *Pyrus* sp., Fang, 13.vii.79.

44. *Aphis farinosa* Gmelin

On Salicaceae : *Salix tetrasperma* Roxb., Taad Mook Waterfall, 550 m, 6.iii.83.

45. *Aphis forbesi* Weed

On Rosaceae : *Fragaria* sp., c, 1100 m, 21.i. and 27.ii.83. New Thai record.

46. *Aphis glycines* Matsumura

On Leguminosae : *Cajanus cajan* Millsp., Fang, 2.iii.79.

47. *Aphis gossypii* Glover

On Compositae : *Crassocephalum crepidioides* S. Moore and *Tridax procumbens* L., a, 1.ii.83. Cucurbitaceae : *Coccinia grandis* Voigt, a, 20.i.83, J. Visitpanich leg.; *Cucurbita pepo* L., Inthanon, 17.i.85, S. Wongdao leg. Euphorbiaceae: *Breynia*

vitis-idaea Fischer, Chiang Rai, 15.xii.79. Leguminosae: *Moghania semialata* Mukerjee, c, 1290 m, 13.i.80. Lythraceae: *Lagerstroemia loudonii* Tejasm. et Binn., a, 20.iii.84. Melastomataceae: *Osbeckia* sp., Sankamphaeng, 600 m, 15.iv.79. Menispermaceae: *Stephania japonica* (Bl.) Spreng., a, iii.84. Umbelliferae: *Coriandrum sativum* L., a, 30.iii.84, J. Visitpanich leg. Verbenaceae: *Clerodendrum viscosum* Vent., Sankamphaeng, 600 m, 15.iv.79; *C. serratum* (Moon) Spreng., c, 1450 m, 31.vii.83.

48. *Aphis kurosawai* Takahashi

On Compositae : *Artemisia vulgaris* L., f, 1200 m, 10.vi. and 4.vii.84. New Thai record.

49. *Aphis longisetosa* A. N. Basu

On Rosaceae : *Rubus ellipticus* Smith, c, 1300 m, 14.ix.80, Mae Nang Kaeo, 1000 m, 18.i.81; Ang Khang, 1450 m, 7.i.84.

50. *Aphis nerii* Boyer de Fonscolombe

On Asclepiadaceae : *Dregea volubilis* Stapf, a, 11.vi.79; *Hoya parasitica* Wall., a, 29.iii.81.

51. *Aphis* sp.

On Compositae : *Inula cappa* DC., b, 10.i.82, c, 1370 m, 15.i.83. The species has a very short siphunculus. New Thai record.

52. *Aphis* sp.

On Urticaceae : *Debregeasia velutina* Gaud., c, 1300 m, 22.i.83. The species matches with none present at the British Museum. New Thai record and possibly an undescribed species.

53. *Hyalopterus pruni* (Geoffroy)

On Rosaceae : *Prunus persica* Batsch, f, 1100 m, 27.iii.84. Gramineae: *Phragmites karka* Trin. ex Steud., Fang, 2.iii.79.

54. *Hysteroneura setariae* (Thomas)

On Gramineae : *Hordeum vulgare* L., Mae Hia, 11.iii.81; h, 5.iii.81; *Pseudopogonatherum contortum* A. Camus, Om Koi, 22.xii.79; *Setaria geniculata* P. Beauv., e, 1530 m, 30.i.83; *Themeda triandra* Forsk., b, 10.i.82.

55. *Rhopalosiphum maidis* (Fitch)

On Gramineae : *Triticum* sp., h, 8.i.84.

56. *Rhopalosiphum padi* (L.)

On Gramineae : *Zea mays* L., Mae Suai, 15.xii.79. The species was unknown in Thailand when Bänziger (1977, 1980a) reported it for the first time on *Canna indica* L., *Avena sativa* L., *Hordeum vulgare* L., and *Triticum* sp. It has since become quite common on cereals and may play an important role as pest of these crops.

57. *Rhopalosiphum rufiabdominalis* (Sasaki)

On Gramineae : *Saccharum officinarum* L., *Triticum* sp., Mae Suai, 22.xi.79. On Rosaceae : *Prunus mume* Sieb. et Zucc., Huay Nam Ru, Doi Sam Müm, 21.iv.84. Spring form has 6 instead of the usual 5 antennal segments.

58. (deleted in proof)

59. *Schizaphis hypersiphonata* A.N. Basu

On Gramineae : *Hordeum vulgare* L., Mae Hia, 11.iii.81.

60. *Toxoptera aurantii* (Boyer de Fonscolombe)

On Apocynaceae : *Trachelospermum siamense* Craib, b, 650 m, 18.iv.79. Bigno-
niaceae : *Mayodendron* sp., b, 650 m, 18.iv.79. Caricaceae : *Carica papaya* L., a,
9.ii.83, P. Sukumalanan leg. Leguminosae : *Mimosa* sp., d, 1200 m, 27.ix.81.
Moraceae: *Artocarpus heterophyllus* Lamk., h, 2.iii.79; c, 1290 m, 13.i.80. Theaceae:
Camellia chinensis Seem., Mae Nang Kaeo, 1000 m, 18.i.81.

61. *Toxoptera citricidus* (Kirkaldi)

On Rutaceae : *Glycosmis pentaphylla* Corr., c, 1050 m, 8. and 18.xi.79.

62. *Toxoptera odinae* (van der Goot)

On Anacardiaceae : *Rhus javanica* L., Kae Noi, 21.vi.84, S. Wongdao leg. Com-
bretaceae : *Terminalia dafeuillana* Pierre ex Laness, Mae Ya Waterfall, 15.vi.79.

GREENIDEINAE

Setaphidini (Cervaphidini)

63. *Anomalosiphum indigoferae* A.K. Ghosh, M.R. Ghosh & RayChaudhuri

A few specimens caught in YPT, Mae Jo, 9.iii.83. Mentioned as a new Thai record
in Bänziger & Hengsawad (1985).

64. *Cervaphis quercus* Takahashi

On Fagaceae : *Quercus* sp., e, 1610 m, 10.iv.80, 31.i.82.

65. *Cervaphis rappardi* Hille Ris Lambers

On Leguminosae : *Cajanus cajan* (L.) Millsp., h, 2.iii. and 13.vii.79; g, 1450 m,
13.xii.79; YPT, Mae Jo, March 1983. Mentioned as a new Thai record in Bänziger &
Hengsawad (1985).

Greenideini

66. *Allotrichosiphum* sp.

On unidentified tree, e, 1610 m, 15.ii.80. New Thai record.

67. *Eutrichosiphum davidii* RayChaudhuri

On Leguminosae : *Cajanus cajan* (L.) Millsp., g, 1500 m, 13.xii.79. New Thai record.

68. *Eutrichosiphum* sp. 1

On Styracaceae: *Styrax* sp., c, 1050 m, 18.xi.79. New Thai record.

69. *Eutrichosiphum* sp. 2

On Fagaceae : *Lithocarpus garrettianus* A. Camus, c, 1300 m, 18.ix.77. New Thai
record.

70. *Eutrichosiphum* sp. 3

On Fagaceae : *Lithocarpus* sp., 1100 m, 15.x. and 18.ix.77. New Thai record.

71. *Eutrichosiphum* sp. 4

On Fagaceae: probably *Lithocarpus* sp., e, 1575 m, 21.x.79; 9. and 15.ii., 10.iv.80;
17.iii.81; 31.i.82. New Thai record.

72. *Eutrichosiphum* sp. 5

On Fagaceae: *Quercus* sp., f, 1150 m, 7.iv.80. New Thai record.

73. *Eutrichosiphum* sp. 6

On Fagaceae: *Quercus* sp., e, 1610 m, 31.i.82. New Thai record.

74. *Eutrichosiphum* sp. 7

On Ebenaceae: *Diospyros variegata* Kurz, Mae Sod (Pha Wo Limestone Cliffs), 750 m, 27.x.79. New Thai record.

75. *Eutrichosiphum* sp. 8

On unidentified tree, c, 1290 m, 26.i.80. New Thai record.

76. *Greenidea* (*Trichosiphum*) sp. near *formosana* (Maki)

Myrtaceae: *Psidium guajava* L., a, h, 17.ii.82; 2.iii.79; c, 1030 m, 8.xi. and 18.xi. (1980a) 79; *Tristania rufescens* Hance, Hang Dong, 630 m, 18.ii.79. The species is close to *G. formosana* (Maki), also mentioned from *Mesua ferrea* L. (Guttiferae) in Bänziger (1980a).

77. *Greenidea* (*Trichosiphum*) sp. 3

Myrtaceae: *Eugenia* sp., c, 1450 m, 26.xii.82. New Thai record.

78. *Greenidea* (*Trichosiphum*) sp. 4

Myrtaceae: *Eugenia* sp., Mae Nang Kaeo, 1000 m, 14.iv.79. New Thai record.

79. *Greenidea* (*Trichosiphum*) sp. 5

On Moraceae: *Ficus fistulosa* Reinw. and *Ficus* sp., Doi Chiang Dao, 1000 m, 18.x.81. New Thai record.

80. *Greenidea* (*Trichosiphum*) sp. 6

On Burseraceae: *Canarium* sp., c, 1380 m, 31.vii.83. The species is close to *G. sinensis* RayChaudhuri, also mentioned from *Litchi chinensis* Sonn. (Bänziger, 1980a)

81. *Greenidea* (*Trichosiphum*) sp. 9

On Euphorbiaceae: *Trigonostemon thyrsoides* Stapf, b, 650 m, 18.iv.79. New Thai record.

82. *Greenidea* (*Trichosiphum*) sp. 10

On Ulmaceae: *Ulmus lancifolia* Roxb., Doi Chiang Dao, 1500 m, 3.iii.83; e, 1610 m, 15.ii.80. New Thai record.

83. *Greenidea* (*Trichosiphum*) sp. 11

On Betulaceae: *Betula alnoides* Buch.- Ham., e, 1610 m, 14.ii.82. New Thai record.

84. *Greenidea* (*Trichosiphum*) sp. 13

On Fagaceae: *Quercus* sp., e, 1575 m, 31.i.82. New Thai record. Several further Greenideini from various trees have not yet been identified.

85. *Greenideoida ceyloniae* van der Goot

On Menispermaceae: *Cyclea barbata* Miers, b, 27.ii.77. This would seem to be a very unusual host plant but, although the alate specimen may well have been a stray, there were also a number of alatoids present, indicating that the species can evidently develop on this host. The usual host is *Mesua ferrea* L. (Guttiferae) on which it was found also in Thailand (Pholboon, 1965; Bänziger, 1980a)

86. *Mollitrichosiphum tenuicorpus* Okajima

On Fagaceae : *Castanopsis* sp., c, 1180 m, 29.vi.80; 1345 m, 10.xii.80; e, 1660 m, 10.iv.80; *Lithocarpus* sp., e, 1575 m, 21.x. and 8.xi.79, 9.ii.80; Doi Chiang Dao, 650 m, 19.vii.78.

87. *Mollitrichosiphum* sp.

On unidentified tree, possibly a Fagaceae, f, 1100 m, 4.vii.84. New Thai record.

DREPANOSIPHINAE (CALLIPTERINAE)

88. *Betacallis prunicola* R.C. Basu, A.K. Ghosh & Ray Chaudhuri

On Betulaceae : *Betula alnoides* Buch.- Ham., e, 1610 m, 27.ix. and 25.xii.81, 31.i.82. New Thai record.

89. *Betacallis querciphaga* R.C. Basu, M.R. Ghosh & Ray Chaudhuri

On Betulaceae : *Betula alnoides* Buch.- Ham., e, 27.ix. and 25.xii.81, 31.i. and 14.ii.82. This and the above species were found on the very same tree. New Thai record.

90. *Chlethrobius* sp.

On Betulaceae : *Betula alnoides* Buch.- Ham., e, 27.ix.81; 31.i. and 24.ii.82. This is an undescribed species. New Thai record.

91. *Tinocallis himalayensis* A.K. Ghosh, M.R. Ghosh & Ray Chaudhuri

A few YPT captures, 25.i.83, and one on *Malus pumila* Mill (Rosaceae), h, 14.i.77, most probably a stray.

92. *Sarucallis kahawaluokalani* (Kirkaldy)

One YPT capture, 29.iii.83. Mentioned in Bänziger & Hengsawad (1985) as a new Thai record. This aphid was mentioned in Robinson's (1972 a) list of Thai aphids but it later turned out to be a new species, subsequently described as *T. khonkaensis* Danielsson & Robinson (1978).

93. *Tinocallis* sp.

On Ulmaceae : *Ulmus lancifolia* Roxb., e, 1600 m, 15.ii.80, 17.iii.81, 14.ii.82. New Thai record.

Several further Callipterinae have not yet been identified.

CHAITOPHORINAE

94. *Chaitophorus pakistanicus* Hille Ris Lambers

On Salicaceae : *Salix tetrasperma* Roxb., Taad Mook Waterfall, 550 m, 6.iii.83. New Thai record.

LACHNINAE

95. *Aiceona* sp.

On Lauraceae : *Phoebe* sp., c, 1330 m, 4.v.80. Possibly a new species. New Thai record.

96. *Aiceona* sp.

On Lauraceae : *Litsea* sp., c, 1140 m, 14.ii.82. New Thai record.

97. *Cinara (Cinarella) formosana* (Takahashi)

On Pinaceae : *Pinus kesiya* Royle ex Gordon, e, 1610 m, 14.ii.82. New Thai record.

98. *Lachnus (Schizodryobius)* sp.

On Fagaceae : unidentified tree, c, 1180 m, 29.vi.80. New Thai record. A few further Lachninae have not yet been identified.

PHYLLOXERIDAE

99. *Aphanostigma piri* (Cholodkovsky)

On Rosaceae : *Pyrus lindleyi* Rehd., g, July 1984, collected by Dr. R. Black and identified by J.H. Martin, British Museum (Nat. Hist.), London. According to him the species has been recorded in several countries in Europe, and Israel, but not yet in S.E. Asia.

PEMPHIGIDAE

100. *Cerataphis* sp.

On Smilacaceae : *Smilax verticalis* Gagnep., c, 1300 m, 12.viii.80. New Thai record.

101. *Formosaphis micheliae* Takahashi

On Magnoliaceae : *Michelia alba* DC., a, 350 m, 17.ii.82. It was Mr. P. Sukumalanan who draw my attention to this aphid. New Thai record.

102. *Pseudoregma sundanica* (van der Goot)

On Zingiberaceae : *Alpinia bracteata* Roxb., c, 1300 m, 4.v.80, 8.iii.81. New Thai record.

103. *Tetraneura nigriabdominalis* (Sasaki)

On Gramineae : *Oryza sativa* L., Mae Hia, 350 m, 19.x.83, brought to me by Dr. V. Hengsawad.

Several further species of Pemphigidae from Fagaceae, Gramineae, Theaceae. etc., have not yet been identified.

Aphid Species Found on the Same Hosts as in the Previous Survey (1974-1977, Bänziger, 1980a)

Aphis longisetosa A. N. Basu, *Capitophorus hippophaes* (Walker), *Ceratovacuna lanigera* Zehntner, *Lipaphis erysimi* (Kaltenbach), *Macrosiphoniella sanborni* (Gillette), *Melanaphis sacchari* (Zehntner), *Rhodobium porosum* (Sanderson), *Schoutedenia lutea* (van der Goot).

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Figure 1. *Rhopalosiphum padi* L. on wheat (*Triticum* sp.), an aphid only recently recorded for the first time in N. Thailand, and potentially a new serious pest of cereals in the hills.

Figures 2 & 3. *Uroleucon acutirostre* Bänziger on *Inula cappa* DC., an aphid recently described from Doi Suthep and Doi Chiangdao. Adult wingless female with young



2



3

