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A checklist of the Far East Asian Aphidiidae (Hymenoptera)

Introduction

The increasing significance of aphids as pests in modern agriculture and forestry has widely stimulated the research on their natural enemies as agents in integrated programmes.

The most significant group of the primary parasites of aphids represent the Aphidiidae. The analysis of the world fauna (STARÝ 1970) has indicated the basic importance of the Far East in this respect, besides the West Palearctics and the Nearctics; the southern hemisphere exhibits promissive indications with respect to the parasite phylogeny, but the fauna represents a mixture of widely distributed species and less numerous (as far as known) endemics.

The history of the research on aphid parasites shows the usual picture: Europe and North America have been studied mostly independently and practically only in the up-to-date period the specialists have started to compare the faunas with corresponding results in the taxonomy of the group. However, it seems that we have been at the initial stage yet. The increasing amount of information has shown that a relatively rich exchange have occurred between Europe and the Nearctics, and the Far East and the Nearctics, respectively. This state will require a careful revision of the corresponding faunas and their comparison, but this needs the same basic classification of the taxons.

The Far East Asia has a very unfortunate history in this respect as several very important papers have recently been published, however — prevalently independent on each other. The brief summary is as follows:

STARÝ & SCHLINGER (1967): a comprehensive paper on the Far East Asian Aphidiidae. The new taxons (but not the other information) were included in the World Index by MACKAUER & STARÝ (1967).

MACKAUER's (1968) World Catalogue: the paper of STARÝ & SCHLINGER (1967) and a part of TAKADA's (l.c.) papers (but not his general revision of the Japanese Aphidiidae of 1968) were included and some changes were made.

TAKADA's (1968) revision of the Japanese Aphidiidae: neither MACKAUER & STARÝ (1967) and MACKAUER (1968), nor STARÝ & SCHLINGER (1967) were included; there is a small preliminary note on some taxons described by STARÝ & SCHLINGER (1967).

The papers from Taiwan (CHIU, LIU, TAO l.c.): the authors partially followed the aforementioned papers, and described or re-described some species. However, some of their comparisons were based on the descriptions only and this caused some misunderstandings in some cases.

Thus, the situation has resulted in a state that exhibits both positive (A) and negative (B) features:

A) 1. A considerable amount of information on the Far East Asian Aphidiidae has been obtained.

2. A comparison of the two aforementioned papers (STARÝ & SCHLINGER; TAKADA) has shown that they overlap to a relatively very small extent. This documents the richness and simultaneously a relatively very poor knowledge of the Far East Asian parasite fauna and the necessity of its further research.

B) 1. Some new classification of the aforementioned two papers have been published in the world reviews of the parasite fauna, to a lesser degree in a series of smaller contributions.

2. Besides that some other important papers have been published (Taiwan).

3. The world research on aphid parasites since 1967, 1968 has shown new aspects on the parasite classification, their distribution, host range, etc.

4. The classification of the European and Far Eastern faunas have been sometimes based on unclear descriptions or peculiar characters and this has resulted in some mistakes and misunderstandings. The same is true for the Nearctics.

Thus, the situation could be briefly characterized as follows: although the research on aphid parasite fauna of the Far East Asia has become almost explosive in 1967–1973, the situation has become very unclear except perhaps a few well-informed specialists. It is the aim of the present checklist to summarize and sometimes even discuss our knowledge; however, in a number of unclear cases we have preferred just to show the existing problems as an indication for a further taxonomical research.

Checklist of Genera and Species

Information:

Only the synonymy pertaining the Far East Asian area is mentioned, except for a few necessary cases to explain the situation.

As the author has kept the MACKAUER's system used in MACKAUER & STARY (1967) and MACKAUER (1968) to be artificial and not representing the natural groups among the aphidiids, the particular genera and species were listed alphabetically.

All the other information pertaining the particular genera and species can be obtained in the references mentioned in MACKAUER & STARY (1967), STARY & SCHLINGER (1967), TAO & CHIU (1971), TAKADA (1968).

The references in the particular species and genera are listed in accordance with the years, the authors per a year being listed in an alphabetical order.

Aphid nomenclature: the following papers have been mostly followed:

HIGUCHI, H. & MIYAZAKI, M. 1969: A tentative catalogue of host plants of Aphidoidea in Japan. *Ins. Mats.*, Suppl. 5: 66 pp.

MIYAZAKI, M. 1971: A revision of the tribe Macrosiphini of Japan (Homoptera: Aphididae, Aphidinae). *Ins. Mats.* 34: 1–247.

TAO, CH. CH. 1961–1970: Aphid fauna of China. *Science Yearb. of Taiwan Mus.*, from Vols. IV–XIII.

WOON HAH PAIK 1965: Aphids of Korea. *Seoul Nat. Univ.*, 160 pp.

Host-Parasite list: The records on parasite species that seem to be erroneous or doubtful in the author's opinion are mentioned in brackets (). However, owing to the "Notes" possibly mentioned in the parasite species in the "Checklist", it is recommendable to compare the information in the "Host-Parasite list" with that in the "Checklist".

References: The author has tried to elaborate a complete bibliography of the Far East Asian Aphidiidae.

Genus: *Aphidius* NEES, 1818

Rfcs.: MACKAUER & STARY 1967, Index: 63–4. STARY & SCHLINGER 1967, Ser. ent. 3: 11 (key 11–2, review of Far East spp. 12–30). MACKAUER 1968, Cat.: 41, 42. TAKADA 1968, *Ins. Mats.* 30: 91–102 (Japan; key 92–3; review 93–102).

Aphidius absinthii MARSHALL, 1896

(in ANDRÉ, *Spec. Hym. Eur. Alg.* 5: 605–6; ♂; England)

Syn.: *Aphidius commodus* GAHAN, 1926, *Proc. U.S. Nat. Mus.* 70 (8): 3–4 (♀, Japan).

Rfcs.: MACKAUER & STARY 1967, Index: 65, 67. STARY & SCHLINGER 1967, Ser. ent. 3: 12–15 (♀, S. Korea, Japan, Hong Kong, Taiwan). MACKAUER 1968, Cat.: 45. TAKADA 1968, *Ins. Mats.* 30: 99–100 (♀, Japan). TAO & CHIU 1971, *Taiwan. Agric. Res. Inst. Taipei, Spec. Publ.* 10: in 12–20.

Hosts:

Macrosiphoniella formosartemisiae TAKAHASHI — STARY & SCHLINGER 1967, S. Korea. GAHAN 1926, Taiwan. TAO & CHIU 1971, Taiwan.

Macrosiphoniella pseudoartemisiae SHINJI — TAKADA 1968, Japan.

Macrosiphoniella sanborni GILLETTE — STARY & SCHLINGER 1967, Japan, S. Korea, Hong Kong.

Macrosiphoniella yomenae SHINJI — TAKADA 1968, Japan, TAO & CHIU 1971, Taiwan.

Macrosiphoniella yomogifoliae SHINJI — STARY & SCHLINGER 1967, Taiwan. TAKADA 1968, Japan. TAO & CHIU 1971, Taiwan.

Note: *Aphidius commodus* is mentioned as a valid species by MACKAUER (1968, p. 45).

Aphidius amamioshimensis TAKADA, 1968

(*Ins. Mats.* 30: 98; ♀♂; Japan)

Host: *Acyrtosiphon nipponicus* ESSIG & KUWANA — TAKADA 1968, Japan.

Note: The differentiation of this species from *Aphidius gifuensis* does not seem to be very convincing. A revision of this species based also on the up-to-date criteria of *Aphidius* (cf. STARY 1973) is recommendable.

***Aphidius aquilus* MACKAUER, 1961**

(Boll. Lab. Ent. Portici 19: 277–9; ♀♂; Netherlands)

Syn.: *Aphidius sicarius* MACKAUER, 1961, Boll. Lab. Ent. Portici 19: 281–2 (♀♂).

Lysaphidius callipterinellae TAKADA, 1966, Ins. Mats. 28: 129–30 (♀♂; Japan).

Rfcs.: MACKAUER & STARÝ 1967, Index: 65, 80. MACKAUER 1968, Cat.: 55. TAKADA 1968, Ins. Mats. 30: 103.

Host: *Callipterinella betularia* KALTENBACH — TAKADA 1966, 1968, Japan.

***Aphidius areolatus* ASHMEAD, 1906**

(Proc. U. S. Nat. Mus. 30: 189–90; ♀♂; Japan)

Rfcs.: WATANABE 1957, Ins. Mats. 21: 2 (notes on the type). MACKAUER & STARÝ 1967, Index: 61. STARÝ & SCHLINGER 1967, Ser. ent. 3: 15–7 (♀♂; Japan). MACKAUER 1968, Cat.: 41. TAKADA 1968, Ins. Mats. 30: 93–4 (♀♂; Japan).

Hosts:

Periphyllus californiensis SHINJI — TAKADA 1968, Japan.

Periphyllus koelreuteriae TAKAHASHI — STARÝ & SCHLINGER 1967, Japan.

Periphyllus testudinaceus FERNIE — STARÝ & SCHLINGER 1967, Japan.

Periphyllus sp. — STARÝ & SCHLINGER 1967, Japan.

(*Aphidius avenae* HALIDAY, 1834)

(Ent. Mag. 2: 99; ♀♂; England)

Rfcs.: WATANABE 1941, Ins. Mats. 15: 168–70 (♀♂; Japan). YASUMATSU 1947, Mushi 17: 113 (Japan). MACKAUER & STARÝ 1967, Index: 66. MACKAUER 1968, Cat.: 44. TAKADA 1968, Ins. Mats. 30: 96–7 (♀♂; Japan).

Hosts:

Macrosiphum (Sitobion) akebiae SHINJI — TAKADA 1968, Japan.

Macrosiphum (Sitobion) avenae FABRICIUS — WATANABE 1941; YASUMATSU 1947; Japan.

Macrosiphum (Sitobion) ibarae MATSUMURA — TAKADA 1968, Japan.

Note: The material identified as “*Aphidius granarius* MARSHALL” or “*Aphidius avenae* HALIDAY” requires a revision. *Aphidius avenae* HALIDAY (= *Aphidius granarius* MARSHALL) has been classified as a synonym of *Aphidius picipes* (NEES). The new criteria used in *Aphidius* (cf. STARÝ 1973) should be followed.

***Aphidius cingulatus* RUTHE, 1859**

(Stettin. ent. Ztg. 20: 315–6; ♀♂; Iceland)

Rfcs.: TAKADA 1968, Ins. Mats. 30: 95 (♀♂; Japan).

Host: *Pterocomma* sp. — TAKADA 1968, Japan.

***Aphidius ervi* HALIDAY, 1834**

(Ent. Mag. 2: 100; ♀♂; England)

Rfcs.: TAKAHASHI 1925, Dept. Agric. Govt. Res. Inst. Taipei, Rept. 16: in 74 pp. GAHAN 1926, Proc. U. S. Nat. Mus. 70 (8): 1. MACKAUER 1968, Cat.: 46–7. TAKADA 1968, Ins. Mats. 30: 96 (♀♂; Japan).

Hosts:

Acyrtosiphon pisum HARRIS — TAKADA 1968, Japan.

Macrosiphum sp. — TAKAHASHI 1925; GAHAN 1926; Taiwan.

***Aphidius funebris* MACKAUER, 1961**

(Boll. Lab. Ent. Portici 19: 279–81; ♀♂; Germany)

Rfcs.: TAKADA 1968, Ins. Mats. 30: 102 (♀; Japan).

Host: *Uroleucon solidaginis* FABRICIUS — TAKADA 1968, Japan.

***Aphidius gifuensis* ASHMEAD, 1906**

(Proc. U. S. Nat. Mus. 30: 188; ♀; Japan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 70. WATANABE 1957, Ins. Mats. 21: 2 (notes on the type). SHIGA 1967, Mushi 41: in 75–89 (Japan). STARÝ & SCHLINGER 1967, Ser. ent. 3: 17–9 (♀♂; S. Korea, Japan, Taiwan). WATANABE & TAKADA 1967, Mushi 40: 84–5 (Japan). MACKAUER 1968, Cat.: 48. SHIGA 1968, Sci. Bull. Fac. Agric. Kyushu Univ. 23: 169–83 (Japan). TAKADA 1968, Ins. Mats. 30: 97–8 (♀♂; Japan). CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: 14 pp. TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12–20, 20–4 (♀♂; Taiwan).

Hosts:

Acyrtosiphon sp. — STARÝ & SCHLINGER 1967, Japan.

Aphis glycines MATSUMURA — TAKADA 1968, Japan.

Aphis gossypii GLOVER — MACKAUER & STARÝ 1967, Far East. TAKADA 1968, Japan.

Aulacorthum solani KALTENBACH — TAKADA 1968, Japan.

Capitophorus sp. — STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU, 1971; Taiwan.

Lappaphis erysimi KALTENBACH — CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Macrosiphum (Sitobion) akebiae SHINJI — MACKAUER & STARÝ 1967, Far East.

Macrosiphum (Sitobion) ibarae MATSUMURA — STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

TAKADA 1968, Japan.

Macrosiphum sp. — STARÝ & SCHLINGER 1967, Japan.

Myzus persicae SULZER — STARÝ & SCHLINGER 1967, S. Korea, Taiwan. TAKADA 1968; WATANABE & TAKADA 1968;

SHIGA 1967; Japan. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Myzus sp. — STARÝ & SCHLINGER 1967, Taiwan.

“aphids” — ASHMEAD 1906; WATANABE 1957; Japan.

Note: We have re-examined most of the material mentioned as “group *gifuensis*” in 1967 (STARÝ & SCHLINGER) on the ground of new specific criteria (cf. STARÝ 1973): the material really represents the single species, *Aphidius gifuensis*. Concerning the host range, the combination *Acyrtosiphon* — *Myzus*, etc. has been found to be common in some widely specific *Aphidius*-species.

***Aphidius longipetiolus* TAKADA, 1968**

(Ins. Mats. 30: 101—2; ♀♂; Japan)

Host: *Macrosiphoniella grandicauda* TAKAHASHI & MORITSU — TAKADA 1968, Japan.

Note: This species, which is mentioned as related to *Aphidius absinthii*, should be dealt with respect to the variation in the number of antennal segments in dependence on host species.

(***Aphidius lonicerae* MARSHALL, 1896**)

(in ANDRÉ, Spec. Hym. Eur. Alg. 5: 572—3; ♀♂; England)

Rfcs.: TAKADA 1968, Ins. Mats. 30: 99 (♀; Japan).

Host: *Amphorophora amurensis* MORDVILKO — TAKADA 1968, Japan.

Note: “*Aphidius lonicerae*” is a synonym of *Aphidius urticae* HALIDAY (cf. STARY 1973). The material should be re-examined. Possibly it could be also identical with some of the Nearctic species (Canada), parasites of this morpho-ecological type of the host (*Masonaphis*, *Amphorophora*, etc.).

***Aphidius macrosiphoniellae* TAKADA, 1968**

(Ins. Mats. 30: 101; ♀♂; Japan)

Hosts:

Macrosiphoniella hikosanensis MORITSU — TAKADA 1968, Japan.

Macrosiphoniella sanborni GILLETTE — TAKADA 1968, Japan.

Macrosiphoniella yomenae SHINJI — TAKADA 1968, Japan.

Note: The distinguishing characters of this species with respect to *Aphidius absinthii* should be further dealt with (variation).

***Aphidius salicis* HALIDAY, 1834**

(Ent. Mag. 2: 102; ♀♂; England)

Rfcs.: MACKAUER & STARY 1967, Index: 79. STARY & SCHLINGER 1967, Ser. ent. 3: 19—22 (♀♂; S. Korea, Japan, Taiwan). MACKAUER 1968, Cat. 55. TAKADA 1968, Ins. Mats. 30: 94—5 (♀♂; Japan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12—20 (Taiwan).

Hosts:

Cavariella araliae TAKAHASHI — STARY & SCHLINGER 1967; TAO & CHIU 1971; Taiwan. TAKADA 1968, Japan.

Cavariella salicicola MATSUMURA — STARY & SCHLINGER 1967, S. Korea. TAKADA 1968, Japan. TAO & CHIU 1971, Taiwan.

Cavariella sp. — STARY & SCHLINGER 1967, Japan.

***Aphidius* spp.**

Rfcs.: GAHAN 1926, Proc. U.S. Nat. Mus. 80 (8): 2. OTAKE 1966, Studies, in 108 pp. STARY & SCHLINGER 1967, Ser. ent. 3: 24—30.

Hosts:

Acyrtosiphon sp. — STARY & SCHLINGER 1967, Japan.

Amphorophora sp. — STARY & SCHLINGER 1967, Japan.

Brevicoryne brassicae LINNAEUS — OTAKE 1966, Japan.

Macrostiphum rosae LINNAEUS — STARY & SCHLINGER 1967, S. Korea.

Macrostiphum (*Sitobion*) *ibarae* MATSUMURA — STARY & SCHLINGER 1967, Taiwan.

Myzus persicae SULZER — OTAKE 1966, Japan.

Rhopalosiphoninus deutzifoliae SHINJI — STARY & SCHLINGER 1967, Japan.

Titanosiphon neocartemisiae TAKAHASHI — GAHAN 1926, Taiwan. Without host data — USSR, Primorye (STARY & SCHLINGER 1967).

Genus: *Archaphidius* STARY & SCHLINGER, 1967

(Ser. ent. 3: 30)

Type-species: *Archaphidius greenideae* STARY & SCHLINGER, 1967.

Rfcs.: MACKAUER & STARY 1967, Index: 36. MACKAUER 1968, Cat.: 30.

***Archaphidius greenideae* STARY & SCHLINGER, 1967**

(Ser. ent. 3: 30—1; ♀; Taiwan)

Rfcs.: MACKAUER & STARY 1967, Index: 36. MACKAUER 1968, Cat.: 31.

Host: *Greenideia ficicola* TAKAHASHI — STARY & SCHLINGER 1967, Taiwan.

Genus: *Areopraon* MACKAUER, 1959

Rfcs.: TAKADA 1968, Ins. Mats. 30: 77 (Japan; key to spp. 77—80; review 78—9).

***Areopraon kurohimense* TAKADA, 1968**

(Ins. Mats. 30: 78—9; ♂; Japan)

Host: Unknown.

***Areopraon nipponicum* TAKADA, 1968**

(Ins. Mats. 30: 78—9; ♀♂; Japan)

Host: Unknown.

(*Areopraon* sp.)

Rfcs.: STARY & SCHLINGER 1967, Ser. ent. 3: 136 (S. Korea).
Host: *Periphyllus* sp. STARY & SCHLINGER 1967, S. Korea.

Note: This record represents a mistake in the Host-Parasite list; there should be apparently "*Praon* sp." instead.

Genus: *Bioxys* STARY & SCHLINGER, 1967

(Ser. ent. 3: 32.)

Type-species: *Bioxys japonicus* STARY & SCHLINGER, 1967.

Rfcs.: MACKAUER & STARY 1967, Index: 97 (synonymy) — MACKAUER 1968, Cat.: 67, 68.

Note: The original differential diagnosis related *Bioxys* to *Trioxys*, especially to species in which there is an indication of a fusion of the paired prongs. However, this is only one explanation as the increase of research on the parasite genera associated especially with the Callaphididae does not exclude the unique median prong to develop irrespectively of the paired prongs as known in *Trioxys*. For this reason, we keep *Bioxys* as a valid genus.

Bioxys japonicus STARY & SCHLINGER, 1967

(Ser. ent. 3: 32—3; ♀♂; Japan)

Syns.: *Trioxys (Trioxys) staryi* MACKAUER, 1968, Cat.: 73 (nom. nov. for *Trioxys japonicus* (STARY & SCHLINGER, 1967) nec TAKADA, 1966), syn. nov.

Trioxys machilaphidis TAKADA, 1968, Ins. Mats. 30: 113 (♀♂; Japan), syn. nov.

Rfcs.: MACKAUER & STARY 1967, Index: 99. MACKAUER 1968, Cat.: 73. TAKADA 1968, Ins. Mats. 30: 122.

Hosts:

Machilaphis machili TAKAHASHI — TAKADA 1968, Japan.

"Callipterine aphids" — STARY & SCHLINGER 1967, Japan.

Note: According to our aforementioned opinion *Bioxys* is classified as a valid genus: consequently, *Bioxys japonicus* must be classified as a valid species and *Trioxys (Trioxys) staryi* MACKAUER and *Trioxys machilaphidis* TAKADA, 1968 fall as its new synonyms.

Genus: *Calaphidius* MACKAUER, 1961

Syn.: *Amonoctonus* TAKADA, 1968, Ins. Mats. 30: 107.

Type-species: *Monoctonus watanabei* TAKADA, 1965.

Rfcs.: MACKAUER & STARY 1967, Index: 60. MACKAUER 1968, Cat.: 66.

Calaphidius watanabei (TAKADA, 1965)

(Kontyu 33: 223—5; ♀♂; Japan)

Rfcs.: MACKAUER & STARY 1967, Index: 61. MACKAUER 1968, Cat.: 66. TAKADA 1968, Ins. Mats. 30: 107—8 (Japan).

Host: *Hormaphis betulina* HORVATH — TAKADA 1965, 1968, Japan.

Note: *Calaphidius watanabei* seems to be closely similar or perhaps identical with *Calaphidius elegans* MACKAUER because of the following reasons:

1. The descriptions of both species could fit quite well to a single one; unfortunately, there are no figures in the MACKAUER's description.

2. *Calaphidius watanabei* is a parasite of *Hormaphis betulina* on *Betula*: the aphid is also distributed in the West-Palearctics. *Calaphidius elegans* was swept on *Betula* as well, but the host has been unknown yet. However, we have found a heavily parasitized colony of *Hormaphis* in Czechoslovakia, but unfortunately only hyperparasites emerged.

3. The analysis of the particular faunistic elements and complexes has shown that most of the species associated with *Betula* (forest-tundra elements) are identical both in the West- and East-Palearctics, and most probably also in the Nearctics: the forest tundra faunistic complex (cf. STARY 1970) seems to be holarctic in distribution.

4. The aforementioned evidence requires naturally some reared European material.

Genus: *Diaeretiella* STARY, 1960

Rfcs.: MACKAUER & STARY 1967, Index: 85. STARY & SCHLINGER 1967, Ser. ent. 3: 33—4 (review of Far East spp., 34—8). MACKAUER 1968, Cat.: 60. TAKADA 1968, Ins. Mats. 30: 102 (Japan; review 102—3).

Diaeretiella rapae (M'INTOSH, 1855)

(Book of the Garden 2: 194; ♀; England)

Syn.: *Diaeretus nipponensis* VIERECK, 1911, Proc. U.S. Nat. Mus. 40: 182 (♀♂; Japan).

Rfcs.: TAKAHASHI 1925, Dept. Agric. Govt. Res. Inst. Formosa, Rept. 16: in 14 pp. GAHAN 1926, Proc. U.S. Nat. Mus. 80 (8): 8 (Taiwan). OTAKE 1966, Studies, in 108 pp. (Japan). MACKAUER & STARY 1967, Index: 85—6. SHIGA 1967, Mushi 41: in 75—89 (Japan). STARY & SCHLINGER 1967, Ser. ent. 3: 34—8 (♀♂; Japan). WATANABE & TAKADA 1967, Mushi 40: 85 (Japan). MACKAUER 1968, Cat.: 60—2. TAKADA 1968, Ins. Mats. 30: 102—3 (Japan). CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: in 14 pp. (Taiwan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12—20, 32 (Taiwan).

Hosts:

Aphis sp. — TAKADA 1968, Japan.
Brevicoryne brassicae LINNAEUS — STARY & SCHLINGER 1967; TAKADA 1968; SHIGA 1967; OTAKE 1966; Japan. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Cavariella salicicola MATSUMURA — TAKADA 1968, Japan.
Greenidea fivicola TAKAHASHI — TAKAHASHI 1925; GAHAN 1926; Taiwan.
Lipaphis erysimi KALTENBACH — TAKAHASHI 1925; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Myzus persicae SULZER — TAKADA 1968; WATANABE & TAKADA 1967; OTAKE 1966; WATANABE & TAKADA 1967, Japan. CHIU & LIU 1969; TAO & CHIU 1971, Taiwan.

Note: The host record "*Cavariella salicicola*" could belong to *Aphidius aquilus* (variation in wing-venation).

Genus: *Diaeretus* FÖRSTER, 1862

Rfcs.: MACKAUER & STARY 1967, Index: 60. STARY & SCHLINGER 1967, Ser. ent. 3: 38 (Far East spp. 38–41). MACKAUER 1968, Cat.: 40. TAKADA 1968, Ins. Mats. 30: 90 (Japan, review 90–91).

Diaeretus leucopterus (HALIDAY, 1834)

(Ent. Mag. 2: 103; ♀♂; England)

Rfcs.: STARY 1965, Acta Faun. ent. Mus. Nat. Pragae 10: in 187–227. MACKAUER & STARY 1967, Index: 60. STARY & SCHLINGER 1967, Ser. ent. 3: 38–41 (♀♂; Japan, S. Korea). MACKAUER 1968, Cat.: 40–1. TAKADA 1968, Ins. Mats. 30: 90–1 (♀♂; Japan).

Host: *Eulachmus thumbergii* WILSON — STARY & SCHLINGER 1967, Japan, S. Korea. TAKADA 1968, Japan.

Genus: *Ephedrus* HALIDAY, 1833

Rfcs.: STARY & SCHLINGER 1967, Ser. ent. 3: 41–2 (Far East, key 42, review 43–62; partim). STARY & SCHLINGER 1967, Ser. ent. 3: 43 (*Ephedrus* s. str.). LIU 1968, J. Taiwan Agric. Res., Taipei 17: 35 (Taiwan, key 36, review 36–48). MACKAUER 1968, Cat.: 9. TAKADA 1968, Ins. Mats. 30: 70 (Japan, key 70, review 71–7).

Note: The classification of some *Ephedrus* species requires the basic revision as misunderstandings in the distinguishing and defining the particular species seem to occur.

1. *Ephedrus cavariellae* TAKADA, *Ephedrus salicicola* TAKADA, *Ephedrus minor* STELFOX. According to our opinion *Ephedrus salicicola* is identical with *Ephedrus minor* as the characters in the original differential diagnosis run in the variation range of *Ephedrus minor*. The distinguishing characters of *Ephedrus cavariellae* and *Ephedrus salicicola* should be dealt with in a more detail, especially with respect to the variation range of characters as demonstrated in larger series from different host species and including both large and small specimens. The originally mentioned dirty yellow coloration of F_1 , F_2 and rarely of the base of F_3 has not been observed to occur in *Ephedrus minor*; however, the mentioned coloration does not seem to be apparent in the original photographs.

The re-examination of our material (see: STARY & SCHLINGER 1967) reared from *Cavariella araliae* and identified as *Ephedrus plagiator* has shown that it resembles more *Ephedrus minor* than *Ephedrus plagiator*.

2. *Ephedrus nacheri* QUILIS, *Ephedrus plagiator* NEES, *Ephedrus robustus* LIU. The misunderstandings that seem to source from the original descriptions and re-descriptions of *Ephedrus plagiator* and *Ephedrus nacheri* indicate the urgent necessity of a more detailed study of these species. — "*Ephedrus nacheri*" was established and re-described from Japan by TAKADA (l.c.); "*Ephedrus nacheri*" was also recorded from Taiwan, but later on it is not mentioned in the list of species, and there seems to be *Ephedrus robustus* instead (cf. TAO, LIU, CHIU, etc., l.c.). — It should be noticed that *Ephedrus plagiator* (= *japonicus* ASHMEAD) and "*Ephedrus nacheri*" of TAKADA exhibit relatively similar host range, whereas the ideas about the host range of *Ephedrus nacheri* in Europe are different.

Ephedrus brevis STELFOX, 1941

(Proc. R. Irish Acad., B, 46: 140–2; ♀♂; Ireland)

Rfcs.: TAKADA 1968, Ins. Mats. 30: 76–7 (♀; Japan).

Host: Unknown.

Ephedrus cavariellae TAKADA, 1968

(Ins. Mats. 30: 71; ♀♂; Japan)

Host: *Cavariella* sp. — TAKADA 1968, Japan.

Note: see above — the genus *Ephedrus*, discussion.

Ephedrus lacertosus (HALIDAY, 1833)

(Ent. Mag. 1: 486; ♀♂; England)

Rfcs.: STARY & SCHLINGER 1967, Ser. ent. 3: 45–7 (♀♂; Taiwan). TAKADA 1968, Ins. Mats. 30: 74–5 (♀♂; Japan). STARY 1970, Boll. Lab. Ent. Portici 25: 237 (Japan).

Hosts:

Impatiens impatiens SHINJI — STARÝ 1970, Japan; note: this record belongs to *Ephedrus trichosiphoniellae* (see STARÝ, in press).

Macromyzus woodwardiae TAKAHASHI — STARÝ & SCHLINGER 1967, Taiwan.

(*Ephedrus nacheri* QUILIS, 1934)

(Eos 10: 17—9; ♀♂; Czechoslovakia)

Rfcs.: WATANABE & TAKADA 1967, Mushi 40: 83 (Japan). LIU 1968, J. Taiwan Agric. Res., Taipei 17: 38 (♀♂; Taiwan). MACKAUER 1968, Cat.: 10—1. TAKADA 1968, Ins. Mats. 30: 73—4 (♀♂; Japan; cf. also WATANABE 1941, for *Ephedrus japonicus*, partim).

Hosts:

Amphicercidus japonicus HORI — TAKADA 1968, Japan.

Aphis craccivora KOCH — TAKADA 1968, Japan.

Aphis spiraeicola PATCH — TAKADA 1968, Japan.

Cavariella salicicola MATSUMURA — TAKADA 1968, Japan.

Coloradoa artemisicola TAKAHASHI — TAKADA 1968, Japan.

Coloradoa rufomaculata WILSON — TAKADA 1968, Japan.

Hyalopterus pruni GEOFFROYI — TAKADA 1968, Japan.

Hyperomyzus lactucae LINNAEUS — TAKADA 1968, Japan.

Macrosiphum (Sitobion) akebiae SHINJI — TAKADA 1968, Japan.

Macrosiphum (Sitobion) ibarae MATSUMURA — TAKADA 1968, Japan.

Myzus persicae SULZER — TAKADA 1968, Japan. WATANABE & TAKADA 1967, Japan.

Plectrochophorus glandulosus KALTENBACH — TAKADA 1968, Japan.

Prociphilus konoi HORI — TAKADA 1968, Japan.

Rhopalosiphoninus deutifoliae SHINJI — TAKADA 1968, Japan.

Rhopalosiphum padi LINNAEUS — TAKADA 1968, Japan.

Sappaphis mumei HORI — TAKADA 1968, Japan.

Trichosiphonaphis lonicerae UYE — TAKADA 1968, Japan.

Note: see above — the genus *Ephedrus*, discussion.

***Ephedrus niger* GAUTIER, BONNAMOUR, GAUMONT, 1929**

(Bull. Soc. ent. Fr. 1929: 200—1; ♀; France)

Syn.: *Ephedrus (Ephedrus) campestris* STARÝ, 1962, Opusc. entomol. 27: 87—91 (♀♂; Czechoslovakia, Eur. part of the USSR).

Rfcs.: STARÝ 1965, Acta Faun. ent. Mus. Nat. Pragae 10: in 187—22 (Far East). MACKAUER & STARÝ 1967, Index: 18. STARÝ & SCHLINGER 1967, Ser. ent. 3: 43—5 (♀♂; S. Korea). LIU 1968, J. Taiwan Agric. Res., Taipei 17: 39—41 (♀♂; Taiwan). MACKAUER 1968, Cat.: 11.

Hosts:

Macrosiphoniella sanborni GILLETTE — STARÝ & SCHLINGER 1967, S. Korea.

Macrosiphoniella yomogifoliae TAKAHASHI — STARÝ & SCHLINGER 1967, S. Korea.

Megoura viciae BUCKTON — STARÝ & SCHLINGER 1967, S. Korea.

Uroleucon formosanus TAKAHASHI — LIU 1968, Taiwan.

Uroleucon sp. — LIU 1968, Taiwan.

***Ephedrus orientalis* STARÝ & SCHLINGER, 1967**

(Ser. ent. 3: 52—4; ♀♂; Taiwan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 19. MACKAUER 1968, Cat.: 11.

Host: *Hyperomyzus carduellinus* THEOBALD — STARÝ & SCHLINGER 1967, Taiwan.

***Ephedrus persicae* FROGGATT, 1904**

(Agric. Gaz. N.S.W. 15: 611—2; ♀; Australia)

Syn.: *Ephedrus interstitialis* WATANABE, 1941, Ins. Mats. 15: 139—40 (♀; Japan).

Rfcs.: YASUMATSU & MORITSU 1947, Mushi 17: 89 (Japan). MACKAUER & STARÝ 1967, Index: 19—20. STARÝ & SCHLINGER 1967, Ser. ent. 3: 47—52 (♀♂; USSR-Primorye, S. Korea, Japan, Hong Kong, Taiwan). WATANABE & TAKADA 1967, Mushi 40: 84 (Japan). LIU 1968, J. Taiwan Agric. Res., Taipei 17: 36—7 (♀; Taiwan). MACKAUER 1968, Cat.: 11—2. TAKADA 1968, Ins. Mats. 30: 75—6 (♀; Japan). CHIU & LIU 1969, Taiwan Agric. Res. Inst., Taipei, Spec. Publ. 9: 14pp. (Taiwan). TAO & CHIU 1971, Taiwan Agric. Res. Inst., Taipei, Spec. Publ. 10: 12—20 (♀; Taiwan).

Hosts:

Agrioaphis viridis TAKAHASHI — STARÝ & SCHLINGER 1967, Taiwan.

Aphis gossypii GLOVER — STARÝ & SCHLINGER 1967, S. Korea, Taiwan. SCHLINGER & HALL 1960, S. Korea. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Aphis spiraeicola PATCH — STARÝ & SCHLINGER 1967, Taiwan. CHIU & LIU 1969; TAO & CHIU 1971.

Capitophorus sp. — STARÝ & SCHLINGER 1967, Japan.

Capitophorus elaeagni DEL GUERCIO — TAKADA 1968, Japan.

Capitophorus hippophaes WALKER — TAKADA 1968, Japan.

Hyalopterus pruni GEOFFROY — CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Lipaphis erysimi KALTENBACH — CHIU & LIU 1969; LIU 1968; TAO & CHIU 1971; Taiwan.

Macrosiphum (Sitobion) akebiae SHINJI — TAKADA 1968, Japan.

Myzus malisuctus MATSUMURA — STARÝ & SCHLINGER 1967, Japan.

Myzus mumeicola MATSUMURA — WATANABE 1941; TAKADA 1968; Japan.

Myzus persicae SULZER — STARÝ & SCHLINGER 1967, Hong Kong, Taiwan, Japan, S. Korea. TAKADA 1968; WATANABE & TAKADA 1967, Japan. CHIU & LIU 1969; LIU 1968; TAO & CHIU 1971; Taiwan.

Myzus varians DAVIDSON — TAKADA 1968; YASUMATSU & MORITSU 1947; Japan.

Myzus sp. — STARÝ & SCHLINGER 1967, Japan.

Rhopalosiphoninus deutifoliae SHINJI — TAKADA 1968, Japan.

Tinocallis ulmiparvifoliae TAKAHASHI — CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Trichosiphonaphis lonicerae UYE — TAKADA 1968, Japan.

Trichosiphoniella momonis MATSUMURA — STARÝ & SCHLINGER 1967, Taiwan, Japan. WATANABE 1941; TAKADA 1968; Japan.

Vesiculaphis caricis FULLAWAY — STARÝ & SCHLINGER 1967, Japan.

***Ephedrus plagiator* (NEES, 1811)**

(Mag. Ges. naturf. Fr. Berlin 5: 17—8; ♀♂; Germany)

Syn.: *Ephedrus japonicus* ASHMEAD, 1906, Proc. U.S. Nat. Mus. 30: 187 (♀♂; Japan).

Rfcs.: TAKAHASHI 1925, Dept. Agric. Govt. Res. Inst., Formosa, Rept. 16: in 74 pp. (Taiwan). GAHAN 1926, Proc. U.S. Nat. Mus. 70: 7 (Taiwan). WATANABE 1941, Ins. Mats. 15: 170 (Japan). WATANABE 1941, Ins. Mats. 15: 136—9 (♀♂; Japan, Taiwan; cf. TAKADA 1968, Ins. Mats. 30: 72—3). WATANABE 1957, Ins. Mats. 21: 1 (notes on the type). MACKAUER & STARÝ 1967, Index: 20—1. STARÝ & SCHLINGER 1967, Ser. ent. 3: 54—60 (♀♂; USSR-Primorye, Japan, S. Korea, Hong Kong, Taiwan). WATANABE & TAKADA 1967, Mushi 40: 83—4 (♀♂; Japan). LIU 1968, J. Taiwan Agric. Res., Taipei 17: 41 (♀♂; Taiwan). MACKAUER 1968, Cat.: 12—3. CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: 14 pp. (Taiwan).

Hosts:

Acyrtosiphon magnoliae ESSIG & KUWANA — WATANABE 1941, Japan.
Acyrtosiphon pisum HARRIS — CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Amphicercidus japonicus HORI — WATANABE 1941; TAKADA 1968; Japan.
Anuraphis mume HORI — WATANABE 1941, Japan.
Aphis craccivora KOCH — WATANABE 1941; TAKADA 1968; Japan.
Aphis gossypii GLOVER — STARÝ & SCHLINGER 1967, Taiwan, Japan. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Aphis pomi DE GEER — STARÝ & SCHLINGER 1967, Japan.
Aphis "rumicis" LINNAEUS — TAKAHASHI 1925; GAHAN 1926; LIU 1968; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Aphis spiraeicola PATCH — STARÝ & SCHLINGER 1967, Japan, Taiwan, S. Korea. TAKADA 1968, Japan.
Aulacorthum muradachi SHINJI — TAKADA 1968, Japan.
Capitophorus sp. — STARÝ & SCHLINGER 1967, Japan.
Cavariella araliae TAKAHASHI — STARÝ & SCHLINGER 1967, S. China.
Hyalopteris pruni GEOFFROYI — WATANABE 1941, Japan.
Hyperomyzus lactucae LINNAEUS — STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Macrosiphum (Sitobion) avenae FABRICIUS — WATANABE 1941, Japan.
Macrosiphum (Sitobion) akebiae SHINJI — TAKADA 1968, Japan.
Macrosiphum (Sitobion) ibarae MATSUMURA — STARÝ & SCHLINGER 1967, Japan, Taiwan. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Macrosiphum rosae LINNAEUS — WATANABE 1941; WATANABE 1957; Japan.
Macrosiphum sp. — STARÝ & SCHLINGER 1967, Taiwan, Japan.
Melanaphis bambusae FULLAWAY — TAKADA 1968, Japan.
Myzus persicae SULZER — STARÝ & SCHLINGER 1967, Taiwan. WATANABE 1941; TAKADA 1968; WATANABE & TAKADA 1967; Japan. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Neorhopalosiphum lonicericola TAKAHASHI — STARÝ & SCHLINGER 1967, S. Korea. TAKADA 1968, Japan.
Parachaitophorus spiraeae TAKAHASHI — STARÝ & SCHLINGER 1967, Japan.
Prociphilus konoi HORI — WATANABE 1941, Japan.
Prociphilus sp. — TAKADA 1968, Japan.
Rhopalosiphum deutzifoliae SHINJI — STARÝ & SCHLINGER 1967; TAKADA 1968; Japan.
Semiaphis montana VAN DER GOOT — TAKAHASHI 1925; GAHAN 1926; LIU 1968; Taiwan.
Sinomegoura citricola VAN DER GOOT — STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Toxoptera aurantii BOYER DE FONSCOLOMBE — TAKADA 1968, Japan.
Toxoptera odinae VAN DER GOOT — STARÝ & SCHLINGER 1967, Japan, Taiwan. TAKADA 1968, Japan. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Uroleucon formosanus TAKAHASHI — STARÝ & SCHLINGER 1967; TAO & CHIU 1971; Taiwan.

Note: see above — the genus *Ephedrus*, discussion.

***Ephedrus robustus* LIU, 1968**

(Journ. Taiwan Agric. Res., Taipei 17: 38—9; ♀♂; Taiwan)

Rfcs.: CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: 14 pp. TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: 12—20, 32 (Taiwan).

Hosts:

Aphis spiraeicola PATCH — TAO & CHIU 1971; CHIU & LIU 1969; LIU 1968; Taiwan.
Longiunguis sacchari ZERNITNER — CHIU & LIU 1969; LIU 1968; TAO & CHIU 1971; Taiwan.
Rhopalosiphum maidis FITCH — TAO & CHIU 1971, Taiwan.

Note: see above — the genus *Ephedrus*, discussion.

***Ephedrus salicicola* TAKADA, 1968**

(Ins. Mats. 30: 71—2; ♀♂; Japan)

Host: *Cavariella salicicola* MATSUMURA — TAKADA 1968, Japan.

Note: see above — the genus *Ephedrus*, discussion.

***Ephedrus trichosiphoniellae* TAKADA, 1968**

(Ins. Mats. 30: 75; ♀♂; Japan)

Rfcs.: STARÝ, in press, Ztschr. ang. Ent. (Japan).

Hosts:

Impatiens impatiens SHINJI — TAKADA 1968; STARÝ, in press; Japan.
Trichosiphoniella momonis MATSUMURA — TAKADA 1968, Japan.

Note: The record "*Impatiens impatiens*" of *Ephedrus lacertosus* (cf. STARÝ 1970) belongs to *Ephedrus trichosiphoniellae*.

***Ephedrus* sp.**

Rfcs.: SHIGA 1967, Mushi 41: in 75—89 (Japan).

Hosts:

Brevicoryne brassicae LINNAEUS — SHIGA 1967, Japan.
Lipaphis erysimi KALTENBACH — SHIGA 1967, Japan.
Myzus persicae SULZER — SHIGA 1967, Japan.

Genus: *Lipolexis* FÖRSTER, 1862

Rfcs.: MACKAUER 1962, Entomophaga 7: 43–4 (notes, key to world spp.). MACKAUER & STARÝ 1967, Index: 93. STARÝ & SCHLINGER 1967, Ser. ent. 3: 62 (Key 62, review 63–8). MACKAUER 1968, Cat.: 66–7. TAKADA 1968, Ins. Mats. 30: 109 (Japan, review 109–10).

Lipolexis gracilis FÖRSTER, 1862

(Verh. naturh. Ver. preuss. Rheinl. 19: 249; ♀♂; Germany)

Rfcs.: STARÝ 1965, Acta Faun. ent. Mus. Nat. Pragae 10: in 187–227 (Far East). MACKAUER & STARÝ 1967, Index: 93. STARÝ & SCHLINGER 1967, Ser. ent. 3: 63–6 (♀♂; USSR-Primorye, Japan, Hong Kong, Taiwan). MACKAUER 1968, Cat.: 67. TAKADA 1968, Ins. Mats. 30: 109–10 (♀♂; Japan). CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: in 14 pp. (Taiwan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: 12–20, 33–4 (Taiwan).

Hosts:

Aphis craccivora KOCH — TAO & CHIU 1971, Taiwan.
Aphis glycines MATSUMURA — TAO & CHIU 1971, Taiwan.
Aphis gossypii GLOVER — STARÝ & SCHLINGER 1967, Hong Kong, CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Aphis spiraeicola PATCH — STARÝ & SCHLINGER 1967, Japan, Taiwan. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Myzus persicae SULZER — CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Rhopalosiphum padi LINNAEUS — TAKADA 1968, Japan.
Toxoptera aurantii BOYER DE FONSCOLOMBE — STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Lipolexis oregmae (GAHAN, 1932)

(Ann. ent. Soc. Amer. 25: 736–7; ♀; Philippines)

Rfcs.: STARÝ 1960, Ins. Mats. 23: 109–11 (♀; Philippines, notes). STARÝ 1961, Acta ent. Mus. Nat. Pragae 34: in 383–97 (synon.). MACKAUER & STARÝ 1967, Index: 93. STARÝ & SCHLINGER 1967, Ser. ent. 3: 66–7 (♀; Philippines). MACKAUER 1968, Cat.: 67.

Host: *Ceratovacuna lanigera* ZEHTNER — GAHAN 1932; STARÝ 1960; STARÝ & SCHLINGER 1967; Philippines.

Lipolexis scutellaris MACKAUER, 1962

(Entomophaga 7: 43–3; ♀; Hong Kong)

Rfcs.: FLANDERS & FISHER 1959, J. econ. Ent. 52: 536–7. MACKAUER & STARÝ 1967, Index: 93–4. STARÝ & SCHLINGER 1967, Ser. ent. 3: 67–8 (♀♂, Hong Kong, Taiwan). MACKAUER 1968, Cat.: 67. CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: 14 pp. (Taiwan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12–20 (Taiwan).

Hosts:

Aphis craccivora KOCH — CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Aphis gossypii GLOVER — FLANDERS & FISHER 1959, S. China.
Aphis ? hardyi EASTOP — MACKAUER 1968.
Aphis spiraeicola PATCH — STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU 1971, Taiwan.
Toxoptera aurantii BOYER DE FONSCOLOMBE — CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.
Toxoptera citricidus KIRKALDY — CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Genus: *Lysaphidus* SMITH, 1944

Rfcs.: TAKADA, 1966, Ins. Mats. 28: 127–130 (key, review, Japan). MACKAUER & STARÝ 1967, Index: 82. MACKAUER 1968, Cat.: 59. TAKADA 1968, Ins. Mats. 30: 103 (Japan, review 103).

Lysaphidus matsuyamensis TAKADA, 1966

(Ins. Mats. 28: 128–9; ♀♂; Japan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 83. MACKAUER 1968, Cat.: 59. TAKADA 1968, Ins. Mats. 30: 103 (Japan).

Hosts:

Colorado artemisicola TAKAHASHI — TAKADA 1968, Japan.
Colorado sp. — TAKADA 1966, Japan.

Note: The originally mentioned distinguishing characters with respect to the West-Palearctic *Lysaphidus arvensis* STARÝ do not seem to be very convincing. Both species are specific parasites of *Colorado* aphids. The identity of both species is not excluded.

Lysaphidus pleotrichophori TAKADA, 1966

(Ins. Mats. 28: 127–8; ♀♂; Japan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 84. MACKAUER 1968, Cat.: 60. TAKADA 1968, Ins. Mats. 30: 103 (Japan).

Host: *Plectrochophorus glandulosus* KALTENBACH — TAKADA 1966, 1968, Japan.

Note: *Lysaphidus viaticus* SEDLAG, 1969 is possibly identical with *Lysaphidus pleotrichophori*, the latter species having then the nomenclature priority. The descriptions of both species are practically identical; the paratype material of *Lysaphidus viaticus* in our collection agrees also with the description of *Lysaphidus pleotrichophori*. The host aphid species in both parasites is also identical.

Genus: *Lysephedrus* STARÝ, 1958

Rfcs.: MACKAUER & STARÝ 1967, Index: 14. STARÝ & SCHLINGER 1967, Ser. ent. 3: 60 (Far East, 60–2). MACKAUER 1968, Cat.: 8.

***Lysephedrus validus* (HALIDAY, 1833)**

(Ent. Mag. 1: 485—6; ♀♂; England)

Rfcs.: STARÝ 1966, Aphid par. Czechosl. (Far East). MACKAUER & STARÝ 1967, Index: 14—5. STARÝ & SCHLINGER 1967, Ser. ent. 3: 60—2 (♀♂; S. Korea). MACKAUER 1968, Cat.: 8.
Host: *Eriosomatine* aphids — STARÝ & SCHLINGER 1967, S. Korea.

Genus: *Lysiphlebia* STARÝ & SCHLINGER, 1967

Type-species: *Lysiphlebus japonicus* ASHMEAD 1906.

Rfcs.: MACKAUER & STARÝ 1967, Index: 47. STARÝ & SCHLINGER 1967, Ser. ent. 3: 68—9 (key 69, review 69—73, Far East). MACKAUER 1968, Cat.: 30.

***Lysiphlebia japonica* (ASHMEAD, 1906)**

(Proc. U.S. Nat. Mus. 3: 190; ♀♂; Japan)

Rfcs.: GAHAN 1926, Proc. U.S. Nat. Mus. 70: 7 (Taiwan, Japan). WATANABE 1957, Ins. Mats. 21: 3 (notes on the type). MACKAUER & STARÝ 1967, Index: 47. STARÝ & SCHLINGER 1967, Ser. ent. 3: 69—72 (♀♂; Japan, Taiwan, S. Korea). WATANABE & TAKADA 1967, Mushi 40: 85 (Japan). MACKAUER 1968, Cat.: 30. TAKADA 1968, Ins. Mats. 30: 104—5 (♀♂; Japan). KATO 1969, Odokon-Chugoku 11: in 20—7 (Japan). CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: 14 pp. (Taiwan). KATO 1970, Odokon-Chugoku 12: in 1—6 (Japan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12—20, 32—3 (Taiwan).

Hosts:

Aphis craccivora KOCH — TAKADA 1968; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Aphis fukii SHINJI — TAKADA 1968, Japan.

Aphis gossypii GLOVER — WATANABE 1957; TAKADA 1968; Japan. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Aphis ichigo SHINJI — TAKADA 1968, Japan.

Aphis kurosawai TAKAHASHI — TAKADA 1968, Japan.

Aphis sambuci LINNAEUS — STARÝ & SCHLINGER 1967, S. Korea.

Aphis spiraeola PATCH — STARÝ & SCHLINGER 1967, S. Korea, Japan. TAKADA 1968, Japan. CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Aphis sp. — STARÝ & SCHLINGER 1967, S. Korea.

Brachycaudus helichrysi KALTENBACH — STARÝ & SCHLINGER 1967, Japan.

Longiumus japonicus TAKAHASHI — TAKADA 1968, Japan.

Longiumus sacchari ZEHNTNER — STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Melanaphis bambusae FULLAWAY — TAKADA 1968, Japan.

Myzus persicae SULZER — TAKADA 1968; WATANABE & TAKADA 1967; Japan.

Parachaitophorus spiraee TAKAHASHI — STARÝ & SCHLINGER 1967, Japan.

Tetraneura sp. — STARÝ & SCHLINGER 1967, S. Korea.

Titanosiphon neartemisiae TAKAHASHI — TAKAHASHI 1925, Taiwan.

Toxoptera aurantii BOYER DE FONSCOLOMBE — GAHAN 1926; TAKAHASHI 1925; Taiwan. TAKADA 1968, Japan.

Toxoptera citricidus KIRKALDY — KATO 1969, 1970, Japan.

Toxoptera ficicola TAKAHASHI — TAKADA 1968, Japan.

Toxoptera sp. — STARÝ & SCHLINGER 1967, Japan.

“orange aphids” — GAHAN 1926, Taiwan.

***Lysiphlebia rugosa* STARÝ & SCHLINGER, 1967**

(Ser. ent. 3: 72—3; ♀♂; Hong Kong, S. Korea)

Rfcs.: MACKAUER & STARÝ 1967, Index: 47. MACKAUER 1968, Cat.: 30.

Hosts:

Aphis sp. — STARÝ & SCHLINGER 1967, S. Korea.

Brachycaudus helichrysi KALTENBACH — STARÝ & SCHLINGER 1967, Hong Kong, S. Korea.

Genus: *Lysiphlebus* FÖRSTER, 1862

Rfcs.: MACKAUER & STARÝ 1967, Index: 37, 39—40. STARÝ & SCHLINGER 1967, Ser. ent. 3: 73—4 (Far East, review 74—77, key 74). TAKADA 1968, Ins. Mats. 30: 103—4 (Japan, key 104, review 104—7).

***Lysiphlebus ambiguus* (HALIDAY, 1834)**

(Ent. Mag. 2: 104—5; ♀; England)

Rfcs.: TAKADA 1968, Ins. Mats. 30: 106—7 (♀; Japan).

Note: The material mentioned as “*Lysiphlebus* aff. *delhiensis*” most probably belongs to *Lysiphlebus ambiguus* (see below).

(*Lysiphlebus* aff. *delhiensis* SUBBA RAO & SHARMA, 1960)

(Proc. Indian Acad. Sci., B, 51: Suppl., 82—3; ♀♂; India)

Rfcs.: STARÝ & SCHLINGER 1967, Ser. ent. 3: 74—5 (♀♂; S. Korea).

Host: *Aphis* sp. — STARÝ & SCHLINGER 1967, S. Korea.

Note: The present state of our knowledge indicates that material of this “species” belongs most probably to *Lysiphlebus ambiguus*.

***Lysiphlebus salicaphis* (FITCH, 1855)**

(Trans. agric. Soc. St. N.Y. 14: 481; ♀; USA)

Rfcs.: MACKAUER & STARÝ 1967, Index: 38. STARÝ & SCHLINGER 1967, Ser. ent. 3: 75—7 (♀♂; S. Korea). TAKADA 1968, Ins. Mats. 30: 105—6 (♀♂; Japan).

Hosts:

Chaitophorus niger MORDVILKO — TAKADA 1968, Japan.

Chaitophorus salicicolus MATSUMURA — STARÝ & SCHLINGER 1967, S. Korea.

Genus: *Monoctonus* HALIDAY, 1833

Rfcs.: MACKAUER & STARY 1967, Index: 89–90. STARY & SCHLINGER 1967, Ser. ent. 3: 77–8 (Far East, key 78, review 78–81). MACKAUER 1968, Cat.: 63. TAKADA 1968, Ins. Mats. 30: 108 (Japan, key 108, review 108–9).

Monoctonus (Falciconus) longiradius TAKADA, 1966

(Kontyu 34: 154–7; ♀; Japan)

Rfcs.: MACKAUER 1968, Cat.: 65. TAKADA 1968, Ins. Mats. 30: 109 (Japan). STARY, in press, Ztschr. ang. Ent. (to *Falciconus*).

Host: Unknown.

Monoctonus (Monoctonus) nervosus (HALIDAY, 1833)

(Ent. Mag. 1: 488; ♀♂; England)

Rfcs.: TAKADA 1968, Ins. Mats. 30: 108–9 (♀♂; Japan).

Host: Unknown (in the Far East).

Monoctonus (Monoctonus) similis STARY & SCHLINGER, 1967

(Ser. ent. 3: 78–80; ♀♂; Japan)

Rfcs.: MACKAUER & STARY 1967, Index: 92. MACKAUER 1968, Cat.: 65.

Host: *Myzus* sp. — STARY & SCHLINGER 1967, Japan.

Monoctonus (Monoctonus) woodwardiae STARY & SCHLINGER 1967

(Ser. ent. 3: 80–1; ♀; Taiwan)

Rfcs.: MACKAUER & STARY 1967, Index: 92. MACKAUER 1968, Cat.: 66.

Host: *Macromyzus woodwardiae* TAKAHASHI — STARY & SCHLINGER 1967, Taiwan.

Genus: *Paralipsis* FÖRSTER, 1862

Rfcs.: MACKAUER & STARY 1967, Index: 36. STARY & SCHLINGER 1967, Ser. ent. 3: 67 (Japan, review 82–3). MACKAUER 1968, Cat.: 22. TAKADA 1968, Ins. Mats. 30: 91 (Japan, review 91).

Paralipsis eikoeae (YASUMATSU, 1951)

(Rev. franc. d'Ent. 18: 172–4; ♀; Japan)

Rfcs.: STARY 1958, Acta Faun. ent. Mus. Nat. Pragae 3: 89 (notes). YASUMATSU 1960, Kontyu 28: 57 (notes). MACKAUER & STARY 1967, Index: 37. STARY & SCHLINGER 1967, Ser. ent. 3: 82–3 (Japan). MACKAUER 1968, Cat.: 22. TAKADA 1968, Ins. Mats. 30: 91 (Japan).

Host: Unknown.

Genus: *Pauesia* QUILIS, 1931

Rfcs.: WATANABE & TAKADA 1965, Ins. Mats. 28: 1 (key 2–3, review 3–16, Japan). STARY 1960, Acta Faun. ent. Mus. Nat. Pragae 6: 5–44 (world spp.). MACKAUER & STARY 1967, Index: 48. STARY & SCHLINGER 1967, Ser. ent. 3: 83–4 (Far East, key 84, review 84–98). MACKAUER 1968, Cat.: 31. TAKADA 1968, Ins. Mats. 30: 85 (Japan, key 85–6, review 86–90).

Note: The species of *Pauesia* in the West and East Palearctics and in the Nearctics should be compared; it seems that some species are widely distributed and known under different names; such cases have already been known (for example, *Pauesia unilackni*), and the wide distribution range of *Pauesia abietis*, *Pauesia infulata*, *Pauesia loricis*, *Pauesia picta* and *Pauesia pini* is a further indication.

Pauesia abietis (MARSHALL, 1896)

(in ANDRÉ, Spec. Hym. Eur. Alg. 5: 565–6; ♀; England)

Rfcs.: WATANABE & TAKADA 1965, Ins. Mats. 28: 5–7 (♀♂; Japan). MACKAUER & STARY 1967, Index: 48–9. TAKADA 1968, Ins. Mats. 30: 87 (Japan).

Host: *Cinara pineti* KOCH — WATANABE & TAKADA 1965; TAKADA 1968; Japan.

Pauesia akamatsucola TAKADA, 1968

(Ins. Mats. 30: 88–9; ♀♂; Japan)

Host: *Cinara pineti* KOCH — TAKADA 1968, Japan.

Pauesia infulata (HALIDAY, 1834)

(Ent. Mag. 2: 96–7; ♀♂; England)

Rfcs.: WATANABE & TAKADA 1965, Ins. Mats. 28: 7–8 (♀♂; Japan). MACKAUER & STARY 1967, Index: 50–1. STARY & SCHLINGER 1967, Ser. ent. 3: 84–6 (♀♂; Japan). MACKAUER 1968, Cat.: 33. TAKADA 1968, Ins. Mats. 30: 87–8 (Japan).

Host: *Cinara* sp. — WATANABE & TAKADA 1965; STARY & SCHLINGER 1967; TAKADA 1968; Japan.

Pauesia inouyei (WATANABE, 1941)

(Ins. Mats. 15: 107–8; ♀♂; Japan)

Rfcs.: WATANABE & TAKADA 1965, Ins. Mats. 28: 7 (♀♂; Japan). MACKAUER & STARY 1967, Index: 51. STARY & SCHLINGER 1967, Ser. ent. 3: 92–4 (♀♂; Japan). MACKAUER 1968, Cat.: 33. TAKADA 1968, Ins. Mats. 30: 87 (Japan).

Host: *Cinara todocola* INOUE — WATANABE 1941; INOUE & TAKAI 1961; WATANABE & TAKADA 1968; TAKADA 1968; Japan.

***Pauesia japonica* (ASHMEAD, 1906)**

(Proc. U.S. Nat. Mus. 30: 189; ♀♂; Japan)

Rfcs.: WATANABE 1939, Ins. Mats. 13: 83–4 (♀♂; Japan). IWATA 1959, Kontyu 27: in 231–8 (Japan, anatomy). WATANABE & TAKADA 1965, Ins. Mats. 28: 12–3 (♀♂; Japan). WATANABE 1957, Ins. Mats. 21: 2 (notes on the type). MACKAUER & STARY 1967, Index: 51. STARY & SCHLINGER 1967, Ser. ent. 3: 94–5 (♀♂; Japan, notes). MACKAUER 1968, Cat.: 33. TAKADA 1968, Ins. Mats. 30: 89 (Japan). STARY 1971, Mushi 44: 134 (Far East).
Host: *Lachnus tropicalis* VAN DER GOOT — WATANABE 1939, 1957, 1964; WATANABE & TAKADA 1965; TAKADA 1968; Japan. STARY 1971; Far East.

***Pauesia jezoensis* (WATANABE, 1941)**

(Ins. Mats. 15: 108–9; ♀♂; Japan)

Rfcs.: WATANABE & TAKADA 1965, Ins. Mats. 28: 10–1 (♀♂; Japan, as „*Pauesia jezoensis*“, partim). MACKAUER & STARY 1967, Index: 51. STARY & SCHLINGER 1967, Ser. ent. 3: 95–6 (♀♂; Japan). MACKAUER 1968, Cat.: 33–4. TAKADA 1968, Ins. Mats. 30: 88 (Japan).

Hosts:

Cinara costata ZETTERSTEDT — WATANABE 1941, Japan; according to WATANABE & TAKADA (1965) this record belongs to *Pauesia soranumensis*.

Cinara pinicola KALTENBACH — WATANABE 1941; WATANABE & TAKADA 1965; TAKADA 1968; Japan.

***Pauesia kônoi* (WATANABE, 1941)**

(Ins. Mats. 15: 106–7; ♂; Japan)

Rfcs.: WATANABE & TAKADA 1964, Ins. Mats. 27: 11 (♀♂; Japan). WATANABE & TAKADA 1965, Ins. Mats. 28: 3–4 (♀♂, Japan). MACKAUER & STARY 1967, Index: 52. STARY & SCHLINGER 1967, Ser. ent. 3: 96–7 (♀♂; Japan). MACKAUER 1968, Cat.: 34. TAKADA 1968, Ins. Mats. 30: 86–7 (Japan).

Host: *Cinara longipennis* MATSUMURA — WATANABE 1941; WATANABE & TAKADA 1964, 1965; TAKADA 1968; Japan.

***Pauesia laricis* (HALIDAY, 1834)**

(Ent. Mag. 2: 97; ♀♂; England)

Rfcs.: WATANABE 1941, Ins. Mats. 15: 55–6 (♀♂; Japan). WATANABE & TAKADA 1965, Ins. Mats. 28: 12 (notes, Japan). MACKAUER & STARY 1967, Index: 52. MACKAUER 1968, Cat.: 34. TAKADA 1968, Ins. Mats. 30: 88 (Japan).
Host: *Cinara laricicola* MATSUMURA — WATANABE 1940; WATANABE & TAKADA 1965; TAKADA 1968; Japan.

***Pauesia laticeps* (GAHAN, 1926)**

(Proc. U.S. Nat. Mus. 70 (8): 2–3; ♀♂, Taiwan)

Rfcs.: MACKAUER & STARY 1967, Index: 52. STARY & SCHLINGER 1967, Ser. ent. 3: 97–8 (♀♂; Taiwan). MACKAUER 1968, Cat.: 34.

Host: *Cinara* sp. — GAHAN 1926, Taiwan.

***Pauesia momicola* WATANABE & TAKADA, 1965**

(Ins. Mats. 28: 11–2; ♀♂; Japan)

Rfcs.: MACKAUER & STARY 1967, Index: 53. MACKAUER 1968, Cat.: 35. TAKADA 1968, Ins. Mats. 30: 88 (Japan).

Hosts:

Cinara todocola INOUE — TAKADA 1968, Japan.

Cinara sp. — WATANABE & TAKADA 1965, Japan.

***Pauesia nopporensis* WATANABE & TAKADA, 1965**

(Ins. Mats. 28: 4–5; ♀; Japan)

Rfcs.: MACKAUER & STARY 1967, Index: 54. MACKAUER 1968, Cat.: 35. TAKADA 1968, Ins. Mats. 30: 87 (Japan).

Host: *Cinara longipennis* MATSUMURA — WATANABE & TAKADA 1965; TAKADA 1968; Japan.

***Pauesia picta* (HALIDAY, 1834)**

(Ent. Mag. 2: 95–6; ♀; England)

Rfcs.: INOUE & TAKAI 1961, Rep. Hokkaido For. Exp. Sta. 1960: in 215–27 (Japan). MACKAUER & STARY 1967, Index: 54. MACKAUER 1968, Cat.: 35–6.

Host: *Cinara laricicola* MATSUMURA — INOUE & TAKAI 1961, Japan.

***Pauesia pini* (HALIDAY, 1834)**

(Ent. Mag. 2: 96; ♀♂; England)

Syn.: *Aphidius lachnivorus* ASHMEAD, 1906, Proc. U.S. Nat. Mus. 30: 189 (♂; Japan).

Rfcs.: FAHRINGER 1937, Festschr. 60. Geb. E. STRAND 3: 243 (♀♂). WATANABE 1940, Ins. Mats. 15: 54–5 (♀♂; Japan). WATANABE 1941, Ins. Mats. 15: 110–1 (♀♂, Japan), cf. WATANABE & TAKADA 1965, p. 6–7 — it should be ref. to *Pauesia abietis*. WATANABE 1957, Ins. Mats. 21: 2 (Japan; notes on the type). WATANABE & TAKADA 1965, Ins. Mats. 28: 5 (Japan, notes). MACKAUER & STARY 1967, Index: 54–5. STARY & SCHLINGER 1967, Ser. ent. 3: 86–8 (♀♂; Japan). MACKAUER 1968, Cat.: 36. TAKADA 1968, Ins. Mats. 30: 87 (Japan).

Hosts:

Cinara laricicola MATSUMURA — STARY & SCHLINGER 1967; WATANABE 1940, 1957; WATANABE & TAKADA 1965; TAKADA 1968; ? ASHMEAD 1906; Japan.

Cinara laricis LINNAEUS — STARY & SCHLINGER 1967; WATANABE 1940; WATANABE & TAKADA 1965; TAKADA 1968; Japan.

Cinara nuda MORDVILKO — FAHRINGER 1937, Japan.

Cinara pini LINNAEUS — WATANABE 1941, Japan.

***Pauesia salignae* (WATANABE, 1939)**

(Ins. Mats. 13: 81–3; ♀♂; Japan)

Rfcs.: YASUMATSU & al. 1946, Mushi 17: 9 (Japan). WATANABE & TAKADA 1965, Ins. Mats. 28: 13–4 (♀♂; Japan). MACKAUER & STARY 1967, Index: 56. STARY & SCHLINGER 1967, Ser. ent. 3: 22–4 (♀♂; Japan, Taiwan). MACKAUER 1968, Cat.: 37. TAKADA 1968, Ins. Mats. 30: 89–90 (Japan). STARY 1971, Mushi 44: 134 (Japan, Taiwan).

Host: *Tuberolachnus salignus* GMELIN — STARY & SCHLINGER 1967; STARY 1971, Japan, Taiwan. WATANABE 1939, 1957; YASUMATSU & al. 1946; WATANABE & TAKADA 1965; TAKADA 1968; Japan.

***Pauesia soranumensis* WATANABE & TAKADA, 1965**

(Ins. Mats. 28: 9–10; ♀♂; Japan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 56. MACKAUER 1968, Cat.: 37. TAKADA 1968, Ins. Mats. 30: 88 (Japan).

Hosts:

Cinara costata ZETTERSTEDT — WATANABE & TAKADA 1965; TAKADA 1968; Japan.*Cinara pinicola* KALTENBACH — WATANABE & TAKADA 1965; TAKADA 1968; Japan.***Pauesia tropicalis* STARÝ & SCHLINGER, 1967**

(Ser. ent. 3: 89–90; ♀; Japan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 57. MACKAUER 1968, Cat.: 38. STARÝ 1971, Mushi 44: 134 (Far East).

Host: *Lachnus tropicalis* VAN DER GOOT — STARÝ & SCHLINGER 1967; STARÝ 1971; Japan.***Pauesia unilachni* (GAHAN, 1926)**

(Proc. U.S. Nat. Mus. 70: 1–2; ♀♂; Taiwan)

Rfcs.: WATANABE & TAKADA 1965, Ins. Mats. 28: 14–5 (♀♂; Japan). MACKAUER & STARÝ 1967, Index: 57. STARÝ & SCHLINGER 1967, Ser. ent. 3: 90–2 (♀♂; Hong Kong, Taiwan, S. Korea). MACKAUER 1968, Cat.: 38. TAKADA 1968, Ins. Mats. 30: 90 (Japan).

Hosts:

Cinara formosana TAKAHASHI — STARÝ & SCHLINGER 1967, Hong Kong.*Cinara orientalis* TAKAHASHI — STARÝ & SCHLINGER 1967, S. Korea.*Cinara* sp. — STARÝ & SCHLINGER 1967, Hong Kong.*Schizolachnus* sp. — STARÝ & SCHLINGER 1967; GAHAN 1926; Taiwan. WATANABE & TAKADA 1965; TAKADA 1968; Japan.**Genus: *Praon* HALIDAY, 1833**

Rfcs.: MACKAUER & STARÝ 1967, Index: 23–4. STARÝ & SCHLINGER 1967, Ser. ent. 3: 98–9 (Far East, key 69, review 99–105). MACKAUER 1968, Cat.: 14. TAKADA 1968, Ins. Mats. 30: 79 (Japan, key 79–80, review 80–4).

***Praon capitophori* TAKADA, 1968**

(Ins. Mats. 30: 83; ♀♂; Japan)

Host: *Capitophorus* sp. — TAKADA 1968, Japan.***Praon dorsale* (HALIDAY, 1833)**

(Ent. Mag. 1: 484; ♀; England)

Rfcs.: WATANABE & TAKADA 1964, Ins. Mats. 27: 9–10 (♀♂, Japan). TAKADA 1968, Ins. Mats. 30: 83 (♀♂; Japan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12–20 (Taiwan).

Hosts:

Acyrtosiphon pisum HARRIS — TAKADA 1968, Japan.*Indomegoura indica* VAN DER GOOT — WATANABE & TAKADA 1964; TAKADA 1968, Japan. TAO & CHIU 1971, Taiwan.*Uroleucon formosanus* TAKAHASHI — TAO & CHIU 1971, Taiwan.*Uroleucon gobonis* MATSUMURA — TAKADA 1968, Japan. TAO & CHIU 1971, Taiwan.*Uroleucon picridis* FABRICIUS — TAKADA 1968, Japan.

Note: The material referred to as belonging to *Praon dorsale* could belong to about 3 species: 1. The true *Praon dorsale* — parasites of *Uroleucon*, 2. a parasite of *Acyrtosiphon pisum*, possibly *Praon barbatum* MACKAUER or a similar species, 3. a parasite of *Indomegoura indica*.

***Praon flavinode* (HALIDAY, 1833)**

(Ent. Mag. 1: 485; ♀; England)

Syn.: *Praon glabrum* STARÝ & SCHLINGER, 1967, Ser. ent. 3: 99–100 (♀♂; Japan). Syn. nov.

Rfcs.: MACKAUER & STARÝ 1967, Index: 29. MACKAUER 1968, Cat.: 17. TAKADA 1968, Ins. Mats. 30: 81–2 (♀♂; Japan).

TAKADA 1968, Ins. Mats. 30: 122 (synonymy).

Hosts:

Euceraphis punctipennis ZETTERSTEDT — STARÝ & SCHLINGER 1967; TAKADA 1968; Japan.*Callaphidid* aphid on *Alnus* — TAKADA 1968, Japan.

Note: The present state of our knowledge allows us to consider the type-series of *Praon glabrum* as small specimens belonging to *Praon flavinode*. The possible identity of both species has been also correctly mentioned by TAKADA (1968, p. 122).

***Praon orientale* STARÝ & SCHLINGER, 1967**

(Ser. ent. 3: 100–3; ♀♂; Hong Kong, S. Korea, Japan, Taiwan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 31. MACKAUER 1968, Cat.: 18. TAKADA 1968, Ins. Mats. 30: 122 (synonymy).

Hosts:

Acyrtosiphon magnoliae ESSIG & KUWANA — STARÝ & SCHLINGER 1967, Japan.*Acyrtosiphon* sp. — STARÝ & SCHLINGER 1967, Japan.*Amphorophora* sp. — STARÝ & SCHLINGER 1967, Japan.*Aphis spiraeicola* PATCH — STARÝ & SCHLINGER 1967, S. Korea, Japan.*Cavariella* sp. — STARÝ & SCHLINGER 1967, S. Korea.*Hyperomyzus lactucae* LINNAEUS — STARÝ & SCHLINGER 1967, Taiwan.*Macrostiphum (Strobion) ibarae* MATSUMURA — STARÝ & SCHLINGER 1967, Hong Kong, S. Korea, Japan.*Myzus persicae* SULZER — STARÝ & SCHLINGER 1967, S. Korea.*Myzus* sp. — STARÝ & SCHLINGER 1967, Hong Kong.*Parachaitophorus spireae* TAKAHASHI — STARÝ & SCHLINGER 1967, Japan.*Rhopalosiphoninus deutzifoliae* SHINJI — STARÝ & SCHLINGER 1967, Japan.*Rhopalosiphoninus tiliae* MATSUMURA — STARÝ & SCHLINGER 1967, Japan.

Note: Most of the records mentioned under “*Praon volucre*” by TAKADA (1968) should apparently belong to *Praon orientale* (see — the note in *Praon volucre*).

***Praon quadratum* STARÝ & SCHLINGER, 1967**

(Ser. ent. 3: 103–4; ♀♂; Japan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 32. MACKAUER 1968, Cat.: 19.

Host: *Colorado rufomaculata* WILSON — STARÝ & SCHLINGER 1967, Japan.

***Praon rhopalosiphum* TAKADA, 1968**

(Ins. Mats. 30: 80; ♀♂; Japan)

Host: *Rhopalosiphum* sp. near *padi* LINNAEUS — TAKADA 1968, Japan.

***Praon taisetsuzanum* TAKADA, 1968**

(Ins. Mats. 30: 84; ♀♂; Japan)

Host: Unknown.

Note: The relations between *Praon grossum* STARÝ, *Praon alaskense* ASHMEAD and *Praon taisetsuzanum* should be elucidated.

(*Praon volucre* (HALIDAY, 1833))

(Ent. Mag. 1: 484; ♀♂; England)

Rfcs.: WATANABE & TAKADA 1964, Ins. Mats. 27: 8–9 (♀♂; Japan). SHIGA 1967, Mushi 41: in 75–89 (Japan). WATANABE & TAKADA 1967, Mushi 40: 84. TAKADA 1968, Ins. Mats. 30: 82 (♀♂; Japan). TAKADA 1968, Ins. Mats. 30: 122 (synonymy).
Hosts:

Acyrtosiphon magnoliae ESSIG & KUWANA — TAKADA 1968; WATANABE & TAKADA 1964; Japan.

Acyrtosiphon syringae MATSUMURA — TAKADA 1968, Japan.

Amphorophora amurensis MORDVILKO — TAKADA 1968, Japan.

Aulacorthum solani KALTENBACH — TAKADA 1968, Japan.

Macrosiphum (Sitobion) akebiae SHINJI — TAKADA 1968, Japan.

Macrosiphum (Sitobion) ibarae MATSUMURA — TAKADA 1968, Japan.

Myzus persicae SULZER — WATANABE & TAKADA 1967; TAKADA 1968; SHIGA 1967; Japan.

Unisitobion sorbi MATSUMURA — TAKADA 1968, Japan.

Notes: 1. Judging from the re-description of “*Praon volucre*” by TAKADA (1968), the material should belong to *Praon orientale*, possibly even to some other species (parasites of *Amphorophora*, etc.).

2. The similarity of “*Praon volucre*” and *Praon orientale* has been also expressed by TAKADA (1968, p. 122).

***Praon yomenae* TAKADA, 1968**

(Ins. Mats. 30: 80–1; ♀; Japan)

Host: *Macrosiphoniella yomenae* SHINJI — TAKADA 1968, Japan.

Note: The separating of *Praon absinthii* and *Praon yomenae* should be dealt with. The original differential diagnosis of *Praon yomenae* has been based on a re-description of *Praon absinthii* by MACKAUER. However, there are some errors included: in *Praon absinthii*, the F₁ is dark except the basal yellowish ring, the lateral lobes of mesoscutum exhibit hairless areas, etc.

***Praon* spp.**

Rfcs.: GAHAN 1926, Proc. U.S. Nat. Mus. 80 (8): 6. STARÝ & SCHLINGER 1967, Ser. ent. 3: 104–5.

Hosts:

Aphis gossypii GLOVER — STARÝ & SCHLINGER 1967, S. Korea.

Uroleucon formosanus TAKAHASHI — GAHAN 1926, Taiwan.

aphids — STARÝ & SCHLINGER 1967, Japan.

without host records — STARÝ & SCHLINGER 1967, USSR-Primorye.

Genus: *Protaphidius* ASHMEAD, 1900

Rfcs.: MACKAUER & STARÝ 1967, Index: 59. STARÝ & SCHLINGER 1967, Ser. ent. 3: 105 (Far East, review 106–7). MACKAUER 1968, Cat.: 40. TAKADA 1968, Ins. Mats. 30: 91 (Japan, review 91).

***Protaphidius nawai* (ASHMEAD, 1906)**

(Proc. U. S. Nat. Mus. 30: 188; ♀♂; Japan)

Rfcs.: FAHRINGER 1937, Festschr. 60. Geb. E. STRAND 3: 240–5 (♀♂). WATANABE 1957, Ins. Mats. 21: 2 (notes on the type). STARÝ 1959, Ins. Mats. 22: 88–91 (notes on the type, erroneously classified as identical with *Protaphidius wismannii* RATZEBURG). MACKAUER & STARÝ 1967, Index: 59. STARÝ & SCHLINGER 1967, Ser. ent. 3: 106–7 (♀♂; Japan). MACKAUER 1968, Cat.: 40. TAKADA 1968, Ins. Mats. 30: 91 (Japan, as “*Protaphidius wismannii*”). STARÝ 1971, Mushi 44: 134 (Japan).

Host: *Stomaphis yanonis* TAKAHASHI — STARÝ & SCHLINGER 1967; WATANABE 1957; TAKADA 1968; STARÝ 1971; Japan.

Genus: *Toxares* HALIDAY, 1833

Rfcs.: MACKAUER & STARÝ 1967, Index: 21. MACKAUER 1968, Cat.: 13. TAKADA 1968, Ins. Mats. 30: 77 (Japan, review)

***Toxares shigai* TAKADA, 1965**

(Ins. Mats. 28: 17–8; ♀♂; Japan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 22. MACKAUER 1968, Cat.: 13. TAKADA 1968, Ins. Mats. 30: 77 (Japan).

Host: Unknown.

Genus: *Trioxys* HALIDAY, 1833

Rfcs.: TAKADA 1966, Ins. Mats. 29: 23 (Japan, key 23—5, review 25—35). MACKAUER & STARÝ 1967, Index: 94. STARÝ & SCHLINGER 1967, Ser. ent. 3: 107—8 (Far East, subgenera 108, key 109—10, review 110—28.) MACKAUER 1968, Cat.: 67. TAKADA 1968, Ins. Mats. 30: 110 (Japan, key 110—1, review 111—6).

Subgenus: *Betuloxys* MACKAUER, 1960

Trioxys (Betuloxys), comb. nov.) *kamijoi* TAKADA, 1968

(Ins. Mats. 30: 111—2; ♀; Japan)

Host: Unknown.

Subgenus: *Binodoxys* MACKAUER, 1960

Rfcs.: MACKAUER & STARÝ 1967, Index: 102—3. STARÝ & SCHLINGER 1967, Ser. ent. 3: 110 (Far East, review 110—22). MACKAUER 1968, Cat.: 75.

Trioxys (Binodoxys) aculephae (MARSHALL, 1896)

(in ANDRÉ, Spec. Hym. Eur. Alg. 5: 608—9; ♂; England)

Rfcs.: STARÝ & SCHLINGER 1967, Ser. ent. 3: 117—8 (♀♂; USSR-Primorye, as "*T. (B.) gr. rietscheli* MACKAUER").

Host: Unknown (in the Far East).

Trioxys (Binodoxys) brunescens STARÝ & SCHLINGER, 1967

(Ser. ent. 3: 110—1; ♀; Japan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 105. MACKAUER 1968, Cat.: 77.

Host: *Acyrtosiphon* sp. — STARÝ & SCHLINGER 1967, Japan.

Trioxys (Binodoxys) capitophori TAKADA, 1966

(Ins. Mats. 29: 32; ♀; Japan)

Rfcs.: MACKAUER 1968, Cat.: 77. TAKADA 1968, Ins. Mats. 30: 115 (Japan).

Host: *Capitophorus hippophaes* WALKER — TAKADA 1966, Japan.

Trioxys (Binodoxys) carinatus STARÝ & SCHLINGER, 1967

(Ser. ent. 3: 111—2; ♀; Taiwan)

Rfcs.: MACKAUER & STARÝ 1967, Index: 105—6. MACKAUER 1968, Cat.: 77.

Host: *Acyrtosiphon rubiformosanus* TAKAHASHI — STARÝ & SCHLINGER 1967, Taiwan.

Trioxys (Binodoxys) centaureae (HALIDAY, 1833)

(Ent. Mag. 1: 490; ♀; England)

Rfcs.: TAKADA 1966, Ins. Mats. 29: 32—3 (♀♂; Japan). TAKADA 1968, Ins. Mats. 30: 115—6 (Japan).

Host: *Macrosiphum (Sitobion) ibarae* MATSUMURA — TAKADA 1966, Japan.

Note: The material of TAKADA (1966, 1968) has been erroneously reported to belong to "*Trioxys centaureae*". The latter species is different and exhibits also a different host range. — Judging from the re-description of "*Trioxys centaureae*" of TAKADA, his material should belong to *Trioxys orientalis*. The similarity of both "species" has been already expressed by TAKADA (1968, p. 123).

Trioxys (Binodoxys) citri LIU

(in TAO & CHIU 1971; Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: 20, in 12—20; Taiwan; nomen nudum)

Host: *Aphis spiraeicola* PATCH — TAO & CHIU 1971, Taiwan.

Trioxys (Binodoxys) communis GAHAN, 1926

(Proc. U. S. Nat. Mus. 70: 4—5; ♀♂; Taiwan)

Rfcs.: TAKAHASHI 1925, Dept. Agric. Govt. Res. Sta. Formosa, Rept. 16: in 74 pp. (Taiwan, as *Trioxys* sp.). MACKAUER & STARÝ 1967, Index: 106. STARÝ & SCHLINGER 1967, Ser. ent. 3: 113—4 (♀♂; Taiwan). MACKAUER 1968, Cat.: 78. CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: 14 pp. (Taiwan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12—20, 25—8 (♀♂; Taiwan).

Hosts:

Aphis glycines MATSUMURA — TAO & CHIU 1971, Taiwan.

Aphis gossypii GLOVER — TAKAHASHI 1925; GAHAN 1926; STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

Rhopalosiphum sp. — STARÝ & SCHLINGER 1967; TAO & CHIU 1971; Taiwan.

Trioxys (Binodoxys) formosanus LIU

(in: TAO & CHIU, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: 20, 12—20; Taiwan; nomen nudum)

Host: *Acyrtosiphon pisum* HARRIS — TAO & CHIU 1971, Taiwan.

Trioxys (Binodoxys) glycines TAKADA, 1966

(Ins. Mats. 29: 30—2; ♀♂; Japan)

Host: *Aphis glycines* MATSUMURA — TAKADA 1966, Japan.

***Trioxys (Binodoxys) indicus* SUBBA RAO & SHARMA, 1958**

(Indian J. Ent. 20: 199–201; ♀♂; India)

Rfcs.: STARÝ & SCHLINGER 1967, Ser. ent. 3: 114–5 (♀♂; Taiwan). MACKAUER 1968, Cat.: 79. CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: in 14 pp. (Taiwan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12–20 (Taiwan).

Host: *Aphis gossypii* GLOVER — STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

***Trioxys (Binodoxys) orientalis* STARÝ & SCHLINGER, 1967**

(Ser. ent. 3: 115–7; ♀♂; Japan, S. Korea)

Rfcs.: MACKAUER & STARÝ 1967, Index: 108. MACKAUER 1968, Cat.: 79. TAKADA 1968, Ins. Mats. 30: 123 (synonymy). Host: *Macrosiphum (Sitobion) ibarae* MATSUMURA — STARÝ & SCHLINGER 1967, Japan, S. Korea.

Note: The material re-described as “*Trioxys centaureae*” by TAKADA (1968) belongs apparently to *Trioxys orientalis* (cf. “*T. centaureae*”).

***Trioxys (Binodoxys) sinensis* MACKAUER, 1962**

(Entomophaga 7: 40–2; ♀♂; Hong Kong)

Rfcs.: MACKAUER & STARÝ 1967, Index: 109. STARÝ & SCHLINGER 1967, Ser. ent. 3: 118–9 (♀♂; Hong Kong). MACKAUER 1968, Cat.: 80.

Hosts:

Aphis craccivora KOCH — MACKAUER 1962, Hong Kong.

Toxoptera sp. — MACKAUER 1962, Hong Kong. STARÝ & SCHLINGER 1967.

Note: MACKAUER & STARÝ (1967): possibly conspecific with *Trioxys indicus*.

***Trioxys (Binodoxys) struma* GAHAN, 1926**

(Proc. U.S. Nat. Mus. 70: 5–6; ♀♂; Taiwan)

Rfcs.: TAKAHASHI 1925, Dept. Agric. Govt. Res. Sta. Formosa, Rept. 16: in 74 pp. MACKAUER & STARÝ 1967, Index: 109. STARÝ & SCHLINGER 1967, Ser. ent. 3: 119–21 (♀♂; Taiwan). MACKAUER 1968, Cat.: 80. CHIU & LIU 1969, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 9: 14 pp. (Taiwan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12–20 (Taiwan).

Host: *Sinomegoura citricola* VAN DER GOOT — TAKAHASHI 1925; GAHAN 1926; STARÝ & SCHLINGER 1967; CHIU & LIU 1969; TAO & CHIU 1971; Taiwan.

***Trioxys (Binodoxys) toxopterae* TAKADA, 1966**

(Ins. Mats. 29: 33–4; ♀♂; Japan)

Rfcs.: MACKAUER 1968, Cat.: 80. TAKADA 1968, Ins. Mats. 30: 116 (Japan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: on 12–20 (Taiwan).

Host: *Toxoptera aurantii* BOYER DE FONSCOLOMBE — TAKADA 1966, Japan. TAO & CHIU 1971, Taiwan.

Note: The differences between *Trioxys communis*, *Trioxys indicus*, *Trioxys sinensis*, *Trioxys toxopterae* and perhaps even some species described from Taiwan (nom. nuda), should be dealt with in a more detail.

***Trioxys (Binodoxys)* sp.**

Rfcs.: STARÝ & SCHLINGER 1967, Ser. ent. 3: 12 (♂; Taiwan).

Host: *Aphis spiraeicola* PATCH — STARÝ & SCHLINGER 1967, Taiwan.

Subgenus: *Fissicaudus* STARÝ & SCHLINGER, 1967

Rfcs.: STARÝ 1965, Acta Faun. ent. Mus. Nat. Pragae 10: in 187–227. MACKAUER & STARÝ 1967, Index: 109. MACKAUER 1968, Cat.: 80.

***Trioxys (Fissicaudus) confucius* MACKAUER, 1962**

(Entomophaga 7: 37–9; ♀; Hong Kong)

Rfcs.: TAKADA 1966, Ins. Mats. 28: 130 (Japan). TAKADA 1966, Ins. Mats. 29: 34–5 (♀; Japan). MACKAUER & STARÝ 1967, Index: 109. STARÝ & SCHLINGER 1967, Ser. ent. 3: 122–3 (♀♂, Hong Kong, Taiwan). MACKAUER 1968, Cat.: 80. TAKADA 1968, Ins. Mats. 30: 116 (♀; Japan).

Hosts:

Greenidea ficicola TAKAHASHI — STARÝ & SCHLINGER 1967, Hong Kong, Taiwan.

Aphids on *Citrus* — MACKAUER 1962, Hong Kong. STARÝ & SCHLINGER 1967.

Note: According to MACKAUER & STARÝ (1967) this species was included in *Trioxys struma* by GAHAN (1926).

Subgenus: *Trioxys* s. str.

Rfcs.: MACKAUER & STARÝ 1967, Index: 95. STARÝ & SCHLINGER 1967, Ser. ent. 3: 124 (review 124–8, Far East). MACKAUER 1968, Cat.: 68.

***Trioxys (Trioxys) artistigma* TAKADA, 1966**

(Ins. Mats. 29: 29–30; ♀; Japan)

Rfcs.: MACKAUER 1968, Cat.: 69. TAKADA 1968, Ins. Mats. 30: 144 (Japan).

Host: Unknown.

***Trioxys (Trioxys) asiaticus* TELENGA, 1953**

(Trudy Inst. Zool. Parazit. Tashkent 1: 170—1; ♀; Uzbekistan)

Rfcs.: STARÝ & SCHLINGER 1967, Ser. ent. 3: 124—5 (♀♂; USSR-Primorye).

Host: Unknown (in the Far East).

Note: Reared material is recommendable to support the identity of this species in the Far East; the parasite is known to be specific to *Acyrtosiphon gossypii* MORDVILKO in the Asia Minor and Central Asia. Possibly, the material could belong to a very similar species, i.e. *Trioxys pannonicus* STARÝ which known distribution range covers the Mediterranean, some areas of Central Europe, extending to Mongolia.

***Trioxys (Trioxys) auctus* (HALIDAY, 1833)**

(Ent. Mg. 1: 489; ♀♂; England)

Rfcs.: TAKADA 1966, Ins. Mats. 29: 28 (♀♂; Japan). MACKAUER 1968, Cat.: 69. TAKADA 1968, Ins. Mats. 30: 112—3 (Japan). TAO & CHIU 1971, Taiwan Agric. Res. Inst. Taipei, Spec. Publ. 10: in 12—20 (Taiwan).

Hosts:

Rhopalosiphum nymphaeae LINNAEUS — TAO & CHIU 1971, Taiwan.

Rhopalosiphum padi LINNAEUS — TAKADA 1966, 1968, Japan. TAO & CHIU 1971, Taiwan.

***Trioxys (Trioxys) brevipalpus* TAKADA, 1966**

(Ins. Mats. 29: 25—6; ♀♂; Japan)

Rfcs.: MACKAUER 1968, Cat.: 70. TAKADA 1968, Ins. Mats. 30: 112—3 (Japan).

Host: *Trichosiphoniella momonis* MATSUMURA — TAKADA 1966, 1968, Japan.

***Trioxys (Trioxys) eucraphis* TAKADA, 1966**

(Ins. Mats. 29: 28—9; ♀♂; Japan)

Rfcs.: MACKAUER 1968, Cat.: 71. TAKADA 1968, Ins. Mats. 30: 113 (Japan).

Host: *Eucraphis punctipennis* ZETTERSTEDT — TAKADA 1966, 1968, Japan.

***Trioxys (Trioxys) hokkaidensis* TAKADA, 1968**

(Ins. Mats. 30: 114; ♀; Japan)

Host: Unknown.

***Trioxys (Trioxys) japonicus* TAKADA, 1966**

(Ins. Mats. 29: 30; ♀; Japan)

Rfcs.: MACKAUER 1968, Cat.: 72. TAKADA 1968, Ins. Mats. 30: 113—4 (Japan).

Host: Unknown.

***Trioxys (Trioxys) myzocallis* TAKADA, 1968**

(Ins. Mats. 30: 114—5; ♀♂; Japan)

Host: *Myzocallis pilosus* TAKAHASHI — TAKADA 1968, Japan.

***Trioxys (Trioxys) shivaphis* TAKADA, 1966**

(Ins. Mats. 29: 26—8; ♀♂; Japan)

Syn.: *Trioxys (Trioxys) luteolus* STARÝ & SCHLINGER 1967, Ser. ent. 3: 126—7 (♀♂; Taiwan). Nov. syn.

Rfcs.: MACKAUER & STARÝ 1967, Index: 99. MACKAUER 1968, Cat.: 73. TAKADA 1968, Ins. Mats. 30: 112 (Japan). TAKADA 1968, Ins. Mats. 30: 123 (notes).

Hosts:

Shivaphis celti DAS — TAKADA 1966, 1968, Japan.

Shivaphis sp. — STARÝ & SCHLINGER 1967, Taiwan.

Tinocallis ulmiparvifoliae MATSUMURA — STARÝ & SCHLINGER 1967, Taiwan.

Note: Judging from the original descriptions, figures and host range of *Trioxys luteolus* and *Trioxys shivaphis*, both species are conspecific and the name *Trioxys shivaphis* has the nomenclature priority. The same opinion has been also preliminarily expressed by TAKADA (1968, p. 123).

***Trioxys (Trioxys)* sp.**

Rfcs.: STARÝ & SCHLINGER 1967, Ser. ent. 3: 127—8 (♂; Taiwan).

Host: *Chucallis bambusicola* TAKAHASHI — STARÝ & SCHLINGER 1967, Taiwan.

Genus: *Xenostigmus* SMITH, 1944

Rfcs.: TAKADA 1968, Ins. Mats. 30: 84 (Japan, review 84—5).

***Xenostigmus* sp.**

Rfcs.: TAKADA 1968, Ins. Mats. 30: 84—5 (♂; Japan).

Host: *Cinara* sp. — TAKADA 1968, Japan.

Note: The relationship of *Xenostigmus bifasciatus* ASHMEAD to this species should be elucidated as already mentioned by TAKADA (1968). According to our opinion, both species could be identical; possibly, *Xenostigmus* could be even of East-Palearctic in origin, its distribution in the Neartics being then a matter of a natural spread.

Host — Parasite List

Acyrtosiphon

magnoliae

Ephedrus plagiator
Praon orientale
(*Praon volucre*)

nipponicus

Aphidius amamioshimensis

pisum

Aphidius ervi
Ephedrus plagiator
(*Praon dorsale*)
Trioxys formosanus

rubiformosanus

Trioxys carinatus

syringae

(*Praon volucre*)

sp.

Aphidius gifuensis
Aphidius sp.
Praon orientale
Trioxys brunnescens

Agrioaphis

viridis

Ephedrus persicae

Amphicercidus

japonicus

(*Ephedrus nacheri*)
Ephedrus plagiator

Amphorophora

amurensis

(*Aphidius lonicerae*)
(*Praon volucre*)

sp.

Aphidius sp.
Praon orientale

Anuraphis

mume

Ephedrus plagiator

Aphis

craccivora

(*Ephedrus nacheri*)
Ephedrus plagiator
Lipolexis gracilis
Lipolexis scutellaris
Lysiphlebia japonica
Trioxys sinensis

farinosa yanagicola

Lysiphlebus ambiguus

fukii

Lysiphlebia japonica

glycines

Aphidius gifuensis
Lipolexis gracilis
Trioxys communis
Trioxys glycines

gossypii

Aphidius gifuensis
Ephedrus persicae
Ephedrus plagiator
Lipolexis gracilis
Lipolexis scutellaris
Lysiphlebia japonica
Praon sp.
Trioxys communis
Trioxys indicus

? hardyi

Lipolexis scutellaris

ichigo

Lysiphlebia japonica

kurosawai

Lysiphlebia japonica

pomi

Ephedrus plagiator

"runicis"

Ephedrus plagiator

sambuci

Lysiphlebia japonica

spiraecola

(*Ephedrus nacheri*)
Ephedrus persicae
Ephedrus plagiator
Ephedrus robustus
Lipolexis gracilis
Lipolexis scutellaris
Lysiphlebia japonica
Praon orientale
Trioxys citri
Trioxys sp.

sp.

Diaeretiella rapae
Lysiphlebia japonica
Lysiphlebia rugosa
Lysiphlebus ambiguus (?)
(*Lysiphlebus* aff. *delhiensis*)

Aulacorthum

muradachi

Ephedrus plagiator

solani

Aphidius gifuensis
(*Praon volucre*)

Brachycaudus

helichrysi

Lysiphlebia japonica
Lysiphlebia rugosa

Brevicoryne

brassicae

Aphidius sp.
Diaeretiella rapae
Ephedrus sp.

Callaphididae unident.

sp.

Biozys japonicus

Callipterinella

betularia

Aphidius aquilus

Capitophorus

elaeagni

Ephedrus persicae

hippophaes

Ephedrus persicae
Trioxys capitophori

sp.

Aphidius gifuensis
Ephedrus persicae
Ephedrus plagiator
Praon capitophori

Cavariella

araliae

Aphidius salicis
(*Ephedrus plagiator*)

salicicola

Aphidius salicis
(*Diaeretiella rapae*)
(*Ephedrus nacheri*)
Ephedrus salicicola

sp.

Aphidius salicis
Ephedrus cavariellae
Praon orientale

Ceratovacuna

lanigera

Lipolexis oregmae

Chaitophorus

niger

Lysiphlebus salicaphis

salicicolus

Lysiphlebus salicaphis

Chucallis

bambusicola

Trioxys sp.

Cinara

costata

(*Pauesia jezoensis*)
Pauesia soranumensis

formosana

Pauesia unilachni

laricicola

Pauesia laricis
Pauesia picta
Pauesia pini

laricis

Pauesia pini

longipennis

Pauesia kono
Pauesia nopporensis

nuda

Pauesia pini

orientalis

Pauesia unilachni

pineti

Pauesia abietis
Pauesia akamatsucola

pini

Pauesia pini

pinicola

Pauesia jezoensis
Pauesia soranumensis

todocola

Pauesia inouyei
Pauesia momicola

sp.

Pauesia infulata
Pauesia laticeps
Pauesia momicola
Pauesia unilachni
Xenostigmus sp.

Coloradoa

artemiscicola

(*Ephedrus nacheri*)
Lysaphidus matsuyamensis

rufomaculata

(*Ephedrus nacheri*)
Praon quadratum

sp.

Lysaphidus matsuyamensis

Euceraphis

punctipennis

Praon flavinode
Trioxys euceraaphis

Eulachnus

thunbergii

Diaeretus leucopterus

Greenidea

ficiala

Archaphidus greenideae
Diaeretiella rapae
Trioxys confucius

Hormaphis

betulina

Calaphidius watanabei

Hyalopterus

pruni

(*Ephedrus nacheri*)
Ephedrus persicae
Ephedrus plagiator

Hyperomyzus

carduellinus

Ephedrus orientalis

lactucae

(*Ephedrus nacheri*)
Ephedrus plagiator
Praon orientale

Impatientinum

impatiens

(*Ephedrus lacertosus*)
Ephedrus trichosiphoniellae

Indomegoura

indica

(*Praon dorsale*)

Lachnus

tropicalis

Pauesia japonica
Pauesia tropicalis

Lipaphis

erysimi

Aphidius gifuensis
Diaeretiella rapae
Ephedrus persicae
Ephedrus sp.

Longiunguis

japonicus

Lysiphlebia japonica

sacchari

Ephedrus robustus
Lysiphlebia japonica

Machilaphis

machili

Bioxys japonicus

Macromyzus

woodwardiae

Ephedrus lacertosus
Monotonus woodwardiae

Macrosiphoniella

formosartemisiae

Aphidius absinthii

grandicauda

Aphidius longipetiolus

hikosanensis

Aphidius macrosiphoniellae

pseudoartemisiae

Aphidius absinthii

sanborni

Aphidius absinthii
Aphidius macrosiphoniellae
Ephedrus niger

yomenae

Aphidius absinthii
Aphidius macrosiphoniellae
Praon yomenae

yomogifoliae

Aphidius absinthii
Ephedrus niger

Macrosiphum

akebiae (Sitobion)

(*Aphidius avenae*)
Aphidius gifuensis
(*Ephedrus nacheri*)
Ephedrus persicae
Ephedrus plagiator
(*Praon volucre*)

"avenae" (Sitobion)

(*Aphidius avenae*)
Ephedrus plagiator

ibarae (Sitobion)

(*Aphidius avenae*)
Aphidius gifuensis
Aphidius sp.
(*Ephedrus nacheri*)
Ephedrus plagiator
Praon orientale
(*Praon volucre*)
(*Trioxys centaureae*)
Trioxys orientalis

rosae

Aphidius sp.
Ephedrus plagiator

sp.

Aphidius ervi
Aphidius gifuensis
Ephedrus plagiator

Megoura

viciae

Ephedrus niger

Melanaphis

bambusae

Ephedrus plagiator
Lysiphlebia japonica

Myzocallis

pilosus

Trioxys myzocallis

Myzus

malisuctus

Ephedrus persicae

munecola

Ephedrus persicae

persicae

Aphidius gifuensis
Aphidius sp.
Diaeretiella rapae
(*Ephedrus nacheri*)
Ephedrus persicae
Ephedrus plagiator
Ephedrus sp.
Lipolexis gracilis
Lysiphlebia japonica
Praon orientale
(*Praon volucre*)

varians

Ephedrus persicae

sp.

Aphidius gifuensis
Ephedrus persicae
Myzus similis
Praon orientale

Neorhopalomyzus

lonicericola

Ephedrus plagiator

Parachaitophorus

spireae

Ephedrus plagiator
Lysiphlebia japonica
Praon orientale

Pemphigidae unident.

sp.

Lysephedrus validus

Periphyllus

californiensis

Aphidius areolatus

koeltreuteriae

Aphidius areolatus

testudinaceus

Aphidius areolatus

sp.

Aphidius areolatus
(*Areopraon* sp.)

Pleotrichophorus

glandulosus

(*Ephedrus nacheri*)
Lysaphidius pleotrichophori

Prociphilus

kanoi

(*Ephedrus nacheri*)
Ephedrus plagiator

sp.

Ephedrus plagiator

Pterocomma

sp.

Aphidius cingulatus

Rhopalosiphoninus

deutzifoliae

Aphidius sp.
(*Ephedrus nacheri*)
Ephedrus persicae
Ephedrus plagiator
Praon orientale

tiliae
Praon orientale

Rhopalosiphum

maidis
Ephedrus robustus

nymphaeae
Trioxys auctus

padi
(*Ephedrus nacheri*)
Lipolexis gracilis
Praon rhopalosiphii

sp.
Trioxys communis

Sappaphis

mumei
(*Ephedrus nacheri*)

Schizolachnus

sp.
Pauesia unilachni

Semiaphis

montana
Ephedrus plagiator

Shivaphis

celti
Trioxys shivaphis

sp.
Trioxys shivaphis

Sinomegoura

citricola
Ephedrus plagiator
Trioxys struma

Stomaphis

yanonis
Protaphidius nawai

Tetraneura

sp.
Lysiphlebia japonica

Tinocallis

ulmiparvifoliae
Ephedrus persicae
Trioxys shivaphis

Titanosiphon

neoartemisiae
Aphidius sp.
Lysiphlebia japonica

Toxoptera

aurantii
Ephedrus plagiator
Lipolexis gracilis
Lipolexis scutellaris
Lysiphlebia japonica
Trioxys toxopterae

citricidus
Lipolexis scutellaris
Lysiphlebia japonica

ficicola
Lysiphlebia japonica

odinae
Ephedrus plagiator

sp.
Lysiphlebia japonica
Trioxys sinensis

Trichosiphonaphis

lonicerae
(*Ephedrus nacheri*)
Ephedrus persicae

Trichosiphoniella

momonis
Ephedrus persicae
Ephedrus trichosiphoniellae
Trioxys brevipalpus

Tuberolachnus

salignus
Pauesia salignae

Unisitobion

sorbi
(*Praon voluere*)

Uroleucon

formosanum
Ephedrus niger
Ephedrus plagiator
Praon dorsale
Praon sp.

gobonis
Praon dorsale

picridis
Praon dorsale

solidaginis
Aphidius funebris

sp.
Ephedrus niger

Vesiculaphis

caricis
Ephedrus persicae

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<i>eikoe</i> YASUMATSU, <i>Myrmecobosca</i>	63	<i>picta</i> (HALIDAY), <i>Pauesia</i>	64
<i>eikoe</i> (YASUMATSU), <i>Paralipsis</i>	63	<i>pini</i> (HALIDAY), <i>Pauesia</i>	64
<i>Ephedrus</i> HALIDAY	58	<i>plagiator</i> (NEES), <i>Ephedrus</i>	60
<i>ervi</i> HALIDAY, <i>Aphidius</i>	55	<i>pleotrichophori</i> TAKADA, <i>Lysaphidius</i>	61
<i>euceraphis</i> TAKADA, <i>Trioxys</i>	69	<i>Praon</i> HALIDAY	65
<i>Fissicaudus</i> STARY & SCHLINGER	68	<i>Protophidius</i> ASHMEAD	66
<i>flavinode</i> (HALIDAY), <i>Praon</i>	65	<i>quadratum</i> STARY & SCHLINGER, <i>Praon</i>	66
<i>formosanus</i> LIU, <i>Trioxys</i>	67	<i>rapae</i> (M'INTOSH), <i>Diaeretiella</i>	57
<i>funbris</i> MACKAUER, <i>Aphidius</i>	55	<i>rhopalosiphum</i> TAKADA, <i>Praon</i>	66
<i>gifuensis</i> ASHMEAD, <i>Aphidius</i>	55	<i>rietscheli</i> MACKAUER, <i>Trioxys</i>	67
* <i>glabrum</i> STARY & SCHLINGER, <i>Praon</i>	65	<i>robustus</i> LIU, <i>Ephedrus</i>	60
<i>glycines</i> TAKADA, <i>Trioxys</i>	67	<i>rugosa</i> STARY & SCHLINGER, <i>Lysiphlebia</i>	62
<i>gracilis</i> FÖRSTER, <i>Lipolexis</i>	61	<i>salicaphis</i> (FITCH), <i>Lysiphlebus</i>	62
<i>greenideae</i> STARY & SCHLINGER, <i>Archaphidius</i>	56	<i>salicicola</i> TAKADA, <i>Ephedrus</i>	60
<i>grossum</i> STARY, <i>Praon</i>	66	<i>salicis</i> HALIDAY, <i>Aphidius</i>	56
<i>hokkaidensis</i> TAKADA, <i>Trioxys</i>	69	<i>salignae</i> WATANABE, <i>Aphidius</i>	64
<i>indicus</i> SUBBA RAO & SHARMA, <i>Trioxys</i>	68	<i>salignae</i> (WATANABE), <i>Pauesia</i>	64
<i>infulata</i> (HALIDAY), <i>Pauesia</i>	63	<i>scutellaris</i> MACKAUER, <i>Lipolexis</i>	61
<i>inouyei</i> WATANABE, <i>Aphidius</i>	63	<i>shigai</i> TAKADA, <i>Toxares</i>	66
<i>inouyei</i> (WATANABE), <i>Pauesia</i>	63	<i>shivaphis</i> TAKADA, <i>Trioxys</i>	69
* <i>interstitialis</i> WATANABE, <i>Ephedrus</i>	59	* <i>sicarius</i> MACKAUER, <i>Aphidius</i>	55
<i>japonica</i> (ASHMEAD), <i>Lysiphlebia</i>	62	<i>similis</i> STARY & SCHLINGER, <i>Monoctonus</i>	63
<i>japonica</i> (ASHMEAD), <i>Pauesia</i>	64	<i>sinensis</i> MACKAUER, <i>Trioxys</i>	68
<i>japonicus</i> ASHMEAD, <i>Aphidius</i>	64	<i>soraniensis</i> WATANABE & TAKADA, <i>Pauesia</i>	65
* <i>japonicus</i> ASHMEAD, <i>Ephedrus</i>	60	* <i>staryi</i> MACKAUER, <i>Trioxys</i>	57
<i>japonicus</i> ASHMEAD, <i>Lysiphlebus</i>	62	<i>struma</i> GAHAN, <i>Trioxys</i>	68
* <i>japonicus</i> STARY & SCHLINGER, <i>Bioxys</i>	57	<i>taizetsuzanum</i> TAKADA, <i>Praon</i>	66
<i>japonicus</i> TAKADA, <i>Trioxys</i>	69	<i>Toxares</i> HALIDAY	66
<i>jezoensis</i> WATANABE, <i>Aphidius</i>	64	<i>toxopterae</i> TAKADA, <i>Trioxys</i>	68
<i>jezoensis</i> (WATANABE), <i>Pauesia</i>	64	<i>trichosiphoniellae</i> TAKADA, <i>Ephedrus</i>	60
<i>kamijoi</i> TAKADA, <i>Trioxys</i>	67	<i>Trioxys</i> HALIDAY	67
<i>kōnoi</i> WATANABE, <i>Aphidius</i>	64	<i>Trioxys</i> s. str.	68
<i>kōnoi</i> (WATANABE), <i>Pauesia</i>	64	<i>tropicalis</i> STARY & SCHLINGER, <i>Pauesia</i>	65
<i>kurohimense</i> TAKADA, <i>Areopraon</i>	56	<i>unilachni</i> GAHAN, <i>Aphidius</i>	65
<i>lacertosus</i> (HALIDAY), <i>Ephedrus</i>	58	<i>unilachni</i> (GAHAN), <i>Pauesia</i>	65
* <i>lachnivorus</i> ASHMEAD, <i>Aphidius</i>	64	<i>urticae</i> HALIDAY, <i>Aphidius</i>	56
<i>laricis</i> (HALIDAY), <i>Pauesia</i>	64	<i>validus</i> (HALIDAY), <i>Lysephedrus</i>	62
<i>laticeps</i> GAHAN, <i>Aphidius</i>	64	<i>viaticus</i> SEDLAG, <i>Lysaphidius</i>	61
<i>laticeps</i> (GAHAN), <i>Pauesia</i>	64	<i>(volucre</i> (HALIDAY), <i>Praon</i>)	66
<i>leucopterus</i> (HALIDAY), <i>Diaeretus</i>	64	<i>watanabei</i> (TAKADA), <i>Calaphidius</i>	57
<i>Lipolexis</i> FÖRSTER	58	<i>watanabei</i> TAKADA, <i>Monoctonus</i>	57
<i>longipetiolus</i> TAKADA, <i>Aphidius</i>	61	<i>(wissmanni</i> (RATZBURG), <i>Protophidius</i>)	66
<i>longiradius</i> TAKADA, <i>Monoctonus</i>	56	<i>woodwardiae</i> STARY & SCHLINGER, <i>Monoctonus</i>	63
<i>(lonicerae</i> MARSHALL, <i>Aphidius</i>)	63	<i>Xenostigmus</i> SMITH	69
* <i>luteolus</i> STARY & SCHLINGER, <i>Trioxys</i>	56	<i>yomenae</i> TAKADA, <i>Praon</i>	66
<i>Lysaphidius</i> SMITH	69		
<i>Lysephedrus</i> STARY	61		
<i>Lysiphlebia</i> STARY & SCHLINGER	62		
<i>Lysiphlebus</i> FÖRSTER	62		

Summary

The present paper critically compiles the information on the Far East Asian Aphidiidae; it aims at elucidating the situation that has developed after several important papers which had been prepared independently of each other were published within a few years. In some cases, a critical comment is included to stress the existing problems.

The nomenclatural changes are as follows: *Bioxys japonicus* STARÝ & SCHLINGER, 1967 [= *Tricixys (Tricixys) staryi* MACKAUER, 1968 syn. nov.; = *Tricixys machilaphidis* TAKADA, 1968 syn. nov.], *Praon flavinode* (HALIDAY, 1833) [= *Praon glabrum* STARÝ & SCHLINGER, 1967], *Tricixys (Betuloxys) kamijoi* TAKADA, 1968 comb. nov., *Tricixys (Tricixys) shivaphis* TAKADA, 1966 [= *Tricixys (Tricixys) luteolus* STARÝ & SCHLINGER, 1967 syn. nov.].

Zusammenfassung

Die vorliegende Arbeit stellt die Informationen über die ostasiatischen Aphidiidae kritisch zusammen. Sie soll die Situation klären, die sich ergeben hat, nachdem mehrere wichtige, unabhängig voneinander entstandene Artikel innerhalb weniger Jahre erschienen. In einigen Fällen wird durch einen kritischen Kommentar auf die bestehenden Probleme noch besonders hingewiesen.

Bei den nomenklatorischen Änderungen handelt es sich um folgende: *Bioxys japonicus* STARÝ & SCHLINGER, 1967 [= *Tricixys (Tricixys) staryi* MACKAUER, 1968 syn. nov.; = *Tricixys machilaphidis* TAKADA, 1968 syn. nov.], *Praon flavinode* (HALIDAY, 1833) [= *Praon glabrum* STARÝ & SCHLINGER, 1967], *Tricixys (Betuloxys) kamijoi* TAKADA, 1968 comb. nov., *Tricixys (Tricixys) shivaphis* TAKADA, 1966 [= *Tricixys (Tricixys) luteolus* STARÝ & SCHLINGER, 1967 syn. nov.].

Резюме

В данной работе критически анализируются информации в восточно-азиатских Aphidiidae. Она должна содействовать разъяснению ситуации, сложившейся после опубликования за немногие годы нескольких важных независимо друг о друга написанных статей. В некоторых случаях критическими замечаниями особенно отмечаются нерешённые вопросы.

Изменения в номенклатуре касаются: *Bioxys japonicus* STARÝ & SCHLINGER, 1967 [= *Tricixys (Tricixys) staryi* MACKAUER, 1968 syn. nov.; = *Tricixys machilaphidis* TAKADA, 1968 syn. nov.], *Praon flavinode* (HALIDAY 1833) [= *Praon glabrum* STARÝ & SCHLINGER, 1967], *Tricixys (Betuloxys) kamijoi* TAKADA, 1968 comb. nov., *Tricixys (Tricixys) shivaphis* TAKADA, 1966 [= *Tricixys (Tricixys) luteolus* STARÝ & SCHLINGER, 1967 syn. nov.].

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