

Revision of
„A Catalogue of the known Species of the World
belonging to the Subfamily Aphidiinae“

(Hymenoptera: Braconidae)

E. S. NARAYANAN, B. R. SUBBA RAO & A. K. SHARMA

Division of Entomology Indian Agricultural Research Institute, New Delhi, India

& P. STARÝ

Institute of Entomology, Czechoslovak Academy of Science, Prague, Czechoslovakia

(With 2 figures)

Introduction

The three Indian authors had catalogued the known forms of the Aphidiinae some time back.¹⁾ As stated in the introductory remarks to that paper, literature published till 1957 was consulted while preparing the paper.

The years 1958—61 have proved to be memorable in so far as the taxonomy and biology of this group are concerned. Besides some excellent contributions on the biology of the group VAN DEN BOSCH, SCHLINGER, HAGEN, HALL and others in the United States, there appeared, during this period, a series of taxonomic papers by two European workers: STARÝ from Czechoslovakia and MACKAUER from the Federal Republic of Germany. The studies of these two workers have brought about a considerable number of alterations and additions to our present knowledge of Aphidiinae. Their papers are of very great importance to any serious student of this group of parasites, representing as they do a fresh attempt to re-examine and restudy the taxonomy of this much-neglected group, on modern lines.

We are publishing this supplement incorporating the work done since 1957 till the end of 1961 by various workers in this group. It is a great pleasure to do so and we express our debt of gratitude to all those upon whose work we have generously drawn. We are particularly grateful to Professor Dr. HANS SACHTLEBEN, for sending us reprints and microfilms of most of the papers of Dr. P. STARÝ and of Dr. M. MACKAUER, and for the kind interest and pains he took in editing the earlier and the present paper.

A few lines on the method followed in this supplement are called for here. Mainly such information as was not included in the earlier paper has been presented here; such generic and specific names are preceded by an asterisk. A number of corrections have also been made, in the light of recent work.

The genus *Aphidius* NEES, 1818, s. str. has been left out of the present supplement. A number of forms described therein need a thorough re-examination and until then it is, perhaps, wise to leave it out of the scope of the present supplement.

SMITH (1944) adopted more or less the same terms for veins and cell as had been used by WILKINSON (1930) who had in his turn borrowed many terms from earlier workers. STARÝ (1958), however, used a much different terminology than that followed by WIL-

¹⁾ NARAYANAN, E. S., SUBBA RAO, B. R. & SHARMA, A. K.: A Catalogue of the known Species of the World belonging to the Subfamily Aphidiinae. Beitr. Ent., 10, 545—581, 1960.

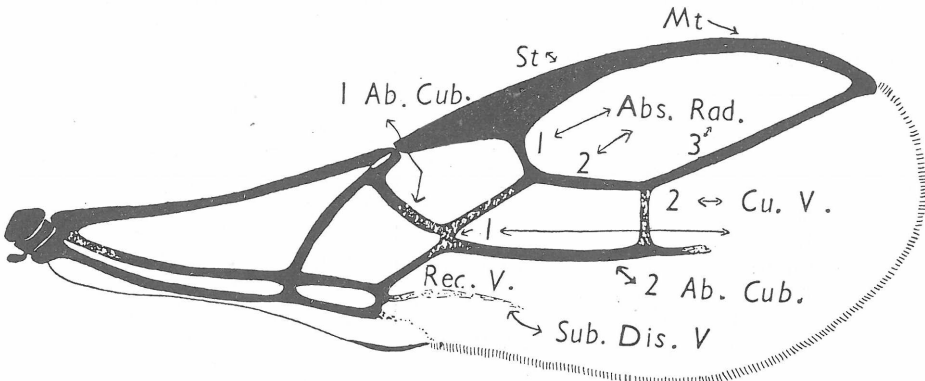


Fig. 1. Forewing of *Ephedrus* sp.: Vein- and cell-nomenclature as used by SMITH, 1944. — 1 Ab. Cub. = 1st abscissa of cubitus, 2 Ab. Cub. = 2nd abscissa of cubitus, St = stigma, Mt = metacarpus, 1 Abs. Rad. = 1st abscissa of radius, 2 Abs. Rad. = 2nd abscissa of radius, 3 Abs. Rad. = 3rd abscissa of radius, 1 Cu. V. = 1st cubital cross vein, 2 Cu. V. = 2nd cubital cross vein, Rec. V. = recurrent vein, Sub. Dis. V. = subdiscoidal vein

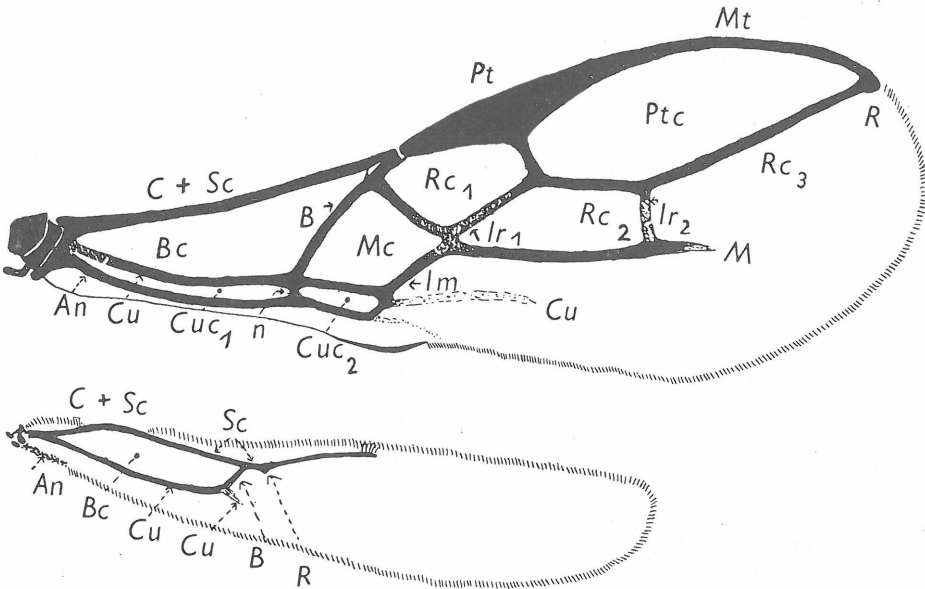


Fig. 2. Fore- and hindwing of *Ephedrus* sp.: Vein- and cell-nomenclature as used by STARÝ, 1958. — C + Sc = costal and subcostal veins, Pt = pterostigma, Mt = metacarp., Bc = basal cell, B = basal vein, Mc = median cell, Rc₁ = 1st radial cell, Rc₂ = 2nd radial cell, Rc₃ = 3rd radial cell, R = radius, Ir₁ = 1st interradial cell, Ir₂ = 2nd interradial vein, M = median vein, Im = intermedian vein, Cu = cubital vein, An = anal vein, Cu = cubital vein, Cuc₁ = 1st cubital cell, n = nervellus, Cuc₂ = 2nd cubital cell

KINSON, SMITH, MUESEBECK and other workers in Braconidae generally. A comparison, of the two is given below, particularly because STARÝ has followed his 1958 nomenclature in all his subsequent papers.

SMITH	STARÝ
Veins	
Stigma	Pterostigma
Metacarpus	Metacarpus
Radius	Radial
Cubitus	Median
1st Cubital Cross Vein	1st Inter radial
2nd Cubital Cross Vein	2nd Inter radial
Subdiscoidal (= Parallel of WILKINSON & others)	Cubital (in part)
Recurrent	Intermedian
Cells	
Radial	Pterostigmal
I Cubital	I Radial
II Cubital	II Radial
III Cubital	III Radial
Discoidal	Median

Further, SMITH (1944) left certain veins and cells unnamed (in figure context) presumably because of the fact that they are not used for classificatory purposes in the Aphidiinae. STARÝ (1958), however, named every cell and vein in his figure (an *Ephedrus* sp.). The terms used by him are compared below with those used by WILKINSON (1930 et seq.).

STARÝ	WILKINSON
Veins	
Costal + Sub-costal	Costal + Sub-costal
Basal	Basal
Cubital	Median + Parallel
Anal	Anal
Nervellus	Nervulus
Cells	
Basal	I Basal
I Cubital	II Basal
II Cubital	I Brachial

MACKAUER (1949 a, et seq.) employs the „standard“ terminology used by WILKINSON and others.

The terminology used by WILKINSON for describing the venation of Braconids, which has been almost adopted almost in toto by SMITH and others, has the advantage of being widely used and hence readily understood. The terms employed therein are almost the same as used by such eminent early workers as FOERSTER, HALIDAY, MARSHALL, and SZÉPLIGETI.

The terminology used by STARÝ (1958, et seq.¹) neither wholly follows the standard nomenclature of veins and cells as used since the time of HALIDAY and others to the pre-

¹) Notes on this system of terminology see: BOUČEK, Acta ent. Mus. Nat. Pragae, **30**, 441—446, 1955.

sent, nor does he wholly employ the terms used in the COMSTOCK-NEEDHAM System. However, it is not difficult to understand it. It is, however, interesting to note that a contemporary European worker on Aphidiinae, Dr. MACKAUER of Frankfurt, has chosen to continue to employ the older, standard nomenclature rather than STARÝ's. It would, perhaps, be to the advantage of all workers in this group, and to workers in Braconidae generally, if some universally accepted nomenclature of veins and cells was evolved and strictly adhered to; that step would obviate a great deal of confusion.

Some remarks on the generic classification
of the Aphidiinae followed in this Catalogue

The generic classification of the Aphidiinae is in many respects a complex subject. This is particularly true of certain genera which we designate here as the „*Aphidius* group of genera“. This includes: *Aphidius* NEES; *Lysaphidus* SMITH; *Pauesia* PÉREZ; *Lysiphlebus* FOERSTER; *Metaphidius* STARÝ & SEDLAG; *Diaeretiella* STARÝ; *Diaretellus* STARÝ und *Xenostigmus* SMITH. There can be no doubt that some of these genera form closely related groups, and this is precisely the circumstance which makes for a difficult situation when one is determining their status. SMITH (1944) divided *Aphidius* NEES into 5 subgenera viz., *Aphidius* NEES, „*Protaphidius* ASHMEAD“ (for which the correct name is now known to be *Pauesia* PÉREZ), *Lysiphlebus* FOERSTER, *Lysaphidus* SMITH and *Xenostigmus* SMITH. STARÝ (1958) proposed the new name *Paraphidius* for *Protaphidius* ASHMEAD (auctt., nec ASHMEAD), the name *Protaphidius* being restricted to *Protaphidius wissmanni* (RATZBURG) and ? *P. nawaii* (ASHMEAD), and designated *Paraphidius* as a subgenus of *Aphidius* NEES.

In the key to aphidiine genera given in that paper, STARÝ kept *Aphidius* NEES, *Lysiphlebus* FOERSTER, *Lysaphidus* SMITH, *Xenostigmus* SMITH and *Paraphidius* STARÝ as subgenera of *Aphidius* NEES. STARÝ & SEDLAG (1959) described *Metaphidius* new subgenus and placed it also as a subgenus of *Aphidius* NEES, thus raising the total number of subgenera of *Aphidius* NEES to 6. However, STARÝ (1960) expressed the view that all these subgenera should have generic rank and treated them as such in his key therein. In that paper, he also synonymised *Pauesia* PÉREZ 1931 and *Paraphidius* STARÝ, 1958, but for some reason „sunk“ *Pauesia* rather than the other way around. Nevertheless he explained and rectified this opinion in 1961 when redescribing the quoted genus. STARÝ (1960) in other paper, also erected *Diaeretiella* and *Diaeretellus* n. gen. and restricted *Diaeretus* to *D. leucopterus* (HALIDAY). However, he made it clear that this new genera were closely related to *Aphidius* NEES.

MACKAUER (1961) expressed the opinion that *Diaeretellus*, *Diaeretiella*, *Lysaphidus*, and *Aphidius* are actually four subgenera of the large genus *Aphidius* NEES. He retained *Pauesia* PÉREZ (= *Paraphidius* STARÝ, = „*Protaphidius* ASHMEAD“, auctt.) as a valid genus. But in another paper (1961) he erected the new classification of the Aphidiidae where he used somewhat different classification.

Thus, judging from the recent papers of various authors, we are of the view that the generic classification of the Aphidiinae has been rather indefinite as yet. For this reason, too, we treat all „questionable“ taxa (e. g. *Lysaphidius*, *Diaeretiella*, etc.) as of generic rank, at any for the time being. The criticism of the contemporary classification of the Aphidiinae is but not the purpose of this paper.

Genus *Acanthocaudus* SMITH

Acanthocaudus SMITH, 1944. Aphidiinae N. Amer., p. 85, 96; MACKAUER, 1959. Beitr. Ent., 9, 1949; STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 248, 251 (Subgenus of *Trioxys* HALIDAY); MACKAUER, 1960. Beitr. Ent., 10, 138 (generic rank).

666 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Genotype: *Trioxyys (Acanthocaudus) tissoti* SMITH. (Orig. design.)
caudacanthus (SMITH). n. comb. N. America: U.S.A.

Trioxyys (Acanthocaudus) caudacanthus SMITH, 1944. Aphidiinae N. Amer., pp. 96, 97—98. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 97; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 581.

Host: *Macrosiphum erigeroneensis* (THOS.), *M. gravicornis* PATCH.
**schlingeri* (MUESEBECK). n. comb. N. America: Canada (Br. Columbia).

Trioxyys (Acanthocaudus) schlingeri MUESEBECK, 1958. Ent. News, 69, 144. ♀♂. Biological note: SCHLINGER & HALL, 1958. Ann. ent. Soc. Amer., 53, 411.

Host: *Macrosiphum ambrosiae* (THOS.) (MUESEBECK, 1958).
tissoti (SMITH). n. comb. N. America: U.S.A.

Trioxyys (Acanthocaudus) tissoti SMITH, 1944. Aphidiinae N. Amer., p. 96, 97. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 97; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 581.

Genus *Aclitus* FOERSTER

Aclitus FOERSTER, 1862. Verh. Naturh. Ver. Rheinl., 19, 248; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, 185; STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 55 (in key to genera); STARÝ, 1959. Beitr. Ent., 9, 18 (revision; generic characters); NARAYANAN et al., 1960. Beitr. Ent., 10, 2 (in key to genera).

Type: *Aclitus obscuripennis* FOERSTER, 1862. (Orig. design.)
**obscuripennis* FOERSTER. Europe: Germany.

Aclitus obscuripennis FOERSTER, 1862. Verh. Naturh. Ver. Rheinl., 19, 248; STARÝ, 1959. Beitr. Ent., 9, 185—187. ♀ (description of type).

Genus *Areopraon* MACKAUER

Praon HALIDAY, 1833 (partim).

Areopraon MACKAUER, 1959. Beitr. Ent., 9, 849, 854.

Genotype: *Praon lepellei* WATERSTON.

**lepellei* (WATERSTON). Europe: England; Sweden; Germany.

Praon lepellei WATERSTON, 1926. Ent. mon. Mag., 62, 237. ♀.

Areopraon lepellei (WATERSTON 1926), MACKAUER, 1959. Beitr. Ent., 9, 850—853; 855. ♀♂ (hosts, distribution).

Hosts: *Eriosoma lanigerum* (HAUSMANN) (WATERSTON, 1926);
E. ulmi (LINN.) (MACKAUER, 1959).

**pilosum* MACKAUER. Europe: Germany.

Areopraon pilosum MACKAUER, 1959. Beitr. Ent., 9, 853—854. ♀.

Genus *Calaphidius* MACKAUER

Calaphidius MACKAUER, 1961. Boll. Lab. Ent. agr. Portici, 19, 283.

Genotype: *Calaphidius elegans* MACKAUER. (Orig. design.)

**elegans* MACKAUER.

Europe: Germany.

Calaphidius elegans MACKAUER, 1961. Boll. Lab. Ent. agr. Portici, 19, 283—284. ♀.

*Genus *Diaeretellus* STARÝ

Aphidius NEES, auctt. (partim).

Diaeretus FOERSTER, auctt. (partim), STARÝ, 1959. Beitr. Ent., 9, 180.

Diaeretellus STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 243, 246.

Type: *Aphidius ephippium* HALIDAY, 1835.

ephippium (HALIDAY)

Europe: England; Sweden;
Czechoslovakia.

Aphidius ephippium HALIDAY, 1835. Ent. Mag., 2, 105. ♀; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 557. ♀♂; SZÉPLIGETI, 1944. Gen. Ins., fasc. 22a—b, 186; NARA YANAN et al., 1960. Beitr. Ent., 10, 14.

Diaeretus Ephippium (HALIDAY). STARÝ, 1959. Beitr. Ent., 9, 180 bis 183. ♀♂ (redescription of the apterous ♀; hitherto unknown winged ♂ described).

Diaeretellus ephippium (HALIDAY) STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 244.

**heinzei* (MACKAUER).

Europe: Germany.

Aphidius (Aphidius) heinzei MACKAUER, 1959. Dtsch. ent. Ztschr., 6, 83—85. ♀♂ (♀ as well as ♂ winged).

Diaeretellus heinzei STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 244 (transferred to *Diaeretellus* STARÝ).

**macrocarpus* MACKAUER.

Europe: Germany; Sweden.

Diaeretellus macrocarpus MACKAUER, 1961, Boll. Lab. Ent. agr. Portici, 19, 275—277. ♂♀.

Hosts: *Bacillaphis* sp., ?*Thripsaphis* sp., *Izyphyta ingegardae* HRL. (MACKAUER, 1961).

*Genus *Diaeretiella* STARÝ

Aphidius NEES, auctt. (partim).

Diaeretus FOERSTER, auctt. (partim).

Diaeretiella STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 243, 248, 249; STARÝ, 1961. Acta ent. Mus. nat. Pragae, 34, 383—384.

Type: *Aphidius rapae* M'INTOSH, 1855. Design. by STARÝ, 1960.

rapae (M'INTOSH).

Europe: Most countries.

N. America: U.S.A.; South Canada.

S. America: Argentina; Uruguay.
New Zealand.

Asia: Taiwan; Japan; Pakistan;
India.

- Aphidius rapae* CURTIS, 1855. In MACINTOSH, 1855. Book of the Garden, 2, 194. ♀; MACKAUER, 1961. Beitr. Ent., 11, 129.
- Trioxys piceus* CRESSON, Rept. U.S. Comm. Agr., Wash., 1879, p. 260. ♀♂.
- Lipolexis chenopodiaphidis* ASHMEAD, 1899. Proc. U.S. Nat. Mus., 11, 671. ♀♂.
- Aphidius brassicae* MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 597. ♀♂.
- Aphidius matricariae* HALIDAY, MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 592. ♀ (partim).
- Diaeretus californicus* BAKER, 1909. Pomona Journ. Ent., 1, 24. ♀.
- Diaeretus nipponensis* VIERECK, 1911. Proc. U.S. nat. Mus., 40, 182. ♂♀; NARAYANAN et al., 1960. Beitr. Ent., 10, 567.
- ?*Diaeretus obsoletus* KURDJUMOV, 1913. Rev. Russ. Ent., 13, 25; NARAYANAN et al., 1960. Beitr. Ent., 10, 567.
- Diaeretus napus* PÉREZ, 1931. Eos, 7, 71. ♀; NARAYANAN et al., 1960. Beitr. Ent., 10, 567.
- Diaeretus croaticus* PÉREZ, 1934. Eos, 10, 8. ♀; NARAYANAN et al., 1960. Beitr. Ent., 10, 567.
- Diaeretus rapae* (CURTIS), GAHAN, 1910. Proc. ent. Soc. Wash., 12, 180; SMITH, 1944. Aphidiinae N. Amer., p. 101, ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 97; SEDLAG, 1958. Trans. I. Int. Conf. Insect Path. biol. Contr. Praha 1958, p. 367—373 (bionomics); NARAYANAN et al., 1960. Beitr. Ent., 10, 567.
- Diaeretus plesiorapae* BLANCHARD, 1940. Rev. Chil. Hist. nat., 44, 45. ♀♂; NARAYANAN et al., 1960. Beitr. Ent., 10, 567.
- Aphidius affinis* PÉREZ, 1931. Eos, 7, 48—50. ♀♂ (syn. by STARÝ, 1961).
- Diaeretus aphidum* MUKERJI & CHATTERJEE, 1950. Proc. R. ent. Soc., London, (B) 19, 4. ♀♂; NARAYANAN et al., 1960. Beitr. Ent., 10, 566.
- Diaeretiella rapae* (M'INTOSH), STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 241, 243 (figures of forewing and propodeum of ♀; designated as genotype of *Diaeretiella* STARÝ, n. gen.); STARÝ, 1961. Acta ent. Mus. Nat. Pragae, 34, 384—390. ♀♂ (synonymy; distribution; hosts).

Hosts: *Aphis abbreviata* PATCH; *Calaphis betulaecolens* FITCH; *Brevicoryne brassicae* (LINN.); *Rhopalosiphum pseudo-brassicae* (DAVIS); *Myzus persicae* (SULZ.) (SMITH, 1944); *M. solanifolii* (ASHMEAD), *Myzus persicae* (SULZ.) (BLANCHARD, 1940); *Brachycolus noxius* (MORDV.), *Toxoptera*

graminum (ROND.) (KURDJUMOV, 1913); *Brevicoryne brassicae* (LINN.), *Greenidea ficicola* TAK. (VIERECK, 1911); *Pergandeida quilisi* G. FRESCA (PÉREZ, 1931); *Aphis* sp. (PÉREZ, 1934); *Hyalopterus atriplicis* (LINN.); *Euceraphis betulae* (KOCH); *Capitophorus* sp.

Genus *Diaeretus* HALIDA Y

Diaeretus FOERSTER, 1862. Verh. Naturh. Ver. Rheinl., 19, 249, 250.

Diaeretus auctt. (partim); *Aphidius* NEES, auctt. (partim).

Diaeretus STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 239, 248, 249 (redefinition of *Diaeretus* as a monotypic genus).

Type: *Aphidius leucopterus* HALIDA Y, 1835.

leucopterus (HALIDA Y). Europe: England; Czechoslovakia; Germany; France.

Aphidius leucopterus HALIDA Y, 1835. Ent. Mag., 2, 103. ♀♂.

Aphidius expectatus GAUTIER & BONNAMOUR, 1936. Bull. Soc. linn. Lyon, (N. S.) 5, 74. ♀; NARAYANAN et al., 1960. Beitr. Ent., 10, 14 (syn. by STARÝ, 1960). *Diaeretus leucopterus* STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 240—242. ♀♂ (fixation of a neotype; synonymy; host).

Host: *Schizolachnus pineti* (F.).

Genus *Dyscritulus* HINCKS

Revision: STARÝ, 1959. Acta faun. ent. Mus. Nat. Pragae, 3, 69—73.

planiceps (MARSHALL). Europe: England; Czechoslovakia.

Dyscritulus planiceps (MARSHALL), WINTER, 1947. Naturalist, London (1947), 93—94 (bionomics); HINCKS, 1958. Ent. mon. Mag., 94, 20 (host); STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 70—73. ♀♂ (first record from Czechoslovakia; host; bionomics).

Host: *Drepanosiphon platanoidis* (SCHRANK); pupation beneath parasitised alate aphid in separate cocoon.

pygmaeus MACKAUER. Europe: England.

Dyscritulus pygmaeus MACKAUER, 1961. Bull. Lab. Ent. agr. Portici, 19, 270—271. ♀.

Genus *Ephedrus* HALIDA Y

Revision of European species: STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 61—85.

Immature stages: IVANOVA-KASAS, 1956. Rev. Ent. U.S.S.R., 35, 245—261.

*Subgenus *Lysephedrus* STARÝ

Lysephedrus STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 55, 63, 64; STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 247, 250; MACKAUER, 1961. Beitr. Ent., 11, 99. (Subgenus of *Ephedrus* HALIDA Y).

Subgenotype: *Ephedrus validus* HALIDAY. (Orig. desig.)
validus (HALIDAY).

Europe: England; Sweden; Poland; Switzerland; Spain; Czechoslovakia; Ireland; U.S.S.R. (Ukraine); Austria.

Aphidius (Ephedrus) validus HALIDAY, 1833. Ent. Mag., 1, 485. ♀♂.
Ephedrus validus HALIDAY, MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 542. ♀♂; DALLA TORRE, 1898. Cat. Hym., 4, 16; SZÉPLI-GETI, 1904. Gen. Ins., fasc. 22a—b, p. 183; NIEZABITOWSKI, 1909. Spraw. Kom. Fizjogr. Krakow, 44, 53, ♂; WILKINSON, 1926. Cyprus agric. J., 21; FERRIÈRE, 1928. Mitt. Schweiz. ent. Ges., 14, 14; PÉREZ, 1931. Eos, 7, 16, ♀; PÉREZ, 1934. Eos, 10, 16, ♀♂; STELFOX, 1941. Proc. R. Irish Acad., 46 (B), 139—140, ♀♂; TELENGA, 1948. Trudi Inst. Zool. AN Ukr.S.S.R., 1; BÖRNER & HEINZE, 1957. In SORAUER, Handb. Pflanzenkrankh., 5/2; STELFOX, 1957. Ent. mon. Mag., 93, 91; FULMEK, 1957. Ann. naturh. Mus. Wien, 61, 146, 161, 179, 202, 210; NARAYANAN et al., 1960. Beitr. Ent., 10, 571.

Ephedrus (Lysephedrus) validus HALIDAY, STARÝ 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 63, 65—66. ♀♂ (synonymy, distribution, hosts; designation as type of subgenus *Lysephedrus* STARÝ).

Hosts: *Anuraphis farfarae* (KOCH), *Myzus cerasi* (F.) (MARSHALL, 1896); *Aphis fabae* SCOP., *Sappaphis mala* NEVS. (BÖRNER & HEINZE, 1957); *Brachycaudus helichrysi* KALT., *Sappaphis mali* FERR. (FULMEK, 1957); *Aphis rumicis* (LINN.) (WILKINSON, 1926).

Subgenus *Ephedrus* HALIDAY, s. str.

Subgenus *Ephedrus* HALIDAY, s. str., STARÝ 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 55, 66.

Subgenotype: *Bracon plagiator* NEES. Monotyp. (Designated as genotype of *Ephedrus* HALIDAY 1833 by HALIDAY, 1833).
aestivalis VIERECK. N. America: U.S.A.

Ephedrus aestivalis VIERECK, 1915. Calif. State Comn. Hort. Month. Bull., p. 286. ♀; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN et al., 1960. Beitr. Ent., 10, 568.

brevis STELFOX. Europe: Ireland.

Ephedrus brevis STELFOX, 1941. Proc. R. Irish Acad. 46 (B), 140—142. ♀♂; NARAYANAN et al., 1960. Beitr. Ent., 10, 569.

Ephedrus (Ephedrus) brevis STELFOX, STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 64, 67—68. ♀.

californicus BAKER. N. America: U.S.A.

Ephedrus californicus BAKER, 1909. Pomona Journ. Ent., 1, 23; SMITH, 1944. Aphidiinae N. Amer., p. 16, 17—18. ♀ (synonymy;

- hosts); MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 569.
- Ephedrus nevadensis* BAKER, 1909. Pomona Journ. Ent., 1, 23. ♀♂.
- Ephedrus nigricornis* GAHAN, 1911. Maryland agr. expt. Sta. Bull., 152, p. 159. ♀.
- Hosts: *Macrosiphum ambrosiae* (THOS.), *M. pisi* (KALTZ.), *M. rosae* (LINN.), *Macrosiphum* sp. on sunflower, *Rhopalosiphum grabhani* (CKLL.) (SMITH, 1944).
- **holmani* STARÝ. Europe: Czechoslovakia.
- Ephedrus (Ephedrus) holmani* STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 63, 68—70. ♀♂.
- Hosts: *Aphis fabae* SCOP.; *Brachycaudus helichrysi* KALTZ.; *B. lychnidis* LINN.
- impressus* GRANGER. Africa: Madagascar.
- Ephedrus impressus* GRANGER, 1949. Mem. Inst. Sci. Madagascar, 2 A, 412. ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 569.
- incompletus* (PROVANCHER). N. America: Canada; U.S.A.
- Perilitus incompletus* PROVANCHER, 1886. Addit. Faun. Ent. Canad. Hym., p. 126. ♂.
- Ephedrus incompletus* PROVANCHER, 1886. t. c., p. 156. ♀; SMITH, 1944. Aphidiinae N. Amer., p. 16, 18—20. ♀♂ (synonymy; hosts); MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 569.
- Scotioneurus dives* PROVANCHER, 1886. Addit. Faun. Ent. Canad. Hym., p. 157. ♂.
- Ephedrus rosae* WITHINGTON, 1909. Trans. Kansas Acad. Sci., 27, 318. ♀♀; GAHAN, 1911. Maryland agr. expt. Sta. Bull. 152, p. 159.
- Hosts: *Macrosiphum carpinicolens* PATCH, *M. dirhodum* (WALK.), *M. erigeronensis* (THOS.), *M. illini* M. & F., *M. lirodendri* (MON.), *M. rosae* (LINN.), *M. solanifolii* (ASHM.), *Microtarsus variabilis* PATCH. (SMITH, 1844).
- interstitialis* WATANABE.¹⁾ Asia: Japan.
- Ephedrus interstitialis* WATANABE, 1941. Ins. Mats., 15, 139. ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 569.
- Hosts: *Myzus mumecola* MATS.; *M. momonis* (MATS.)
- japonicus* ASHMEAD. Asia: Japan; China; Formosa.
- Ephedrus japonicus* ASHMEAD, 1906. Proc. U.S. Nat. Mus., 30, 187. ♀; WATANABE, 1941. Ins. Mats., 15, 136. ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 569.

¹⁾ STARÝ (1958) (Acta faun. ent. Mus. Nat. Pragae, 3, 81), has expressed the view that *interstitialis* WATANABE, is closely related to *pulchellus* STELFOX and *holmani* STARÝ and may, perhaps, be synonymous with *pulchellus*. The closeness is definitely discernible but the question of identity needs examination of the types.

672 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Hosts: *Amphicercidis japonicus* HORI, *Amphorophora magnoliae* (E. & K.), *Anuraphis mumei* H., *Aphis laburni* K., *A. rumicis* (LINN.), *Brachysiphoniella graminis* (TAK.), *Hyalopterus arundinis* (FABR.), *Macrosiphum avenae* (F.), *Macrosiphum rosae* (LINN.), *Prociphilus konoii* HORI.

lacertosus (HALIDAY).

Europe: Most countries.

N. America: Iceland.

Asia: India; China.

Aphidius (*Ephedrus*) *lacertosus* HALIDAY, 1833. Ent. Mag., 1, 486.

♀♂.

Ephedrus lacertosus HALIDAY, MARSHALL. 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 543. ♀♂; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 183; DOBROVLIANSKY, 1913. Kiev Ent. Sta. Publ.; RUDOW, 1915. Ent. Ztschr., 29, 22; MEIER, 1927. Repts. Bull. appl. Ent., 3; FERRIÈRE & VOUKASSOVITCH, 1928. Bull. Soc. ent. Fr., 1928; FAHRINGER, 1934. Ark. Zool., 27 A, 13; DILL, 1937. Mitt. Aargau naturf. Ges., 20; STELFOX, 1941. Proc. R. Irish Acad., 46 (B), 136—137, ♀♂; TELENGA, 1950. Nautsh. Trudi Inst. ent. phytopath. AN U.S.S.R., 2; PETERSEN, 1956. Zoology of Iceland, 3 (49—50), 43; BÖRNER & HEINZE, 1957. In SORAUER, Handb. Pflanzenkrankh. 5/2; FULMEK, 1957. Ann. naturh. Mus. Wien, 61, 148, 175, 179, 181, 187, 194, 202, 205, 213, 226 (hosts); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 570.

Ephedrus (*Ephedrus*) *lacertosus* HALIDAY, STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 64; 70—72 ♀♂ (synonymy, distribution, hosts).

Ephedrus (*Ephedrus*) *lacertosus* (HALIDAY 1833), SUBBA RAO & SHARMA, 1961. Indian J. Ent., 22, 232; MACKAUER, 1961. Beitr. Ent., 11, 99 (examination of ♂ holotype in Brit. Museum).

Hosts: *Aphis fabae* SCOP., *A. rumicis* LINN., *Cryptomyzus ribis* (LINN.), *Hyalopterus pruni* (GEOFF.), *Macrosiphon rosae* (LINN.), *Macrosiphoniella absinthii* LINN., *Medoralis pomi* (DE G.); *Myzus cerasi* (F.); *Ovatus crataegarius* (WALK.), *Rhopalosiphon padi* (LINN.), *R. oxycanthae* (SCHRK.), *Sappaphis mali* NEVS.

*var. *homostigma* FAHRINGER. Asia: China.

Ephedrus lacertosus HALIDAY, ab. n. *homostigma* FAHRINGER, 1934. Ark. Zool., 27 A, 13. ♂.

minor STELFOX. Europe: Ireland.

Ephedrus plagiator var. *minor*, STELFOX, 1941. Proc. R. Irish Acad., 46 (B), 135. ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 570.

Ephedrus minor STELFOX, 1944. Ent. mon. Mag., 80, 235—236. ♀♂ (a valid species, not variety as originally described); STARÝ, 1958.

- Acta faun. ent. Mus. Nat. Pragae, **3**, 64, 72—74. ♀♂.
muesebecki SMITH.¹⁾ N. America: U.S.A.
Ephedrus muesebecki SMITH, 1944. Aphidiinae N. Amer., p. 16, 20—21.
 ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN,
 SUBBA RAO & SHARMA, 1960. Beitr. Ent., **10**, 570.
 Host: *Amphorophora maxima* (MASON).
nacheri PÉREZ. Europe: Czechoslovakia.
Ephedrus nacheri PÉREZ, 1934. Eos, **10**, 17—19. ♀♂; NARAYANAN,
 SUBBA RAO & SHARMA, 1960. Beitr. Ent., **10**, 570.
Ephedrus (Ephedrus) nacheri PÉREZ, STARÝ, 1958. Acta faun. ent.
 Mus. Nat. Pragae, **3**, 64; 74—75 ♀♂ (English translation of PÉREZ's
 Spanish description).
 Host: *Hayhurstia atriplicis* (LINN.).
nitidus GAHAN. N. America: U.S.A.
Ephedrus nitidus GAHAN, 1917. Proc. U.S. Nat. Mus., **53**, 195. ♀;
 SMITH, 1944. Aphidiinae N. Amer., p. 16, 21. ♀; MUESEBECK &
 WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN, SUBBA RAO &
 SHARMA, 1960. Beitr. Ent., **10**, 570.
 Biological note: SCHLINGER & HALL, 1960. Ann. ent. Soc. Amer.,
53, 410 (new hostrecords).
 Hosts: *Myzus cerasi* (F.), *M. persicae* (SULZ.); *Macrosiphum*
solanifolii ASHMEAD (SMITH, 1944); *Aphis gossypi* GLOV.,
Aphis sp. (SCHLINGER & HALL, 1960).
 **palaestinensis* MACKAUER. Middle East: Israel.
Ephedrus (Ephedrus) palaestinensis MACKAUER, 1959. Beitr. Ent., **9**,
 867—868. ♀♂.
 Hosts: *Rhopalosiphum maidis* (FITCH), *R. ?padi* (LINN.) (MAK-
 KAUER, 1959).
picticornis STELFOX. Europe: Ireland; England.
Ephedrus picticornis STELFOX, 1941. Proc. R. Irish Acad., **46** (B), 138.
 ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., **10**,
 570.
Ephedrus (Ephedrus) picticornis STELFOX, STARÝ, 1958. Acta faun.
 ent. Mus. Nat. Pragae, **3**, 64; 75—76. ♀♂ (STELFOX's description).
plagiator (NEES). Europe: Most countries.
 N. America: Iceland.
Bracon plagiator NEES, 1811. Mag. Ges. naturf. Freunde Berlin, **5**, 17.
 ♀♂.
Aphidius (Ephedrus) plagiator NEES, HALIDAY, 1833. Ent. Mag., **1**, 486.

¹⁾ This species appears to be very closely related to, if not actually synonymous with, *lacertosus* (HALIDAY), particularly in respect of the unusually long first flagellar segment, and the venation of the forewing. However, SMITH has not given a figure of the female genitalia of *E. muesebecki*, which would have been another important clue to the identity or discreteness of these two species.

674 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Aphidius parvicornis NEES, 1834. Hym. Ichn. aff. Monogr., 1, 16. ♀♂.
Ephedrus plagiator NEES, WESTWOOD, 1840. Mod. Class. Ins., 2, 65;
 MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 543—544.
 ♀♂; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 183; NIEZABI-
 TOWSKI, 1909. Spraw. Kom. Fiziogr. Krakow, 44, 53; RUDOW, 1915.
 Ent. Ztschr., 29, 22; MEIER, 1927. Repts. Bur. appl. Ent. Leningr.,
 3, 79—91; SKRIPTSHINSKII, 1930. Repts. Bur. appl. Ent. Leningr.,
 4, 351—64; FILIPEV, 1930. Ann. Rept. State. Inst. expt. Agron.,
 Div. appl. Ent., Leningr. 1928—29, pp. 169—98; LINDROTH, 1931.
 Zool. Bidr., Uppsala, 13, 349; PÉREZ, 1934. Eos, 10, 16—17; STEL-
 FOX, 1941. Proc. R. Irish Acad., 46 (B), 134—135. ♀♂; TELENGA,
 1948. Trudi Inst. Zoologii AN Ukr. S.S.R. 1; PETERSEN, 1956. Zoo-
 ology Iceland, 3 (49—50), pp. 49—50; BÖRNER & HEINZE, 1957. In
 SORAUER, Handb. Pflanzenkrankh. 5/2; FULMEK, 1957. Ann. nat-
 urh. Mus. Wien, 61, 144, 148, 179, 198, 199, 213, 220, 221; NARA-
 YANAN, SUBBARAO & SHARMA, 1960. Beitr. Ent., 10, 570; STARÝ,
 Acta Soc. 1961. ent. Cechosl., 58, 230 (new host).

Ephedrus (Ephedrus) plagiator (NEES), STARÝ, 1958. Acta faun. ent.
 Mus. Nat. Pragmae, 3, 64, 76—79. ♀♂ (synonymy; distribution;
 hosts).

Hosts: *Aphis evonymi* FAB.; *A. fabae* SCOP.; *Acyrtosiphon cara-*
ganae CHOLD.; *A. onobrychis* B. DE FONSC.; *Cavariella*
archangeliae (SCOP.); *C. aegopodii* (SCOP.); *Dactynotus*
cichorii (KOCH); *Dysaphis devector* (WALK.); *Hyalopterus*
pruni (GEOFFR.); *Hyperomyzus lactucae* (LINN.); *Hypero-*
myzus sp.; *Macrosiphoniella absinthii* (LINN.); *Medoralis*
pomi (DEG.); *Pergandeida medicaginis* (KOCH); *Phorodon*
humuli (SCHRK.); *Rhopalosiphon nymphæae* (LINN.);
Rhopalosiphon padi (LINN.); *Schizoneura ulmi* (LINN.);
Sitobium avenae (F.); *Sitobium granarium* (KBY.); *Sito-*
bium sp. (STARÝ, 1958); *Asiphon tremulae* (LINN.)
 (STARÝ, 1961).

var. *nigra* GAUTIER, BONNAMOUR & GAUMONT.

Europe: France.

Ephedrus plagiator NEES var. *nigra* GAUTIER, BONNAMOUR & GAU-
 MONT. Bull. Soc. ent. France 1929, 200—201. ♀; STARÝ, 1958. Acta
 faun. ent. Mus. Nat. Pragmae, 3, 570. ♀; NARAYANAN, SUBBA RAO
 & SHARMA, 1960. Beitr. Ent., 10, 570.

Host: *Pyrethromyzus sanborni* (GILLETT).

pulchellus STELFOX.

Europe: Ireland; Czechoslovakia.

Ephedrus (Ephedrus) vidali QUILIS, STARÝ, 1958. Acta faun. ent. Mus.
 Nat. Pragmae, 3, 81—82. ♀ (English translation of PÉREZ's Spanish
 description).

Ephedrus (Ephedrus) pulchellus STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, **3**, 79—81. ♀♂ (hosts; first record from Czechoslovakia).

Hosts: *Sappaphis mali* (FERR.) (BEIRNE, 1942); *Brachycaudus helichrysi* (KALTZ.), *Dysaphis devectora* (WALK.), *Myzus cerasi* (F.) (STARÝ, 1958).

Species of *Ephedrus* unsatisfactorily described
aphidivora (RONDANI). Europe: Italy.

Alysia aphidivora RONDANI, 1848. Nuov. Ann. Sci. nat., Bologna.

Ephedrus aphidivorus (RONDANI), STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, **3**, 82—83 (as an unrecognized species of *Ephedrus HALIDAY*).

brevicornis (NEES). Europe: Germany.

Aphidius brevicornis NEES, 1834. Hym. Ich. aff. Monogr., **1**, 17. ♀.

Ephedrus brevicornis (NEES). MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg. **5**, 545. ♀ (after NEES' description); SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 183; STELFOX, 1941. Proc. R. Irish Acad., **46** (B), 125; STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, **3**, 83. (NEES' Latin description quoted; as an unrecognized species of *Ephedrus*); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., **10**, 569.

laevicollis (THOMSON). Europe: Sweden; ? Austria.

Aphidius (Elassus) laevicollis THOMSON, 1895. Opusc. ent., p. 2332. ♀♂.

Ephedrus laevicollis THOMSON, DALLA TORRE, 1898. Cat. Hym., **4**, 16; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, 183; STELFOX, 1941. Proc. R. Irish Acad., **46** (B), 126; FULMEK, 1957. Ann. naturh. Mus. Wien, **61**, 148, 161; STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, **3**, 83—84.

Host: *Brachycaudus helichrysi* KALTZ. (FULMEK, 1957 from Austria).

*Genus *Harkeria* CAMERON

Harkeria CAMERON, 1900. Ann. Mag. nat. Hist., **6**, 537; MACKAUER, 1961. Beitr. Ent., **11**, 138.

Genotype: *Harkeria rufa* CAMERON, 1900. Monotyp.

**rufa* CAMERON. Europe: England.

Harkeria rufa CAMERON, 1900. Ann. Mag. nat. Hist., **6**, 538. ♀; MACKAUER, 1961. Beitr. Ent., **11**, 138—140. ♀ (redescription from type in Brit. Mus. nat. Hist., London).

Genus *Lipolexis* FOERSTER

Lipolexis FOERSTER, 1862. Verh. Naturh. Ver. Rheinl., **19**, 249; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 189; STARÝ, 1958. Acta faun. ent. Mus.

676 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Nat. Pragae, **3**, 57 (in key to genera); STARÝ, 1959. Acta Soc. ent. Cechosl., **56**, 93—96 (validity, and characters); STARÝ, 1960. Acta Soc. ent. Cechosl., **57**, 248 (in key to genera).

Genotype: *Lipolexis gracilis* FOERSTER. (Orig. design.)

„*Diaeretus* FOERSTER“, auctt.

Gynocryptus PÉREZ, 1931. Eos, **7**, 26.

Genotype: *Gynocryptus pieltaini* PÉREZ. (Orig. design.)

**gracilis* FOERSTER.

Europe: Germany; Czechoslovakia

Lipolexis gracilis FOERSTER, 1862. Verh. Naturh. Ver. Rheinl., **19**, 249. ♀♂; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, 189; STARÝ, 1959. Acta Soc. ent. Cechosl., **56**, 94—96. ♀♂ (first record from Czechoslovakia; hosts); STARÝ, 1961. Acta Soc. ent. Cechosl., **58**, 229 (new hosts; synonymy with *Gynocryptus pieltaini* PÉREZ).

Gynocryptus pieltaini PÉREZ, 1931. Eos, **7**, 27—28. ♀♂ (syn. by STARÝ, 1961).

Hosts: Unidentified aphids on *Cirsium* sp., *Brachycaudus cardui* (LINN.), *Pergandeida (Doralida) intybi* (KOCH.) (STARÝ, 1959); *Brachycaudus mordwilkoii* HRL., *Toxopterina taraxacicola* (BÖRNER), *Toxopterina* sp. (STARÝ, 1961).

oregmae (GAHAN).

Asia: Philippines.

Diaeretus oregmae GAHAN, 1932. Ann. ent. Soc. Amer., **25**, 736—737.

♀; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., **10**, 567.

Lipolexis oregmae (GAHAN), STARÝ, 1960. Ins. Mats., **23**, 109—111. ♀ (redescription from paratype females).

Host: *Oregma lanigera* ZEHNTNER.

Genus *Lysaphidus* SMITH¹)

Lysaphidus SMITH, 1944. Aphidiinae N. Amer., p. 35; 72 (subgenus of *Aphidius* NEES); STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, **3**, 9 (subgenus of *Aphidius* NEES; in key to genera); STARÝ & SEDLAG, 1959. Dtsch. ent. Ztschr., (N. F.) **6**, 164 (subgenus of *Aphidius* NEES; in key to subgenera of *Aphidius*); STARÝ, 1960. Acta Soc. ent. Cechosl., **57**, 248 (generic rank; in key to genera of Aphidiidae); MACKAUER, 1961. Beitr. Ent., **11**, 109, 112 (subgenus of *Aphidius* NEES s. l.).

Genotype: *Aphidius (Lysaphidus) adelocarinus* SMITH, 1944. (Orig. design.)

adelocarinus (SMITH). n. comb.

N. America: U.S.A.

Aphidius (Lysaphidus) adelocarinus SMITH, 1944. Aphidiinae N. Amer., p. 72, 73—74. ♀♂.

Hosts: *Capitophorus glandulosus* (KLTB.); *Pseudoepameibaphis glauca* G. & P.; *P. xenotrichus* K. & S.

**arvensis* STARÝ.

Europe: Czechoslovakia.

¹) A number of *Aphidius* spp. belong to this genus (e. g. *A. chrysanthemi* MARSHALL, *A. platensis* BRÉTHES, etc.).

Lysaphidus arvensis STARÝ, 1960. Bull. ent. Pologne, **30**, 359—360.
♀♂.

Host: *Coloradoa achilleae* HRL. (STARÝ, 1960).

**erysimi* STARÝ. Europe: Czechoslovakia.

Lysaphidus erysimi STARÝ, 1960. Bull. ent. Pologne, **30**, 362—363.
♀♂.

Host: *Lipaphis erysimi* (KALT.) (STARÝ, 1960).

multiarticulatus (ASHMEAD) n. comb. N. America: U.S.A.

Lysiphlebus multiarticulatus ASHMEAD, 1889 (1888). Proc. U.S. Nat. Mus., **11**, 664. ♂.

Aphidius (*Lysaphidus*) *multiarticulatus* SMITH, 1944. Aphidiinae N. Amer. p. 73, 74—75. ♂.

ramithyrus (SMITH) n. comb. N. America: U.S.A.

Aphidius (*Lysaphidus*) *ramithyrus* SMITH, 1944. Aphidiinae N. Amer., p. 73, 75. ♀♂.

Host: *Capitophorus gregarius* KNOWLTON.

rosaphidis (SMITH) n. comb. N. America: U.S.A.

Aphidius (*Lysaphidus*) *rosaphidis* SMITH, 1944. Aphidiinae N. Amer., p. 73, 75—76. ♀♂.

Hosts: *Capitophorus* sp., *C. potentillae* (WALKER).

**schimitscheki* STARÝ. Europe: East Germany.

Lysaphidus schimitscheki STARÝ, 1960. Bull. ent. Pologne, **30**, 358, 363—365. ♀♂.

Host: *Elatobium abietinum* (WALKER) (STARÝ, 1960).

Genus *Lysiphlebus* FOERSTER

Lysiphlebus FOERSTER, 1862. Verh. Naturh. Ver. Preuss. Rheinl., **19**, 248, 250.

Type: *Aphidius dissolutus* (NEES sensu FOERSTER, 1862) see STARÝ, 1961, Acta faun. ent. Mus. Nat. Pragae, **7**, 138—140.

Adialytus FOERSTER, 1862. Verh. Naturh. Ver. Preuss. Rheinl., **19**, 249, 250.

Type: *Adialytus tenius* FOERSTER. (Orig. design.)

Aphidaria PROVANCHER, 1888. Addit. Corr. Faune Ent. Canada, p. 396.

Type: *Aphidaria basilaris* PROVANCHER (Orig. design.)

Platycyphus MACKAUER, 1960. Beitr. Ent., **10**, 590—591, 617 (subgenus of *Lysiphlebus* FOERSTER).

Type: *Lysiphlebus* (*Platycyphus*) *macrocornis* MACKAUER. (Orig. design.)

Lysiphlebus FOERSTER 1862, subgenus *Lysiphlebus* FOERSTER 1862 s. str., MACKAUER, 1960. Beitr. Ent., **10**, 594, 617.

ambiguus (HALIDA Y). Europe: England; Spain; Italy; Germany; France.

Asia: Israel.

Aphidius (*Aphidius*) *ambiguus* HALIDA Y, 1834. Ent. Mag., **2**, 104. ♀.

678 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Aphidius cardui MARSHALL, 1896. (partim). Spec. Hym. Eur. Alg., 5, 593, ♀♂.

„*Aphidius (Lysiphlebus) janinii* QUILIS 1930“, GOLDANICH, 1933. Boll. Lab. Ent. Bologna, 6, 211.

„*Lysiphlebus fabarum* MARSHALL“ (partim), PÉREZ, 1934. Eos, 10, 5.
Lysiphlebus (Lysiphlebus) ambiguus (HALIDAY 1834), MACKAUER, 1960. Beitr. Ent., 10, 595—598, 617. ♀♂ (redescription, synonymy, hosts, and distribution).

Lysiphlebus ambiguus (HALIDAY), STARÝ, 1961. Acta faun. ent. Mus. Nat. Pragae, 7, 132 (Czechoslovakia, hosts).

Hosts: *Aphis farinosa* GMELIN; *A. praeterita* WALKER; *A. ruborum* (BOERNER); *A. vaccinii* BOERNER; aphids on *Ribes* sp.; aphids on *Salix alba* (MACKAUER, 1961). *Aphis farinosa* GMELIN; *Aphis urticata* (F.); *Aphis fabae* SCOP.; *Aphis podagrariae* SCHRK.; *Hydaphis* sp. (STARÝ, 1961).

arvicola STARÝ.

Europe: Czechoslovakia.

Asia: U.S.S.R.-Tajikistan.

Lysiphlebus arvicola STARÝ, 1961. Bull. ent. Pologne, 31, 98—100. ♀♂; STARÝ, 1961. Acta faun. ent. Mus. Nat. Pragae, 7, 132.

Host: *Rungia* sp.

dissolutus (NEES 1811) sensu FOERSTER 1862.

Europe: Germany; Czechoslovakia; England; Sweden; Hungari.

Bracon dissolutus NEES, 1811. Berl. Magaz., 5, 29.

Aphidius dissolutus (NEES), NEES, 1834. Hym. Ich. aff. Monogr., 1, 23. ♀♂.

Lysiphlebus dissolutus (NEES), FOERSTER, 1862. Verh. Naturh. Ver. Preuss. Rheinl., 19, 248 (as type of *Lysiphlebus*).

Lysiphlebus dissolutus (NEES), SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 188.

Lysiphlebus (Lysiphlebus) dissolutus (NEES) MACKAUER, 1960. Beitr. Ent., 10, 618 (NEES 1811 Latin description; „species dubia“).

**Lysiphlebus (Ptatycyphus) macrocornis* MACKAUER, 1960. Beitr. Ent., 10, 590, 591—594, 617. ♀♂ (synon. by STARÝ, 1960).

Host: Aphids on *Ranunculus acer* L. (HALIDAY, 1834).

Lysiphlebus dissolutus (NEES) sensu FOERSTER, 1862, STARÝ, 1961. Acta Soc. ent. Cechosl., 58, 229.

Host: *Anoecia corni* (F.).

Lysiphlebus dissolutus (NEES) sensu FOERSTER 1862, STARÝ, 1961. Acta faun. ent. Mus. Nat. Pragae, 7, 138—139 (redescription, notes, synonymy).

**distinctus* MACKAUER.

N. America: U.S.A.

„*Aphidius (Lysiphlebus) knowltoni*“ SMITH, 1944. Aphidiinae N. Amer., pp. 77, 80. ♀♂ (partim).

- Lysiphlebus (Lysiphlebus) distinctus* MACKAUER, 1960. Boll. Lab. Ent. agr. Portici, 18, 236—239, 251. ♀♂.
Host: „*Microsiphon orogonensis* on bud sage“ (SMITH, 1944).
In MACKAUER, 1960.
- delhiensis* (SUBBA RAO & SHARMA) n. comb. Asia: India.
Aphidius (Lysiphlebus) delhiensis SUBBA RAO & SHARMA, 1960. Proc. Ind. Acad. Sci. Bangalore, 51, 82—83. ♀♂.
Host: „*Longiunguis sacchari* ZEHNT.“
- fabarum* (MARSHALL) s. l.¹⁾ Europe: England; Spain; France; Italy; Germany; Czechoslovakia.
Africa: Morocco.
Asia: Mongolia.
- Aphidius fabarum* MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 599—600. ♀♂.
- Aphidius cardui* MARSHALL, 1896, t. c., 593—594. ♀♂ (partim).
- Aphidius gomezi* PÉREZ, 1930. Boll. Pat. veg. ent. agric., 4, 44. ♀♂.
- Aphidius janinii* PÉREZ, 1930, t. c., 61, ♀♂.
- Lysiphlebus fabarum* (MARSHALL), WATANABE, 1949. Mushi (Fukuoka), 20, 43. ♀♂; STARÝ, 1961. Acta Soc. ent. Cechosl., 58, 230 (new host records); STARÝ, 1961. Acta faun. ent. Mus. Nat. Pragae, 7, 132—135 (new host records, Czechoslovakia).
- Lysiphlebus (Lysiphlebus) fabarum* (MARSHALL, 1896) s. l., MACKAUER, 1960. Beitr. Ent., 10, 598—604. ♀♂ (redescription; synonymy; hosts; distribution).
- Lysiphlebus fabarum* var. *inermis* PÉREZ, 1931. Eos, 7, 46. ♀.
- Lysiphlebus innovatus* PÉREZ, 1931. Eos, 7, 39. ♀♂.
- Lysiphlebus moroderi* PÉREZ, 1931. Eos, 7, 43. ♀♂.
- Lysiphlebus (Lysiphlebus) moroderi* MACKAUER, 1960. Beitr. Ent., 10, 611—612. ♀♂.
Hosts: *Aphis craccivora* KOCH; *A. fabae* SCOP.; *A. frangulae* KOCH; *A. gossypii* GLOVER; *A. hederæ* KALTB.; *A. jacobaeae* SCHRANK; *A. medicaginis* KOCH; *A. nasturtii* KALTB.; *A. nepetae* KALTB.; *A. plantaginis* SCHRANK; *A. pomi* DE GEER; *A. rumicis* LINN.; *A. tripolii* LAING; *A. urticae* GMELIN; *Toxoptera* sp.; *Rhopalosiphum maidis* (FITCH); *Brachycaudus* sp.; *B. cardui* (LINN.); *B. lychnidis* (LINN.); *B. prunicola* (KALTB.); *Appelia schwartzi* BOERNER; *A. tragopogonis* (KALTB.); *Dactynotus (Dactynotus) cirsii* (LINN.); *D. (D.) sonchi* (GEOFF.) (MACKAUER,

¹⁾ MACKAUER 1961 (Beitr. Ent., 11, 138) states that *fabarum* (MARSHALL 1896) is a species-group („Großart“) rather than a single species, consisting of bio-ecophysiological races. The same author (1960, Beitr. Ent., 10, 612—617) had also earlier stated this and also the fact that *fabarum* (MARSHALL) and *testaceipes* (CRESSION), formed two closely related groups of two „Großarten“ or species-groups.

1960). *Aphis* sp., *Brachycaudus* sp., *Aphis poterii* BOERNER, *Toxopterina lambersi* (BOERNER), *Protaphis carlinae* (BOERNER), *Toxopterina taraxacicola* (BOERNER), *T. vanderhooti* (BOERNER) (STARÝ, 1961). *Aphidula urticata* (F.), *Aphidula* sp., *Aphis evonymi* F., *Aphis fabae* SCOP., *Aphis rumicis* L., *Aphis* spp., *Appelia tragopogonis* (KALT.), *Brachycaudus cardui* (L.), *Brachycaudus rumicicolens* (PATCH), *Brachycaudus* sp., *Cerosipha polygonata* (NEVS.), *Cerosipha poterii* (NEVS.), *Cerosipha roepkei* HRL., *Cerosipha verbasci* (SCHRK.), *Cerosipha* sp., *Chomaphis* sp., *Hyperomyzus lactucae* (L.), *Paczoskia major* CB., *Pemphigus* sp., *Pergandeida intybi* (KOCH), *Pergandeida euphorbiae* (KALT.), *P. cytisorum* (HTG.), *P. craccivora* (KOCH), *P. salviae* (WALK.), *P.* spp., *Protaphis carlinae* (CB.), *Rhopalosiphon nymphaeae* (L.), *Sitobium avenae* (FABR.), *Toxopterina lambersi* (CB.), *T. plantaginis* (GOEZE), *T. taraxacicola* (CB.), *T. vanderhooti* CB. (STARÝ, 1961).

flavidus GAHAN.

N. America: U.S.A.

Lysiphlebus flavidus GAHAN, 1911. Bull. Maryland agric. expt. Sta. 152, p. 186. ♀.

Aphidius (*Lysiphlebus*) *flavidus*, SMITH, 1944. Aphidiinae N. Amer., p. 77, 79. ♀♂.

Lysiphlebus (*Lysiphlebus*) *flavidus*, MACKAUER, 1960. Boll. Lab. Ent. agr. Portici, 18, 239—240, 250.

Hosts: „*Aphis albipes* OEST.“ (GAHAN, 1911); „*Aphis debilicornis* G. & P.“ (SMITH, 1944).

fritzmuelleri MACKAUER.

Europe: Germany; Czechoslovakia; Hungary; eur. part of U.S.S.R.

Lysiphlebus (*Lysiphlebus*) *fritzmuelleri* MACKAUER, 1960. Beitr. Ent., 10, 604—605, 617. ♀.

Lysiphlebus fritzmuelleri MACKAUER, STARÝ, 1961. Acta faun. ent. Mus. Nat. Pragae, 7, 135 (host-rec., Czechoslovakia).

Host: *Aphis craccae* L. (MACKAUER, 1960; STARÝ, 1961).

fuscicornis (ASHMEAD).

N. America: Canada; U.S.A.

Lipolexis fuscicornis ASHMEAD, 1891. Canad. Ent., 23, 7. ♀.

Diaeretus fuscicornis GAHAN, 1911. Bull. Maryland agric. expt. Sta., 152, p. 191. ♀; SMITH, 1944. Aphidiinae N. Amer., p. 99, 100—101, ♀♂.

Lysiphlebus (*Lysiphlebus*) *fuscicornis* MACKAUER, 1960. Boll. Lab. Ent. agr. Portici, 18, 240—241, 251.

Hosts: *Aphis forbesi* WEED (SMITH, 1944) „ex root aphids on mangold“ (MACKAUER, 1960).

**hirticornis* MACKAUER.

Europe: Germany; Czechoslovakia

- Lysiphlebus (Lysiphlebus) hirticornis* MACKAUER, 1960. Beitr. Ent., 10, 606—608, 617. ♀♂.
- Lysiphlebus hirticornis* MACKAUER, STARÝ, 1961, Acta faun. ent. Mus. Nat. Pragae, 7, 135 (host-rec., Czechoslovakia).
Hosts: *Metopeurum fuscoviride* STROYAN (MACKAUER, 1960; STARÝ, 1961).
- **japonicus* ASHMEAD.¹⁾ Asia: Japan
Lysiphlebus japonicus ASHMEAD, 1906. Proc. U.S. Nat. Mus., 70, 190. ♀♂.
- knowltoni* (SMITH). N. America: U.S.A.
Aphidius (Lysiphlebus) knowltoni SMITH, 1944. Aphidiinae N. Amer., p. 77, 80—81. ♀♂.
Lysiphlebus (Lysiphlebus) knowltoni MACKAUER, 1960. Boll. Lab. Ent. agr. Portici, 18, 241—243; 251.
Hosts: „*Aphis* sp.; *A. artemisicola* WILLIAMS; *Macrosiphum acophorum* SMITH & KNOWLTON“ (SMITH, 1944).
- **laticephalus* (TELENGA). Asia: U.S.S.R. — Uzbekistan
Aphidius (Diaerelus) laticephalus TELENGA, 1953. Trudy Inst. Zool. Parasitol. AN Uzbekoi S.S.R., 1, 172—173. ♀♂.
Lysiphlebus laticephalus (TELENGA), STARÝ, 1961. Bull. ent. Pologne, 31, 102.
Host : „*Aphidae* on *Populus* sp.“
- **mackaueri* STARÝ. Europe: France
Lysiphlebus mackaueri STARÝ, 1961. Acta faun. ent. Mus. Nat. Pragae, 7, 141 (n. sp. for *Lysiphlebus (Lysiphlebus) innovatus* QUILIS 1931) sensu MACKAUER, 1960. Beitr. Ent., 10, 608—610.
Host : ? *Rhopalosiphum padi* (L.) (MACKAUER, 1960)
- **melandriicola* STARÝ Europe: Czechoslovakia
Lysiphlebus melandriicola STARÝ, 1961. Acta faun. Ent. Mus. Nat. Pragae, 7, 135—137. ♀♂.
Host : *Brachycaudus lychnidis* L. (STARÝ, 1961).
- salicaphis* (FITCH). N. America: U.S.A.
Trioxyx salicaphis FITCH, 1855 (1854). Trans. N.Y. State Agr. Soc., 14, 841.
Trioxyx populaphis FITCH, 1855 (1854). t. c., 841.
Lipolexis salicaphidis ASHMEAD, 1889 (1888). Proc. U.S. Nat. Mus., 11, 671. ♂♀.
Diaeretus salicaphis GAHAN, 1911. Bull. Maryland Agr. exp. Sta. 152, p. 191—192. ♂♀.; SMITH, 1944. Aphidiinae N. Amer., p. 99, 102. ♀♂.
Lysiphlebus (Lysiphlebus) salicaphis MACKAUER, 1960. Boll. Lab. Ent. agr. Portici, 18, 243—244; 251.

1) This is a member of another genus, related to *Lysiphlebus* FOERSTER.

682 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Biological note: SCHLINGER & HALL, 1960. Ann. ent. Soc. Amer., 53, 409 (as *Diaeretus salicaphis*).

Hosts: *Chaitophorus viminalis* MONELL, *Neothomasia populicola* (THOMAS) (SMITH, 1944); *Chaitophorus* sp. (MACKAUER, 1960).

tenuis (FOERSTER).

Europe: Germany.

Adialytus tenuis FOERSTER, 1862. Verh. naturh. Ver. preuss. Rheinl. 19, 249. ♀♂.

Adialytus tenuis STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 244—245. ♂ (redescriptions from 5 males in FOERSTER's collection).

Lysiphlebus tenuis (FOERSTER), STARÝ, 1961. Bull. ent. Pologne, 31, 102.

testaceipes (CRESSON)¹⁾

N. America: All U.S.A.; Bermuda; Hawaii.

Central America: Mexico; Haiti; Puerto Rico.

South America: Colombia; Brazil.

Africa: East Africa.

Aphidius (Lysiphlebus) chrysoaphidis SMITH, 1944. Aphidiinae N. Amer., p. 77, 78—79. ♀♂.

Hosts: See SMITH, 1944; MUESEBECK & WALKLEY, 1951, 1958; NARAYANAN et al., 1960; MACKAUER, 1960.

Biological note: SCHLINGER & HALL, 1960. Ann. ent. Soc. Amer., 53, 407—409.

**thelaxis* STARÝ.

Europe: Czechoslovakia.

Lysiphlebus thelaxis STARÝ, 1961. Bull. ent. Pologne, 31, 100—102. ♀♂.

Host: *Thelaxes* sp. (STARÝ, 1961).

utahensis (SMITH).

North America: U.S.A.

Aphidius (Lysiphlebus) utahensis SMITH, 1944. Aphidiinae N. Amer., p. 77, 83—84. ♀♂.

Lysiphlebus (Lysiphlebus) utahensis MACKAUER, 1960. Boll. Lab. agr. Portici, 18, 249—250, 251.

Host: *Macrosiphum coweni* (HUNTER).

Species dubiae of *Lysiphlebus* FOERSTER.

fuscatus (CRESSON).

N. America: Cuba.

Trioxyx fuscatus CRESSON, 1865. Proc. ent. Soc. Philadelphia, 4, 89. ♀.

Lysiphlebus fuscatus GAHAN, 1911. Bull. Maryland agr. exp. Sta. 152, p. 185. ♀.

¹⁾ The synonymy of this species has been given by SMITH (1944), MUESEBECK & WALKLEY (1957) and NARAYANAN et al. (1960). Only one new synonym is added here, as given by MACKAUER (1960) in his revision of the Nearctic species of *Lysiphlebus* FOERSTER.

- Aphidius (Lysiphlebus) fuscatus* SMITH, 1944. Aphidiinae N. Amer., p. 77; 79—80. ♀ (redescriptions from type and paratype, both ♀♀).
Lysiphlebus (Lysiphlebus) fuscatus MACKAUER, 1960. Boll. Lab. Ent. agr. Portici, 18, 252 (species dubia¹).
meridionalis ASHMEAD. N. America: St. Vincent. ?
Lysiphlebus meridionalis ASHMEAD, 1896. J. Linn. Soc. Lond., Zool., 25, 137. ♀.
 „*Lysiphlebus meridionalis* ASHMEAD 1896“, MACKAUER, 1960. Boll. Lab. Ent. agr. Portici, 18, 253 (species dubia²).
 **monilicornis* (THOMSON). Europe: Lappland (Finland?) (Sweden?)
Aphidius monilicornis THOMSON, 1895. Opusc. Ent., 20, 2338. ♂♀.
Aphidius monilicornis THOMSON, MARSHALL 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 334. ♂♀.
Aphidius monilicornis THOMSON 1895, MACKAUER, 1960. Boll. Lab. Ent. agr. Portici, 18, 619 (species dubia).
viburnaphis (FITCH). N. America: U.S.A.
Praon viburnaphis FITCH, 1855 (1854). Trans. N.Y. State agric. Soc., 14, 841. ♂.
Aphidius (Lysiphlebus) viburnaphis (FITCH), MUESEBECK & WALKLEY 1951. Syn. Cat. Hym. N. Amer., p. 96.
Lysiphlebus viburnaphis (FITCH 1855), MACKAUER 1960. Boll. Lab. Ent. agr. Portici, 18, 253—254 (species dubia).

Genus *Metaphidius* STARÝ & SEDLAG

- Metaphidius* STARÝ & SEDLAG, 1959. Dtsch. ent. Ztschr., (N.F.) 6, 160—61, 164 (as subgenus of *Aphidius* NEES); STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 248 (generic rank).
 Genotype: *Aphidius (Metaphidius) trioxyformis* STARÝ & SEDLAG. (Orig. design.)
trioxyformis (STARÝ & SEDLAG) n. comb. Europe: Austria.
Coelonotus aterrimus FAHRINGER, 1935. In SCHIMITSCHEK, 1935. Zbl. Forstw., 61, 215 (partim); FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, 3, 243 (partim).
Aphidius aterrimus FAHRINGER, 1936. In SEITNER, 1936. Zbl. Forstw., 62, 45—46 (? partim).
Aphidius (Metaphidius) trioxyformis STARÝ & SEDLAG, 1959. Dtsch. ent. Ztschr., (N.F.) 6, 161—63. ♀.
 Host: *Cinara nuda* (MORDW.).

¹) MACKAUER (t. c., 244, 252) keeps *fuscatus* CRESSON as a doubtful synonym of *testaceipes* CRESSON.

²) *meridionalis* ASHMEAD is also doubtfully placed as a synonym of *testaceipes* CRESSON, by MACKAUER, 1960 (t. c., 245).

Genus *Monoctonus* HALIDAY

Revision of European species: STARÝ, 1959. Acta Soc. ent. Cechosl., 56, 237—50.

Subgenus *Falciconus* MACKAUER

Monoctonus HALIDAY, subgenus *Falciconus* MACKAUER, 1959. Senck. biol. Frankf., 40, 180; STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 247, 250 (subgenus of *Monoctonus* HALIDAY).

Subgenotype: *Aphidius pseudoplatani* MARSHALL. (Orig. design.)
pseudoplatani (MARSHALL). Europe: England.

Aphidius constrictus HALIDAY, 1834. Ent. Mag., 2, 95. ♀♂. (preocc.)

Aphidius pseudoplatani MARSHALL, 1896. In ANDRÉ, Spec. Hym.

Eur. Alg., 5, 582. ♀♂ (n. n. for *constrictus* HALIDAY, preocc.)

Monoctonus (Falciconus) pseudoplatani (MARSHALL), MACKAUER, 1959. Senck. biol. Frankf., 40, 180.

Host: *Drepanosiphum acerinum* WALKER.

Subgenus *Monoctonus* HALIDAY, s. str.

Monoctonus HALIDAY, 1833. Ent. Mag., 1, 261, 487.

Monoctonus HALIDAY, subgenus *Monoctonus* s. str., STARÝ, 1959. Acta Soc. ent. Cechosl., 56, 238, 241—42.

Subgenotype: *Aphidius (Monoctonus) caricis* HALIDAY. Monotyp.
**breviantennalis* STARÝ. Europe: Czechoslovakia.

Monoctonus (Monoctonus) breviaantennalis STARÝ, 1959. Acta Soc. ent. Cechosl., 56, 238, 242—43. ♀♂.

caricis (HALIDAY). Europe: England; Sweden.

North America: Iceland.

Aphidius (Monoctonus) caricis HALIDAY, 1833. Ent. Mag., 1, 261, 481. ♀♂.; THOMSON, 1895. Opusc. ent., 20, 2334. ♀♂.

Monoctonus caricis HALIDAY, RUTHE 1859. Stettin. ent. Ztg., 20, 314. ♀♂; FOERSTER, 1862. Verh. Naturh. Ver. Rheinl., 19, 248;

MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 548. ♀♂;

DALLA TORRE, 1898. Cat. Hym., 4, 14; SZÉPLIGETI, 1904. Gen.

Ins., fasc. 22 a—b, 184; LINDROTH, 1931. Zool. Bidr. Uppsala, 13,

350; GIGJA, 1945. Syst. List Icel. Ins.; PETERSEN, 1956. Zool. Icel.

3, 42; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent.,

10, 37.

Monoctonus (Monoctonus) caricis (HALIDAY), STARÝ, 1959. Acta Soc. ent. Cechosl., 56, 238, 243—46. ♀♂; MACKAUER, 1961. Beitr. Ent.,

11, 141 (examination of types in British Museum).

Hosts: Undetermined aphids on *Carex*, on *Festuca pratensis* and on Gramineae (MARSHALL, 1896).

cerasi (MARSHALL). Europe: England; Germany.

Aphidius cerasi MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 507; ♂. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent.,

10, 556.

Monoctonus (Monoctonus) cerasi (MARSHALL), MACKAUER 1961. Beitr. Ent., 11, 141—43 (examination of type in British Museum; new host records from England and Germany).

Hosts: *Myzus cerasi* F. (MARSHALL, 1896); *Myzus ligustri* (MOSLEY), *Ovatus menthae* (BUCKT.), *Rhopalosiphum insertum* (WALK.), *R. padi* (LINN.), *Longiunguis pyramis* (PASS.) (MACKAUER, 1961).

crepidis (HALIDAY).

Europe: England; Belgium; Poland; ? France; Czechoslovakia.

Aphidius crepidis HALIDAY, 1834. Ent. Mag., 2, 94. ♀♂; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 581—82. ♀♂; DALLA TORRE, 1898. Cat. Hym., 4, 7; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, 186; NIEZABITOWSKI, 1909. Spraw. Kom. Fizyogr. Krakow, 44, 54; ? MALAQUIN & MOITIE, 1914. C. R. Soc. Biol. Paris, 86, 803—805; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 557.

Aphidius tuberculatus WESMAEL, 1835. Nouv. Mem. Acad. Sci. belg., 9, 80 (syn. by DALLA TORRE, 1898).

Monoctonus paludum MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 548—49. ♀; DALLA TORRE, 1898. Cat. Hym., 4, 15; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 184; NIEZABITOWSKI, 1909. Spraw. Kom. Fizyogr. Krakow, 44, 53. ♀; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 572 (syn. by STARÝ, 1959).

Monoctonus (Monoctonus) crepidis (HALIDAY), STARÝ 1959. Acta Soc. ent. Cechosl., 56, 238, 246—48. ♀♂ (synonymy, distribution, hosts); MACKAUER, 1961. Beitr. Ent., 11, 143 (synonymy with *Aphidius tuberculatus* WESMAEL and *Monoctonus paludum*; examination of types of *crepidis* HALIDAY and *paludum* MARSHALL in the British Museum).

Biology: GRIFFITHS, 1960. Bull. ent. Res., 51, 303—19 (as *M. paludum*).

Hosts: Aphids on *Cichorium intybus*, on *Crepis capillaris* L. and on *Lapsana communis* (MARSHALL, 1896); Aphids on *Hieracium silvaticum* and *Crepis tectorum* (NIEZABITOWSKI, 1909); ? *Aphis evonymi* F. (MALAQUIN & MOITIE, 1914); *Myzodesligustri* (MOSLEY), *Nasonovia nigra* HRL., *N. pilosellae* CB. (STARÝ, 1959); *Nasonovia ribis-nigri* (MOSLEY) (GRIFFITHS, 1960).

nervosus (HALIDAY).

Europe: England; Czechoslovakia.

Aphidius (Monoctonus) nervosus HALIDAY, 1833. Ent. Mag., 1, 488. ♀.

Monoctonus nervosus HALIDAY, WESTWOOD 1840. Introd. mod. Class. Ins., 2, 55; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 548. ♀; DALLA TORRE, 1898. Cat. Hym., 4, 15; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 184; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 571.

686 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

* *Monoctonus birói* GYÖRFI, 1958. Acta Zool. Hung., 4, 132, ♀.

Monoctonus (Monoctonus) nervosus (HALIDAY), STARÝ 1959. Acta Soc. ent. Cechosl., 56, 238, 248—49. ♀; MACKAUER, 1961. Beitr. Ent., 11, 143 (examination of the types in British Museum).

paulensis (ASHMEAD). North: America: U.S.A.

Aphidius paulensis ASHMEAD, 1902. Proc. Washington Acad. Sci., 4, 246. ♀♂.

Monoctonus paulensis (ASHMEAD), SMITH 1944. Aphidiinae N. Amer., p. 33—34. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 572.

Host: *Macrosiphum pisi* (KALTB.) (SMITH, 1944).

*Subgenus *Paramon octonus* STARÝ

Monoctonus HALIDAY, subgenus *Paramon octonus* STARÝ, 1959. Acta Soc. ent. Cechosl., 56, 238—39.

Subgenotype: *Monoctonus (Paramon octonus) angustivalus* STARÝ. (Orig. design.)

**angustivalus* STARÝ. Europe: Czechoslovakia.

Monoctonus (Paramon octonus) angustivalus STARÝ, 1959. Acta Soc. ent. Cechosl., 56, 238, 239—41. ♀♂.

Host: *Nasonovia nigra* HRL.

Doubtful species of *Monoctonus* HALIDAY

resolutus (NEES)¹). Europe: Germany.

Aphidius resolutus NEES, 1834. Hym. Ich. aff. Monogr., 1, 24—25. ♀♂; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 613. ♀ (as a doubtful species of *Aphidius*).

Ephedrus resolutus NEES, SZÉPLIGETI 1904. Gen. Ins., fasc. 22 a—b, p. 183.

? *Aphidileo resolutus* NEES, RONDANI, 1848. Nouvi Ann. Sci. Nat. Bologna, (2) 9, 14 (Genotype of *Aphidileo* RONDANI).

Monoctonus resolutus (NEES), STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 85; STARÝ, 1959. Acta Soc. ent. Cechosl., 56, 249—50 (as a doubtful species of *Monoctonus* HALIDAY); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 572.

secundus VIERECK.²) North America: U.S.A.

Monoctonus secundus VIERECK, 1915. Calif. State Comm. Hort. month. Bull., 4, 28. ♀♂; MUESEBECK & WALKLEY, 1951. Syn.

¹) This species has been treated as a synonym of *Trioxys pallidus* (HALIDAY) by MACKAUER, as would be seen from the section dealing with *T. pallidus* (p. 717 of this Catalogue).

²) SMITH (1944) makes no mention whatever of this species, either under the genus *Monoctonus* (t. c., p. 33) or in the list of Aphidiinae described from North America but known to SMITH (t. c., p. 103). However *M. secundus* is listed as a valid species by MUESEBECK & WALKLEY (1951).

Cat., p. 92; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 52.

*Genus *Paralipsis* FOERSTER

„*Aphidius* NEES“, auctt. (partim).

Paralipsis FOERSTER, 1862. Verh. Naturh. Ver. Rheinl., 19, 248; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 188; STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 56, 85 (generic characters, validity, synonymy); STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 248, 250.

Genotype: *Aphidius enervis* NEES. (Orig. design.)

Myrmecobosca MANEVAL, 1940. Bull. Soc. linn. Lyon, 9, 9; HINCKS, 1949. Ent. Tidskr., 70, 173; YASUMATSU, 1951. Rev. fr. Ent., 18, 172; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 2, 28.

Genotype: *Myrmecobosca mandibularis* MANEVAL. (Orig. design.)

**enervis* (NEES).

Europe: Germany; France; Sweden; Czechoslovakia; England.

Aphidius enervis NEES, 1834. Hym. Ichn. aff. Monogr., 1, 26. ♂; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 613—14. ♂ (under „espèces d'*Aphidius* douteuses“).

Paralipsis enervis (NEES), FOERSTER 1862. Verh. Naturh. Ver. Rheinl. 19, 248; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, 188; STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 86—88. ♀♂ (synonymy, distribution, host).

Myrmecobosca mandibularis MANEVAL, 1940. Bull. Soc. linn. Lyon, 9, 10—13. ♀; HINCKS, 1958. Ent. mon. Mag., 94, 20; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 28; PONTIN, 1960. Ent. mon. Mag., 95, 154.

Myrmecobosca linnei HINCKS, 1959. Ent. Tidskr., 70, 173. ♀; NARAYANAN, SUBBA RAO & SHARMA. Beitr. Ent., 10, 28.

Hosts: *Tetraneura ulmi* (LINN.) (HINCKS, 1949; PONTIN, 1960; STARÝ, 1961); *Forda formicaria* V. HEYD. (HINCKS, 1958; PONTIN, 1960; STARÝ, 1961); *Anoecia* sp. (PONTIN, 1960; STARÝ, 1961); *Anuraphis subterranea* (WALK.) (PONTIN, 1960; STARÝ, 1961); *Brachycaudus ballotae* (PASS.), *B. cardui* (LINN.), *Brachycaudus* sp., *Chromaphis* sp., *Forda marginata* KOCH, *Yezabura crataegi* (KALT.) (STARÝ, 1961).

eikoeae (YASUMATSU).

Asia: Japan.

Myrmecobosca eikoeae YASUMATSU, 1951. Rev. fr. Ent., 18, 172. ♀; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 28.

Paralipsis (= *Myrmecobosca*) *eikoeae* (YASUMATSU), STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, 3, 89.

Genus *Pauesia* PÉREZ

Aphidius NEES, 1818. Nov. Acta Acad. Leop. Carol., p. 302 (partim).

„*Coelonotus* FOERSTER, 1862“ (sensu auctt.).

„*Protaphidius* ASHMEAD, 1900“ (sensu auctt.: SMITH, 1944. Aphidiinae N. Amer., p. 37; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 547, 548 (as subgenus of *Aphidius* NEES).)

Paraphidius STARÝ, 1958. Acta faun. ent. Mus. Nat. Praegae, 3, 56, 91 (subgenus of *Aphidius* NEES); STARÝ, 1960. Acta faun. ent. Mus. Nat. Praegae, 6, 5—6 (generic rank); STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 248, 251 (generic rank; synonym with *Pauesia* PÉREZ).

Subgenotype: *Aphidius californicus* ASHMEAD. Orig. design. by STARÝ, 1958.

Pauesia PÉREZ, 1931. Eos, 7, 67; STARÝ, 1961. Acta ent. Mus. Nat. Praegae, 34, 22—23.

Genotype: *Pauesia albuferensis* PÉREZ. (Orig. design.)

abietis (MARSHALL).

Europe: England; Spain; Austria; Germany; Czechoslovakia.

Asia Minor: Turkey.

Aphidius abietis MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 565—66. ♀; DALLA TORRE, 1898. Cat. Hym., 4, 5; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 185; PÉREZ, 1931. Anal. Inst. nac. Valencia, 2^e ser., Hist. nat., 20, 21; SCHIMITSCHEK, 1936. Ztschr. ang. Ent., 22, 564; STARKE, 1956. Nat. Lusatica, 3, 91; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 554.

Coelonotus abietis (MARSHALL), FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, 3, 242. ♀; SCHIMITSCHEK, 1944. Forstins. Türkei u. ihre Umwelt, p. 284.

Paraphidius abietis (MARSHALL), STARÝ, 1958. Acta faun. ent. Mus. Nat. Praegae, 3, 7, 8—10. ♀♂ (synonymy, distribution, hosts).

Pauesia abietis (MARSHALL, 1896), MACKAUER, 1961. Beitr. Ent., 11, 106—107 (examination of type in British Museum).

Hosts: *Cinara pini* (LINN.) (MARSHALL, 1896; FAHRINGER, 1937); *Cinaropsis pilicornis* (HART.) (SCHIMITSCHEK, 1944); *Cinaria laticis* (WALK.) (STARÝ, 1958); ? *Schizolachnus pineti* (F.) (SCHIMITSCHEK, 1936); *Cinaria laticis* (WALK.) (STARÝ, 1960); ? „*Macrosiphum latucae* and *M. ulmariae*“ (PÉREZ, 1931).

albuferensis PÉREZ.

Europe: Spain.

Pauesia albuferensis PÉREZ, 1931. Eos, 7, 69—70. ♀; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 573; STARÝ, 1961. Acta ent. Mus. Nat. Praegae, 34, 23—24. ♀ (redescription of female holotype).

Host: „Pine aphids, probably *Lachnus pini*“ (PÉREZ, 1931).

- antennata* (MUKERJI) n. comb. Asia: Pakistan.
Aphidius antennatus MUKERJI, 1950. Indian J. agr. Sci., **33**. ♀.
Aphidius antennatus MUKERJI & CHATTERJI, 1950 (!), NARAYANAN,
 SUBBA RAO & SHARMA, 1960. Beitr. Ent., **10**, 554.
 Host: *Pterochlorus persicae* CHOLOD. (MUKERJI, 1950).
- basilewskyi* (BENOIT) n. comb. Africa: Belgian Congo.
Trioxys basilewskyi BENOIT, 1955. Ann. Mus. Cong. belg. Sci. Zool.,
36, 347. ♀; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent.,
10, 577.
Paraphidius basilewskyi (BENOIT), MACKAUER, 1960. Beitr. Ent.,
10, 159.
- bicolor* (ASHMEAD) North America: U.S.A.
Aphidius bicolor ASHMEAD, 1889 (1888). Proc. U.S. Nat. Mus., **11**,
 658. ♀.
Aphidius pinaphidis ASHMEAD, 1891. Canad. Ent., **23**, 6. ♂.
Aphidius (Protaphidius) bicolor ASHMEAD, SMITH, 1944. Aphidiinae
 N. Amer., p. 38, 39—40. ♀♂; MUESEBECK & WALKLEY, 1951.
 Syn. Cat., p. 92; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr.
 Ent., **10**, 548.
 Hosts: *Cinara strobis* (FITCH); *C. longispinosa* TISSOT, *C. pini*
 (LINN.); *C. australis* (ASHMEAD) (SMITH, 1944).
- californicus* (ASHMEAD). North America: U.S.A.
Aphidius californicus ASHMEAD, 1889 (1888). Proc. U.S. Nat. Mus.,
11, 660. ♀.
Aphidius (Protaphidius) californicus ASHMEAD, SMITH, 1944. Aphidi-
 inae N. Amer., p. 37, 40—41. ♀♂; MUESEBECK & WALKLEY, 1951.
 Syn. Cat., p. 92; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr.
 Ent., **10**, 548.
 Hosts: *Cinaria occidentalis* (DAVIDSON), *C. piniradiatae* DAVID-
 SON (SMITH, 1944).
- **chlorata* (TELENGA). Asia: Uzbek Republic (U.S.S.R.)
Aphidius chloratus TELENGA, 1953. Trudi Inst. Zool. parasit. AN
 Uzb. S.S.R., **1**, 171—72. ♀♂.
Paraphidius chloratus (TELENGA), STARÝ 1960. Acta faun. ent. Mus.
 Nat. Pragae, **6**, 35.
- **cupressobii* (STARÝ). Europe: Czechoslovakia.
Paraphidius cupressobii STARÝ, 1960. Acta faun. ent. Mus. Nat.
 Pragae, **6**, 8, 11—12, 35. ♀♂.
 Host: *Cupressobium juniperi* (DEG.) (STARÝ, 1960).
- gillettei* (GAHAN). North America: U.S.A.
Aphidius gillettei GAHAN, 1911. Bull. Maryland agr. expt. Sta. **152**,
 p. 171. ♀.
Aphidius (Protaphidius) gillettei GAHAN, SMITH, 1944. Aphidiinae
 N. Amer., p. 38, 41—42; MUESEBECK & WALKLEY, 1951. Syn.

690 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Cat., p. 93; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 548.

Paraphidius gillettei (GAHAN), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 35.

Host: *Lachnus* sp. on *Abies Zasiocarpa* (SMITH, 1944).

grossa (FAHRINGER).

Europe: Austria; Czechoslovakia.

Coelonotus grossus FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, 3, 244—45. ♀♂; FULMEK, 1957. Ann. naturh. Mus. Wien., 61, 223.

Aphidius (Protaphidius) grossus (FAHRINGER), NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 548.

Paraphidius grossus (FAHRINGER), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 6, 13—14, 35. ♀.

Hosts: *Todolachnus abieticola* (CHOLOD.) (FAHRINGER, 1937; FULMEK, 1957; STARÝ, 1960).

infulata (HALIDAY).

Europe: England; Austria; Northern Europe; U.S.S.R. (Ukraine); Czechoslovakia.

Aphidius infulatus HALIDAY, 1834. Ent. Mag., 2, 96. ♀♂; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 564—65. ♀♂; DALLA TORRE, 1898. Cat. Hym. 4, 8; SZÉPILGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 186; TELENGA, 1948. Trudi Inst. Zool. AN Ukr.S.S.R., 1, 155; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 560.

Coelonotus infulatus (HALIDAY), FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, 3, 241, 243; FULMEK, 1957. Ann. naturh. Mus. Wien, 61, 147, 149.

Paraphidius infulatus (HALIDAY), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 7, 14—16, 35. ♀♂ (synonymy; hosts).

? *Paraphidius albiflagellaris* STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 7, 10—11, 34. ♀.

Pauesia infulata (HALIDAY, 1834), MACKAUER, 1961. Beitr. Ent., 11, 107 (examination of type in British Museum; synonymy with *Paraphidius albiflagellaris* STARÝ).

Hosts: Species of Aphidae (FULMEK, 1957); *Laricaria kochiana* CB. (FAHRINGER, 1937); *Cupressobium juniperi* (DEG.) (STARÝ, 1960).

inouyei (WATANABE).

Asia: Japan.

Aphidius inouyei WATANABE, 1941. Ins. Mats., 15, 106. ♀♂.

Aphidius (Aphidius) inouyei WATANABE, NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 560.

Paraphidius inouyei (WATANABE), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 35.

Host: „*Cinara todocola* INOUYE“ (WATANABE, 1941).

- japonica* (ASHMEAD). Asia: Japan.
Aphidius japonicus ASHMEAD, 1906. Proc. U.S. Nat. Mus., 20, 189. ♂;
 WATANABE, 1938. Ins. Mats., 13, 83, ♀♂.
Coelonotus japonicus (ASHMEAD), FAHRINGER, 1937. Festschr. 60. Geb.
 E. STRAND, Riga, 3, 241.
Aphidius (*Protaphidius*) *japonicus* ASHMEAD, NARAYANAN, SUBBA
 RAO & SHARMA, 1960. Ent. Beitr., 10, 549.
Paraphidius japonicus (ASHMEAD), STARÝ, 1960. Acta ent. faun. Mus.
 Nat. Pragae, 6, 35
 Host: *Lachnus* (*Pterochlorus*) *tropicalis* V.D.GOOT. (WATANABE,
 1938).
- jezoensis* (WATANABE). Asia: Japan.
Aphidius jezoensis WATANABE, 1941. Ins. Mats., 15, 108. ♀♂.
Aphidius (*Aphidius*) *jezoensis* WATANABE, NARAYANAN, SUBBA RAO
 & SHARMA, 1960. Beitr. Ent., 10, 560.
Paraphidius jezoensis (WATANABE), STARÝ, 1960. Acta faun. ent. Mus.
 Nat. Pragae, 6, 35.
 Hosts: „*Cinara nopporoensis* INOUE, *Lachniella costata* ZETT.“
 (WATANABE, 1941).
- juniperaphidis* (GAHAN). North America: U.S.A.
Aphidius juniperaphidis GAHAN, 1911. Bull. Maryland agr. expt.
 Sta. 152, p. 174. ♀.
Aphidius (*Protaphidius*) *juniperaphidis* GAHAN, SMITH, 1944. Aphidi-
 diinae N. Amer., p. 39, 42–43. ♀♂; MUESEBECK & WALKLEY, 1951.
 Syn. Cat., p. 93; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr.
 Ent., 10, 549.
Paraphidius juniperaphidis (GAHAN), STARÝ, 1960. Acta faun. ent.
 Mus. Nat. Pragae, 6, 35.
 Hosts: *Cinara* sp. on juniper (GAHAN, 1911); *C. occidentalis*
 (DAVIDSON), *C. pulverulens* (G. & P.) (SMITH, 1944);
Lachnus sp. on *Juniperus sibiricus* (MUESEBECK, 1951).
- **juniperorum* (STARÝ). Europe: Czechoslovakia.
Paraphidius juniperorum STARÝ, 1960. Acta faun. ent. Mus. Nat.
 Pragae, 6, 8, 16–17, 35. ♀.
 Host: *Cupressobium juniperi* (DEG.) (STARÝ, 1960).
- kônoi* (WATANABE). Asia: Japan.
Aphidius kônoi WATANABE, 1941. Ins. Mats., 15, 106. ♂.
Aphidius (*Aphidius*) *kônoi* WATANABE, NARAYANAN, SUBBA RAO &
 SHARMA, 1960. Beitr. Ent., 10, 560.
Paraphidius kônoi (WATANABE), STARÝ, 1960. Acta faun. ent. Mus.
 Nat. Pragae, 6, 35.
 Host: *Cinara longipennis* MATS. (WATANABE, 1941).
- laricis* (ASHMEAD). Europe: England; Sweden; Austria
 Germany; Czechoslovakia.
 Asia: Japan.

692 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

- Aphidius laricis* HALIDAY, 1834. Ent. Mag., 2, 97. ♀♂; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 566—67. ♀♂; DALLA TORRE, 1898. Cat. Hym., 4, 9; SCHIMITSCHEK, 1936. Ztschr. ang. Ent., 22, 564; WATANABE, 1940. Ins. Mats., 15, 53—56. ♀♂ (distribution, hosts).
- Aphidius (Coelonotus) laricis* HALIDAY, THOMSON, 1895. Opusc. ent., 20, 2334—335. ♀.
- Coelonotus laricis* (HALIDAY), SZÉPLIGETI, 1904. Gen. Ins., fasc., 22 a—b, p. 185; FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, 3, 243—44. ♀♂; FULMEK, 1957. Ann. naturh. Mus. Wien., 61, 159, 173, 190.
- Aphidius (Protaphidius) laricis* HALIDAY, NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 549.
- Paraphidius laricis* (HALIDAY), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 7, 17—19, 35. ♀♂ (synonymy, distribution, hosts).
- Pauesia laricis* (HALIDAY, 1834), MACKAUER, 1961. Beitr. Ent., 11, 107—08 (examination of types in British Museum).
- Hosts: Aphids on *Larix* (MARSHALL, 1896); *Cinara* sp. (SCHIMITSCHEK, 1936); *Laricaria kochiana* CB. (FAHRINGER, 1937); *Cinaria laricis* (WALK.) (WATANABE, 1940); *Cinaria nuda* (MORDW.), and a species of Lachnidae on *Pinus silvestris* (STARÝ, 1960).
- laticeps* (GAHAN). Asia: Formosa.
- Aphidius laticeps* GAHAN, 1926. Proc. U.S. Nat. Mus., 70, 2. ♀; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 560.
- Paraphidius laticeps* (GAHAN), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 35.
- Host: „*Dilachnus* sp.“ (GAHAN, 1926).
- macrogaster* (ASHMEAD). North America: U.S.A.
- Aphidius macrogaster* ASHMEAD, 1891. Canad. Ent., 23, 5. ♀.
- Aphidius (Protaphidius) macrogaster* ASHMEAD, SMITH, 1944. Aphidiinae N. Amer., p. 38, 43. ♀; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 93; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 549.
- **maculolachni* (STARÝ). Europe: Czechoslovakia.
- Paraphidius maculolachni* STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 7, 19—20, 36. ♀♂.
- Host: *Maculolachnus submacula* (WALK.) (STARÝ, 1960).
- nigrovaria* (PROVANCHER). North America: U.S.A.
- Aphidius nigrovarius* PROVANCHER, 1888. Addit. Corr. Faune ent. Canada Hym., p. 396, ♀.
- Aphidius (Protaphidius) nigrovarius* PROVANCHER, SMITH, 1944. Aphidiinae N. Amer., p. 38, 43—44. ♀♂; MUESEBECK & WALKLEY, 1951.

Syn. Cat.; p.93, NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 549.

Paraphidius nigrovarius (PROVANCHER). STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 36.

Host: *Lachnus* sp. (GAHAN, 1911).

**piceaecollis* (STARÝ). Europe: Czechoslovakia.

Paraphidius piceaecollis STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 8, 20—22, 36. ♀♂.

Host: *Cinaria* sp. (STARÝ, 1960).

picta (HALIDAY). Europe: England; Sweden; Germany; Austria; Switzerland.

Aphidius pictus HALIDAY, 1834. Ent. Mag., 2, 85. ♀; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 563. ♀; DALLA TORRE, 1898. Cat. Hym., 4, 10; FERRIÈRE, 1928. Mitt. Schweiz. ent. Ges., 14, 14.

Aphidius (Coelonotus) pictus (HALIDAY), THOMSON, 1895. Opusc. ent., 20, 2334; SCHIMITSCHEK, 1936. Ztschr. ang. Ent., 22, 564; SCHIMITSCHEK, 1936. Zbl. Forstwes., 62, 115.

Coelonotus pictus (HALIDAY), SZÉPLIGETI 1904. Gen. Ins., fasc. 22 a—b, 185; FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, 3, 242. ♀; FULMEK, 1957. Ann. naturh. Mus. Wien, 61, 159, 173.

Aphidius (Protaphidius) pictus HALIDAY, NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 549.

Paraphidius pictus STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 7, 22—23, 36. ♀ (synonymy, distribution, hosts).

Pauesia picta (HALIDAY, 1834), MACKAUER 1961. Beitr. Ent., 11, 108 (examination of type in British Museum).

Hosts: Aphids on *Pinus silvestris* (MARSHALL, 1896); *Cinara pini* (LINN.) (FAHRINGER, 1937); *Cinaria cembrae* (CHOLOD.) (FAHRINGER, 1937); *C. nuda* (MORDW.) (STARÝ, 1960); *Cinaropsis cistata* (BUCKT.) (FAHRINGER, 1937); *C. pruinosa* (HART.) (FAHRINGER, 1937); ? *Macrosiphon rosae* (LINN.); ? *Nasonovia ribisnigri* (MOSL.) (FERRIÈRE, 1928); *Todolachnus abieticola* (CHOLOD.) (SCHIMITSCHEK, 1936).

pini (HALIDAY). Europe: England; Sweden; Spain; Austria; Germany; Czechoslovakia.

Asia: Japan.

Aphidius pini HALIDAY, 1834. Ent. Mag., 2, 96. ♀♂; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 566—67. ♀♂; DALLA TORRE, 1898. Cat. Hym., 4, 10; PÉREZ, 1931. Anal. Inst. nac. Valancia, 2^e ser., Hist. nat., 20, 22; SCHIMITSCHEK, 1935. Zbl.

694 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Forstwes., 61, 215; SEITNER, 1936. Zbl. Forstwes., 62, 46; SCHIMITSCHEK, 1936. Ztschr. ang. Ent., 22, 564; WATANABE, 1940. Ins. Mats., 15, 53—56. ♀♂.

Aphidius (Coelonotus) pini (HALIDAY), THOMSON 1895. Opusc. Ent., 20, 2334. ♀♂.

Aphidius (Protaphidius) pini HALIDAY, NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 549.

Coelonotus pini (HALIDAY), SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, 185; FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, 3, 243—44. ♀♂; WATANABE, 1941. Ins. Mats., 15, 109; FULMEK, 1957. Ann. naturh. Mus. Wien, 61, 159, 173, 190.

Paraphidius pini (HALIDAY), STARÝ, 1960. Acta faun. ent. Mus. Nat. Praeae, 6, 7, 23—26, 36. ♀♂ (synonymy, distribution, hosts).

Pauesia pini (HALIDAY, 1834), MACKAUER, 1961. Beitr. Ent., 11, 108 (examination of types in British Museum).

Aphidius lachnivorus ASHMEAD, 1906. Proc. U.S. Nat. Mus., 30, 189.

Aphidius (Aphidius) lachnivorus ASHMEAD, NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 560.

Paraphidius lachnivorus (ASHMEAD), STARÝ, 1960. Acta faun. ent. Mus. Nat. Praeae, 6, 35.

Hosts: *Lachnus* sp. (ASHMEAD, 1906); *Cinara* sp. on *Pinus silvestris* (MARSHALL, 1896; PÉREZ, 1931); *C. pini* (LINN.) (MARSHALL, 1896; SCHIMITSCHEK, 1936; FAHRINGER, 1937; WATANABE, 1941); *Cinaria cembrae* (CHOLOD.) (SEITNER, 1936); *C. laricis* (WALK.) (WATANABE, 1940); *C. nuda* (MORD.) (FAHRINGER, 1937; STARÝ, 1960); *C. taeniata* (KOCH) (FULMEK, 1957); *Cineropsis cistata* BUCKT. (FAHRINGER, 1937); *C. pruinosa* (HART.) (FULMEK, 1957); *Cupressobium juniperi* (DEG.); species of *Lachnidae* STARÝ, 1960).

**pinicollis* (STARÝ). Europe: East Germany.

Paraphidius pinicollis STARÝ, 1960. Acta faun. ent. Mus. Nat. Praeae, 6, 8, 26—27, 36. ♀♂.

Hosts: *Cinara pini* (LINN.), *Cinaria nuda* (MORD.) (STARÝ, 1960).

**ponderosae* (MUESEBECK). N. America: Canada (British Columbia)

Aphidius (Protaphidius) ponderosae MUESEBECK, 1958. Ent. News, 69, 141—143. ♀♂.

Paraphidius ponderosae (MUESEBECK), STARÝ, 1960. Acta faun. ent. Mus. Nat. Praeae, 6, 36.

Host: „*Cinara* sp. near *glabra* (G. & P.)“ (MUESEBECK, 1958).

prociphalis (ASHMEAD). N. America: U.S.A.

Aphidius procephali ASHMEAD, 1889 (1888). Proc. U.S. Nat. Mus., 11, 659. ♂.

- Aphidius (Protaphidius) procephali* ASHMEAD, SMITH, 1944. Aphidiinae N. Amer., p. 38, 44—45. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 93 (*prociphali*, emend.); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 549.
- Paraphidius prociphali* (ASHMEAD), STARÝ, 1960. Acta faun. ent. Mus. Nat. Praegae, 6, 36.
- Hosts: „*Procephalus* sp. on *Pinus inops*“ (ASHMEAD, 1889); *Cinara* sp. (SMITH, 1944).
- scorpinica* (SMITH). N. America: U.S.A.
- Aphidius (Protaphidius) scorpinicus* SMITH, 1944. Aphidiinae N. Amer., p. 38, 45—46. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 93; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 549.
- Paraphidius scorpinicus* (SMITH). STARÝ, 1960. Acta faun. ent. Mus. Nat. Praegae, 6, 36.
- **silvestris* (STARÝ). Europe: Czechoslovakia.
- Paraphidius silvestris* STARÝ, 1960. Acta faun. ent. Mus. Nat. Praegae, 6, 7, 29—31. ♀♂.
- Host: *Cinara* sp.
- **szepligetii* (STARÝ). Europe: Jugoslavia (Croatia).
- Aphidius bicolor* SZÉPLIGETI, 1898. Term. Füzet., 21, 395, 407. ♂; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 186; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 556 [preocc. by *Aphidius bicolor* ASHMEAD, 1889 = *Pauesia bicolor* (ASHMEAD)].
- Paraphidius szepligetii* STARÝ, 1960. Acta faun. ent. Mus. Nat. Praegae, 6, 31—33, 36. ♂ (new name for *bicolor* SZÉPLIGETI, preocc.; redescription of holotype ♂ in Hungarian Museum, Budapest).
- takomaensis* (SMITH). N. America: U.S.A.
- Aphidius (Protaphidius) takomaensis* SMITH, 1944. Aphidiinae N. Amer., p. 38, 46—47. ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 550.
- Paraphidius takomaensis* (SMITH), STARÝ, 1960. Acta faun. ent. Mus. Nat. Praegae, 6, 36.
- Host: „*Ex Cinara* sp. on spine“ (SMITH, 1944).
- unilachni* (GAHAN). Europe: France; Czechoslovakia; Sweden; Germany.
- Aphidius unilachni* GAHAN, 1926. Proc. U.S. Nat. Mus., 70, 1. ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 566.
- Paraphidius unilachni* (GAHAN), STARÝ, 1960. Acta faun. ent. Mus. Nat. Praegae, 6, 37.
- Host: „*Unilachnus* sp. on *Pinus*“ (GAHAN, 1926).
- Aphidius praevisus* GAUTIER & BONNAMOUR, 1936. Bull. Soc. linn. Lyon, 5, 74—75. ♀♂; FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, 3, 245; FULMEK, 1957. Ann. naturh. Mus. Wien,

696 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

61, 147; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 563.

Paraphidius praevisus (GAUTIER & BONNAMOUR), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 7, 27—29, 36. ♀♂ (distribution, hosts).

Hosts: Small aphids on pine (GAUTIER & BONNAMOUR, 1936); *Schizolachnus pineti* (F.).

variegata (SMITH). N. America: U.S.A.

Aphidius (*Protaphidius*) *variegatus* SMITH, 1944. Aphidiinae N. Amer., p. 39, 47—48. ♀; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 93; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 550.

Paraphidius variegatus (SMITH), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 37.

Hosts: „*Cinara hottesi* (G. & P.); *Lachnus* on *Abies lasiocarpa*“ (SMITH, 1944).

xanthothera (SMITH). N. America: U.S.A.

Aphidius (*Protaphidius*) *xanthotherus* SMITH, 1944. Aphidiinae N. Amer., p. 38, 48—49. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 93; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 550.

Paraphidius xanthotherus (SMITH), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 37.

Hosts: *Cinara carolina* TISSOT; *C. strobi* FITCH; *Cinara* sp. (SMITH, 1944).

Doubtful species of *Pauesia* PÉREZ

aterrima (FAHRINGER). Europe: Austria; ?Hungary.

Coelonotus aterrimus FAHRINGER, 1935. In SCHIMITSCHEK, 1935. Zbl. Forstw., 61, 215; SCHIMITSCHEK, 1936. Ztsch. ang. Ent., 22, 564; FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, 3, 243. ♂; FULMEK, 1957. Ann. naturh. Mus. Wien, 61, 172, 173.

Aphidius aterrimus (FAHRINGER), FAHRINGER, 1936. In SEITNER, Zbl. Forstw., 62, 45—46; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 555.

Paraphidius aterrimus (FAHRINGER), STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, 6, 33, 34 (as a doubtful species).

Hosts: *Cinara neubergi* (ARNH.) (SCHIMITSCHEK, 1935, 1936; FAHRINGER, 1937; FULMEK, 1957); *Cinara pini* (LINN.) (FULMEK, 1957); *Cinaria cembrae* (CHOLOD.) (FAHRINGER, 1936; FULMEK, 1957).

varia (NEES). Europe: Germany; ?Belgium; ?Rumania; Sweden; Austria.

Aphidius varius NEES, 1834. Hym. Ichn. aff. Monogr., 1, 21. ♀♂; ?WESMAEL, 1835. Nouv. Mem. Acad. Sci. Bruxelles, 9, 78. ♀;

?RATZBURG, 1852. Ichn. Forstins., **3**, 62; ?POLIZU, 1932. Bull. Mus. Inst. nat. Chisinau, **4**, 42, 44; ?TELENGA, 1950. Nautsh. Trudi Inst. ent. phytopath. AN Ukr.S.S.R., **2**, 203; STARÝ, 1960. Acta faun. ent. Mus. Nat. Pragae, **6**, 33—34 (as „nomen dubium“).
Aphidius (Coelonotus) varius NEES, THOMSON, 1895. Opusc. ent., **20**, 2335. ♀.

Coelonotus varius (NEES), SZÉPLIGETI 1904. Gen. Ins., fasc. 22a—b, p. 185; FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, **3**, 241—43. ♂♂; FULMEK, 1957. Ann. naturh. Mus. Wien, **61**, 159, 167, 174, 191, 194, 198.

Hosts: *Aphis* sp. (RATZBURG, 1852; FULMEK, 1957); *Cerosipha frangulae* (KALTB.) (FULMEK, 1957); *Cinaria taeniata* (KOCH) (FULMEK, 1957); *Cinaropsis pilicornis* (HART.) (FAHRINGER, 1937; FULMEK, 1957); *Macchiatiella rhamnii* (B. DE F.) (FULMEK, 1957); *Medoralis pomi* (DEG.) (POLIZU, 1932; FULMEK, 1957)

Genus *Praon* HALIDAY

Revision of European species: MACKAUER, 1959. Beitr. Ent., **9**, 810—65.

abjectum (HALIDAY).

Europe: England; France; Switzerland; Germany; Austria; Czechoslovakia; Sweden.

N. America: Greenland.

Aphidius (Praon) abjectus HALIDAY, 1833. Ent. Mag., **1**, 485. ♀.

Praon abjectum HALIDAY, MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., **5**, 534. ♀♂; PÉREZ, 1934. Eos, **10**, 15. ♀.

Praon abjectus (HALIDAY), SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 184; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., **10**, 573.

Praon abjectum (HALIDAY), MACKAUER, 1959. Beitr. Ent., **9**, 819—23, 856. ♀♂ (distribution, hosts); MACKAUER, 1961. Beitr. Ent., **11**, 101 (examination of types in British Museum).

Morphological note, hosts: GAUTIER & BONNAMOUR, 1932. Bull. Soc. ent. France, **37**, 99—100.

Hosts: (After MACKAUER, 1959, 820—22). Aphids on *Angelica silvestris* LINN.; aphids on *Avena sativa* LINN.; aphids on *Pirus malus* LINN.; aphids on *Ribes rubrum* LINN.; aphids on *Rosa* sp.; aphids on *Salix* sp.; aphids on *Sonchus oleraceus* LINN.; aphids on *Sorbus* sp.; *Acyrtosiphon scariolae* NEVSKY; *Aphis epilobii* KALTB.; *A. fabae* SCOP.; *A. sambuci* LINN.; ?*Nasonovia nigra* HRL.; *Semiaphis anthrisci* (KALTB.); *Sminthurodes betae* WESTW.

absinthii BIGNELL.

Europe: England; Germany.

Praon absinthii BIGNELL, 1894. Ent. mon. Mag., **30**, 255. ♀♂; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 184; MACKAUER 1959. Ent.

698 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Mag., 9, 823—24, 855. ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 573.

Hosts: *Macrosiphoniella absinthii* (LINN.) (BIGNELL, 1894); *M. sanborni* (GILLETTE) (MACKAUER, 1959).

aguti SMITH.

North America: U.S.A.

Praon aguti SMITH, 1944. Aphidiinae N. Amer., p. 23—24, ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 573.

Hosts: *Macrosiphum pisi* KALT., *M. rosae* L. and *M. solanifolii* ASHM. (SMITH, 1944).

alaskensis ASHMEAD.¹⁾

North America: U.S.A.

Praon alaskensis ASHMEAD, 1902. Proc. Wash. Acad. Sci., 4, 243. ♂; SMITH, 1944. Aphidiinae N. Amer., p. 22, 23—24. „♂“; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 573.

americanum (ASHMEAD). (emend.). North America: U.S.A.

Diaeretus americanus ASHMEAD, 1889 (1888). Proc. U.S. Nat. Mus., 11, 669. ♂.

Diaeretus brunneiventris ASHMEAD, 1889 (1888) Proc. U.S. Nat. Mus., 11, 670. ♂.

Diaeretus websteri ASHMEAD, 1889 (1888). Proc. U.S. Nat. Mus., 11, 670. ♂.

Praon americanus (ASHMEAD), GAHAN, 1911. Maryland agr. expt. Sta. Bull. 152, 166; SMITH, 1944. Aphidiinae N. Amer., p. 23, 25—26. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 573.

Host: *Rhopalosiphum prunifoliae* FITCH (SMITH, 1944).

artemisaphis SMITH.

North America: U.S.A.

Praon artemisaphis SMITH, 1944. Aphidiinae N. Amer., p. 23, 26. ♀; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 573.

Host: *Macrosiphum coweni* (HUNTER) (SMITH, 1944).

**bicolor* MACKAUER.

Europe: West Germany.

Praon bicolor MACKAUER, 1959. Beitr. Ent., 10, 824—25, 855. ♀♂.

Host: *Eulachnus agilis* (KALT.) (MACKAUER, 1959).

cerasaphis (FITCH).

North America: U.S.A.

Trioxys cerasaphis FITCH, 1855 (1854). Trans. N.Y. State agr. Soc., 14, 842. ♂.

Praon cerasaphis (FITCH), GAHAN, 1911. Maryland agr. expt. Sta. Bull. 152, p. 165. ♂; SMITH, 1944. Aphidiinae N. Amer., p. 32. ♂;

¹⁾ ASHMEAD's type of *Praon alaskensis* was a male. SMITH (1944) included *alaskensis* ASHMEAD in his key to North American species of *Praon*, based on females, but described only the male and stated that the female was unknown. However, he gave the figure of female genitalia of *alaskensis* ASHMEAD (t. c. Plate III, Fig. 27, p. 119).

MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 573.

Host: „A cherry aphid“ (FITCH, 1855).

coloradensis ASHMEAD.

North America: U.S.A.

Praon coloradensis ASHMEAD, 1890. Bull. Colorado biol. Assoc., 1, 20. ♂; SMITH, 1944. Aphidiinae N. Amer. p. 32. ♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 91; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 574.

dorsale (HALIDAY).

Europe: England; Sweden; Germany; Austria; Switzerland.

Aphidius (Praon) dorsalis HALIDAY, 1833. Ent. Mag., 1, 484. ♀.

Blacus discolor NEES, 1834. Hym. Ichn. aff. Monogr., 1, 192. ♀.

Praon discolor NEES, MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 540. ♀ (as a doubtful species of *Praon*).

Praon dorsale HALIDAY, MARSHALL 1896. In ANDRÉ, Spec. Hym. Eur. Alg. 5, 536. ♀.

Praon longicorne MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg. 5, 536. ♀♂; SUBBA RAO & SHARMA, 1961 (1960). Indian J. Ent., 22, 234. ♂ (syn. by MACKAUER, 1961).

?*Aphidius dorsalis* (HALIDAY), THOMSON, 1895. Opusc. ent., 20, 2333. ♀.

Praon dorsalis HALIDAY, SZÉPLIGETI 1904. Gen. Ins., fasc. 22a—b, p. 184.

Praon dorsale (HALIDAY, 1833), MACKAUER, 1959. Beitr. Ent., 9, 825—27, 855. ♀; MACKAUER, 1961. Beitr. Ent. 11, 102 (syn. with *P. longicorne* MARSHALL 1896, based on examination of types in British Museum).

Hosts: „*Siphonophora chelidonii* KALTENBACH“ (MARSHALL, 1896, for *P. longicorne*); *Dactynotus tussilaginis* (WALK.) (MACKAUER, 1959).

*n. sp. aff. *dorsale* (HALIDAY, 1833). MACKAUER, 1959

Europe: West Germany.

Praon n. sp. aff. *dorsale* (HALIDAY, 1833), MACKAUER, 1959. Beitr. Ent., 9, 827—28. ♀♂.

Host: *Cavariella umbellaratum* (KOCH) (MACKAUER, 1959).

exoletum (NEES). s. s.

Europe: Germany; England; Italy; Spain; U.S.S.R.

Bracon exoletus NEES, 1811. Mag. naturf. Ges. Berlin, 5, 30. ♀.

Aphidius exoletus NEES, NEES, 1818. Nov. Acta Acad. Leop.-Carol., 9, 302. ♀; NEES, 1834. Hym. Ichn. aff. Monogr., 1, 25. ♀♂.

Aphidius (Praon) exoletus ESS., HALIDAY, 1833. Ent. Mag., 1, 484. ♀♂.

Praon exoletum NEES, MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 536. ♀♂.

700 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Praon exoletum (NEES 1811) s. s., MACKAUER, 1959, Beitr. Ent., 9, 830—32; 855. ♀♂.

Praon exoletus NEES, NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 574.

Host: „*Therioaphis* sp. on *Ononis repens*“ (MACKAUER, 1959).
flavinode (HALIDAY). Europe: England; Germany; Austria; Italy; U.S.S.R.

Aphidius (Praon) flavinode HALIDAY, 1833. Ent. Mag., 1, 485. ♀.

Praon flavinode HALIDAY, MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 538. ♀; IVANOV, 1927. Ent. Mitt. Berlin, 16, 429.

Praon flavinodis HALIDAY, SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 184; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 574.

Praon flavinode (HALIDAY, 1833), MACKAUER, 1959. Beitr. Ent., 9, 833—37. ♀♂ (synonymy, distribution, hosts, variation); MACKAUER, 1961. Beitr. Ent., 11, 102—103.

Hosts: *Eucallipterus tiliae* (LINN.), *Macrosiphoniella absinthii* (LINN.) (MARSHALL, 1896); *Macrosiphum avenae* (F.) (IVANOV, 1927); *Aphis pomi* DE G., *Corylobium avellanae* (SCHR.), *Dactynotus cichorii* (KOCH), *D. jaceae* (LINN.); *Euceraphis punctipennis* (ZETT.); *Liosomaphis abietina* (WALK.); *Microlophium evansii* (THEOB.); *Siphonophora* sp., *Tuberculoides annulatus* (HART.) (MACKAUER, 1959).

humulaphidis ASHMEAD. North America: U.S.A.

Praon humulaphidis ASHMEAD, 1899 (1888). Proc. U.S. Nat. Mus., 11, 657. ♀; SMITH, 1944. Aphidiinae N. Amer., p. 23, 26—27. ♀; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92.

Host: „*Siphonophora* sp. on hops“ (ASHMEAD, 1899).

lemantinum GAUTIER. Europe: France; Germany.

Praon lemantinum GAUTIER, 1922. Bull. Soc. ent. France, 1922, p. 239. ♀♂; MACKAUER, 1959. Beitr. Ent., 9, 837—38, 856. ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 574.

Hosts: „Aphids on *Galeopsis tetrahit* L.“ (GAUTIER, 1922); *Cryptomyzus alboapicalis* (THEOB.); *C. galeopsidis* KALT. (MACKAUER, 1959).

**necans* MACKAUER. Europe: West Germany.

Praon necans MACKAUER, 1959. Beitr. Ent., 9, 839—41, 855. ♀♂.

Host: *Rhopalosiphum nymphaeae* (LINN.) (MACKAUER, 1959).

negundinis SMITH. North America: U.S.A.

Praon negundinis SMITH, 1944. Aphidiinae N. Amer., p. 23, 27—28. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 575.

Host: „*Periphyllus negundinis* THOMAS“ (SMITH, 1944).

- occidentalis* BAKER. North America: U.S.A.; Canada.
Praon occidentalis BAKER, 1909. Pomona J. Ent., 1, 23. ♀; SMITH, 1944. Aphidiinae N. Amer., p. 23, 28—29. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92; MACGILLIVRAY & SPICER, 1953. Canad. Ent., 85, 426 (hosts); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 575; SCHLINGER & HALL, 1960. Ann. ent. Soc. Amer., 53, 410 (biological note).
 Hosts: „*Macrosiphum pisi* KALTB., *Macrosiphum* sp.“ (SMITH, 1944); „*Macrosiphum solanifolii* (ASHMEAD), *Myzus persicae* (SULZER)“ (MACGILLIVRAY & SPICER, 1953); „*Macrosiphum rosae* (LINN.)“ (SCHLINGER & HALL, 1960).
- palitans* MUESEBECK. Asia: Middle East (Israel).
 Europe: France; Italy; Jugoslavia.
 North America: U.S.A. (introduced).
Praon palitans MUESEBECK, 1956. Bull. Brooklyn ent. Soc., 51, 27. ♀♂; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 575.
Praon exoletum palitans MUESEBECK 1956, MACKAUER 1959. Beitr. Ent., 9, 832—33, 855. ♀♂.
 Biology: VAN DEN BOSCH, SCHLINGER & DIETRICK, 1957. Calif. Agr., 11 (7), 11—12; SCHLINGER & HALL, 1959. Jour. econ. Ent., 52, 154—55; VAN DEN BOSCH, SCHLINGER, DIETRICK, HAGEN & HALL, 1960. Ann. ent. Soc. Amer., 53, 144—60.
 Hosts: *Therioaphis maculata* (BUCKT.) (VAN DEN BOSCH, et al., 1957); *T. rieghi* (BOERNER) (SCHLINGER & HALL, 1959); *T. trifolii* (MONELL) (MUESEBECK, 1956).
- **pubescens* STARÝ. Europe: Czechoslovakia.
Praon pubescens STARÝ, 1961, Acta Soc. ent. Cechosl., 58, 340—341, ♀♂.
 Host: *Nasonovia nigra* HRL. on *Hieracium silvaticum* L. (STARÝ, 1961).
- **rosaecola* STARÝ. Europe: Czechoslovakia.
Praon rosaecola STARÝ, 1961. Acta Soc. ent. Cechosl., 58, 341—343. ♀.
 Host: *Macrosiphum rosae* (L.) on *Rosa* spp. (STARÝ, 1961).
- simulans* (PROVANCHER).¹⁾ North America: Canada; U.S.A.
Aphidaria simulans PROVANCHER, 1886. Addit. Faune ent. Canada Hym., p. 153. ♀♂.

¹⁾ Following MACKAUER, 1959 (Beitr. Ent., 10, 811), England (with *Eriosoma lanigerum* HAUSM., as host) has been deleted from the list of localities. The record in question (ROSENBERG, 1934. Trans. R. ent. Soc., 82) seems doubtful. In other word, *Praon simulans* is, apparently, confined to the Nearctic region.

702 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Praon pequodorum VIERECK, 1917 (1916). Bull. Connecticut State geol. nat. Hist. Survey, 22, 259.

Praon simulans PROVANCHER, 1889. Addit. Faune ent. Canada Hym., p. 395. ♀♂.

Praon simulans (PROVANCHER), SMITH, 1944. Aphidiinae N. Amer., p. 23, 29—30. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92; MACGILLIVRAY & SPICER, 1953. Canad. Ent., 85, 426 (hosts); SHANDS, SIMPSON, ROBERTS & MUESEBECK, 1955. Proc. ent. Soc. Wash., 57, 132 (host); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 575; SCHLINGER & HALL, 1960. Ann. ent. Soc. Amer., 53, 411 (biological note).

Hosts: „*Macrosiphum pisi* (KALT.)“ (SMITH, 1944; SCHLINGER & HALL, 1960); „*Macrosiphum albifrons* ESSIG“, „*Macrosiphum solanifolii* ASHMEAD“ (MACGILLIVRAY & SPICER, 1953); *Myzus persicae* (SULZER)“ (SHANDS et al., 1955).

**spinosum* MACKAUER. Europe: West Germany.

Praon spinosum MACKAUER, 1959. Beitr. Ent., 9, 841, 856. ♀.

Host: *Thripsaphis* sp. (MACKAUER, 1959).

unicus SMITH. North America: U.S.A.

Praon unicus SMITH, 1944. Aphidiinae N. Amer., p. 23, 30—31. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 575; SCHLINGER & HALL, 1960. Ann. ent. Soc. Amer., 53, 411 (hosts, biological note).

Hosts: „*Aphis rumicis* LINN., *Macrosiphum ambrosiae* (THOMAS), *Macrosiphum rosae* (LINN.), *Macrosiphum* sp., *Myzus persicae* (SULZER), *Phorodon menthae* (BUCKTON)“ (SCHLINGER & HALL, 1960).

virginensis ASHMEAD.¹⁾ North America: U.S.A.

Praon virginensis ASHMEAD, 1889 (1888). Proc. U.S. Nat. Mus., 11, 657. ♀; SMITH, 1944. Aphidiinae N. Amer., p. 23, 31—32. ♀; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 575.

Host: „*Macrosiphum illini* H. & F.“ (SMITH, 1944).

volucre (HALIDA Y). Europe: Most countries.

Asia: Israel; India.

North America: U.S.A. (introduced).

Aphidius (*Praon*) *volucris* HALIDA Y, 1833. Ent. Mag., 1, 484. ♀♂.

Aphidius volucris (HALIDA Y), THOMSON, 1895. Opusc. ent., 20, 2333.

♂♀.

¹⁾ SMITH, 1944 (t. c., p. 26) remarks that *virginensis* ASHMEAD and *humulaphidis* ASHMEAD differ only in certain colour characteristics and that further collecting may prove these two species to be synonymous.

Praon volucris HALIDAY, RUTHE, 1899. Ent. Ztg. Stettin, **20**, 315. ♀.
Praon volucre HALIDAY, MARSHALL, 1896. In ANDRÉ, Spec. Hym.
 Eur. Alg., **5**, 538. ♀♂; SZÉPLIGETI, 1898. Term. Füzetek, **21**, 394,
 406; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, 185; NARA YANAN,
 SUBBA RAO & SHARMA, 1960. Beitr. Ent., **10**, 575.

Praon volucre (HALIDAY, 1833), MACKAUER, 1959. Beitr. Ent., **9**,
 842—47. ♀♂ (synonymy, distribution, variation, hosts); SUBBA
 RAO & SHARMA, 1961 (1960). Indian J. Ent., **22**, 234. ♀ (first record
 from India); MACKAUER, 1961. Beitr. Ent., **11**, 104—105. ♀♂
 (examination of types in British Museum).

Biology: BEIRNE, 1942. Proc. Roy. ent. Soc. Lond., **17** (A),
 42—47.

Hosts: Aphids on *Salix* sp. (HALIDAY, 1833); Aphids on *Calli-
 stephus chinensis* and *Chrysanthemum* sp., *Acyrtosiphon
 chelidonii* (KALT.), *Dactynotus sonchi* (GEOFF.), *Hyalop-
 terus pruni* (GEOFF.), *Tuberculoides annulatus* (HART.),
Macrosiphoniella absinthi (LINN.) (MARSHALL, 1896);
Hyalopterus pruni (GEOFF.) (BEIRNE, 1942); Aphids on
Euphorbia sp., aphids on *Crepis tectorum* L., *Amphoro-
 phora rubi* (KALT.), „*Anuraphis amygdali* BUCKT.“,
Aphis pomi DE G., *Brachycaudus helichrysi* KALT. var.
centauriella THEOB., *Brevicoryne brassicae* (LINN.), „*Cal-
 lipterus* sp.“, *Cinaria cembrae* (CHOLOD.), *Cryptomyzus
 ribis* (LINN.), *Dactynotus picridis* (F.), *Dactynotus jaceae*
 (LINN.), *Drepanosiphon platanoides* (SCHR.), *Hyperomyzus
 lactucae* (LINN.), *Liosomaphis abietina* (WALK.), *Macrosi-
 phon daphnidis* BOERNER, *M. euphorbiae* (THOS.), *M.
 rosae* (LINN.), *M. avehae* (LINN.), ?*Sappaphis malifoliae*
 (FITCH), *Siphonophora* sp. (MACKAUER, 1959).

**volucre myzophagum* MACKAUER. Europe: England; Germany; Au-
 stria.

Praon volucre (HALIDAY) ssp. *myzophagum* n. ssp. MACKAUER, 1959.
 Beitr. Ent., **9**, 847—49, 856. ♀♂.

Host: *Myzus persicae* (SULZER) (MACKAUER, 1959).

Unsatisfactorily described species of *Praon*
mongolicum WATANABE¹. Asia: Inner Mongolia.

¹ Regarding *mongolicum* WATANABE and *pruni* IVANOV, MACKAUER 1959 (t. c., 859)
 states: „... da authentisches Material nicht zugänglich war und die Beschreibung zu
 einer sicheren Interpretation nicht ausreicht. ... Die Art *Praon mongolicum* WATANABE
 ähnelt nicht, wie es WATANABE (1949) angibt, dem *Praon abjectum* (HALIDAY), sondern
 dem auch aus Kansu, China, nachgewiesenen *Praon volucre* (HALIDAY); eine Untersu-
 chung des Typus-Materiales bleibt abzuwarten. ... Dem Wirt entsprechend gehört
Praon pruni IVANOV in die nächste Verwandtschaft von *Praon volucre* (HALIDAY), gegen
 welche Art jedoch verschiedene Färbungsmerkmale sprechen.“

704 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Praon mongolicum WATANABE, 1949. Mushi, Fukuoka, 20, 44. ♀♂;
MACKAUER, 1959. Beitr. Ent., 9, 859.

Praon mongolicus WATANABE, NARAYANAN, SUBBA RAO & SHARMA,
1960. Beitr. Ent., 10, 575.

Host: *Myzus persicae* (SULZER) (WATANABE, 1949).

nanum BAKER¹). N. America: U.S.A.

Praon nanus BAKER, 1909. Pomona Journ. Ent., 1, 23. ♂; MUESE-
BECK & WALKLEY, 1951. Syn. Cat., p. 92; NARAYANAN, SUBBA
RAO & SHARMA, 1960. Beitr. Ent., 10, 575.

pruni IVANOV²). U.S.S.R.: Ukraine.

Praon pruni IVANOV, 1925. Izv. ent. phytopath. Ural'sk 0-va Lyubit.
estestvozn, 1925 (9), p. 2. ♀♂; IVANOV, 1927. Ent. Mitt., 16, 428.
♀♂; MACKAUER, 1959. Beitr. Ent., 9, 859; NARAYANAN, SUBBA
RAO & SHARMA, 1960. Beitr. Ent., 10, 575.

Host: *Hyalopterus pruni* (GEOFF.) (IVANOV, 1925; 1927).

Doubtful species of *Praon*

**angulator* (NEES). Europe: Germany.

Blasticus angulator NEES, 1834. Hym. Ichn. aff. Monogr., 1, 193. ♂.

Praon angulator (NEES, 1834), MACKAUER, 1959. Beitr. Ent., 9,
856—57 (as a doubtful species; NEES' description quoted).

emacerator (NEES). Europe: Germany.

Blasticus emacerator NEES, 1834. Hym. Ichn. aff. Monogr., 1, 193. ♀♂.

Praon emacerator NEES, MARSHALL, 1896. In ANDRÉ, Spec. Hym.
Eur. Alg., 5, 541. ♀♂; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b,
p. 185; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10,
574 (as a valid species).

Praon emacerator (NEES, 1834). MACKAUER, 1959. Beitr. Ent., 9,
857—58 (as a doubtful species; NEES' description quoted).

**peregrinum* RUTHE. Europe: Iceland.

Praon peregrinus RUTHE, 1859. Ent. Ztg. Stettin, 20, 315. ♀♂.

Praon peregrinus RUTHE. PETERSEN, 1956. Zool. Iceland, 3 (49—50),
43. ♀♂.

Praon peregrinum RUTHE, 1859. MACKAUER, 1959. Beitr. Ent., 9,
858—59. ♀♂ (as a doubtful species).

Genus *Protaphidius* ASHMEAD

Aphidius NEES 1811, auctt. (partim).

Coelonotus FOERSTER, 1862. Verh. Naturh. Ver. Rheinl., 19, 248 (preocc.).

Genotype: *Coelonotus rufus* FOERSTER. (Orig. design.)

¹) From SMITH, 1944, p. 103, it is clear that the type of *nanus*, which was a ♂, has been lost. SMITH remarks: „It is quite possible that *nanus* is a synonym of *simulans*, as BAKER states the first discoidal cell is open in *nanus*“. The original description does not help in solving this problem.

²) siehe Fußnote S. 703,

Protaphidius ASHMEAD, 1900. Canad. Ent., **32**, 368 (n. n. for *Coelonotus* preocc.); STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, **3**, 88—91 (generic characters, true position, synonymy).

Genotype: *Coelonotus rufus* FOERSTER. Autob.

Menozzia GOIDANICH, 1934. Boll. Lab. Ent. Bologna, **6**, 217—227.

Genotype: *Menozzia formicaria* GOIDANICH (Orig. design.).
wissmannii (RATZBURG). Europe: Germany; Italy; Czechoslovakia.

Aphidius wissmannii RATZBURG, 1848. Ichn. Forst., **2**, 59. ♀♂;
MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., **5**, 562. ♀;
DALLA TORRE, 1898. Cat. Hym., **4**, 13; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 187.

Coelonotus rufus FOERSTER, 1862. Verh. Naturh. Ver. Rheinl., **19**, 248 (syn. by STARÝ, 1958).

Aphidius rufus (FOERSTER), DALLA TORRE, 1898. Cat. Hym., **4**, 12.

Coelonotus wissmanni (RATZBURG), FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, **3**, 241.

?*Aclitus nawaii* ASHMEAD, 1906. Proc. U.S. Nat. Mus., **30**, 188. ♀♂;
FAHRINGER, 1937. Festschr. 60. Geb. E. STRAND, Riga, **3**, 240.
♀♂ (syn. by STARÝ, 1959).

Aphidius (Protaphidius) nawaii (ASHMEAD), WATANABE, 1957. Ins. Mats., **21**, 2.

Protaphidius wissmanni (RATZBURG), STARÝ, 1958; Acta faun. ent. Mus. Nat. Pragae, **3**, 89—93. ♀ (description, synonymy, hosts, distribution); STARÝ, 1959. Ins. Mats., **22**, 88—91.

Menozzia formicaria GOIDANICH, 1934. Boll. Lab. Ent. Bologna, **6**, 217—27. ♀♂; STARÝ, 1956. Acta Mus. Silesiae, Opava, **5**, 47—48 (syn. by STARÝ, 1958).

Hosts: *Pterocomma salicis* (LINN.); *Stomaphis quercus* (LINN.);
S. yanonis (TAK.).

*Genus: *Tanytrichophorus* MACKAUER

Tanytrichophorus MACKAUER, 1961. Boll. Lab. Ent. agr. Portici, **19**, 271 bis 272.

Genotype: *Tanytrichophorus petiolaris* MACKAUER (Orig. design.).

**petiolaris* MACKAUER. Asia: Iran.

Tanytrichophorus petiolaris MACKAUER, 1961. Boll. Lab. Ent. agr. Portici, **19**, 272—273, ♂.

Host: *Brachycaudus persicae-niger* (SMITH) (MACKAUER, 1961).

Genus *Toxares* HALIDAY

Aphidius (Trionyx) HALIDAY, 1833. Ent. Mag., **1**, 487 (preocc.).

Toxares HALIDAY 1840. In WESTWOOD, 1840. Introd. mod. Class. Insects, **2**, 65.

706 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Toxares STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, **3**, 55, 58—59 (revision of the genus).

Genotype: *Aphidius (Trionyx) deltiger* HALIDAY, 1833. (Orig. design.)

deltiger (HALIDAY).

Europe: England; Poland; Germany; Iceland; Czechoslovakia.

Aphidius (Trionyx) deltiger HALIDAY, 1833. Ent. Mag., **1**, 487. ♀♂.

Toxares deltiger HALIDAY, 1840. In WESTWOOD, 1840. Introd. mod.

Class. Insects, **2**, 65; NIEZABITOWSKI, 1909. Spraw. Kom. Fizjogr.

Krakow, **44**, 53. ♂; SCHMIEDEKNECHT, 1930. Hym. mitteleur., **2**,

340; STELFOX, 1941. Proc. Roy. Irish Acad., **46** (B), 127—28. ♀♂;

STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, **3**, 59—61. ♀♂ (first record from Czechoslovakia; host).

Ephedrus flaveolus* GYÖRFI, 1958. Acta Zool. Hung., **4, 131, ♂.

Hosts: *Drepanosiphon platanoidis* SCHRANK (STELFOX, 1941);

Acyrtosiphon caraganæ CHOL. (STARÝ, 1958).

Genus *Xenostigmus* SMITH

Xenostigmus SMITH, 1944. Aphidiinae N. Amer., p. 35, 36 (subgenus of

Aphidius NEES); STARÝ, 1958. Acta faun. ent. Mus. Nat. Pragae, **3**, 56

(subgenus of *Aphidius* NEES, in key to genera of Aphidiinae); STARÝ, 1960.

Acta Soc. ent. Cechosl., **57**, 247 (generic rank, in key to genera).

Genotype: *Aphidius (Xenostigmus) bifasciatus* SMITH. (Orig. design.)

bifasciatus (SMITH).

North America: U.S.A.

Aphidius (Xenostigmus) bifasciatus SMITH, 1944. Aphidiinae N.

Amer., pp. 36—37. ♀♂.

Hosts: *Cinara* sp.; *Cinara carolinia* TISSOT; *C. taedae* TISSOT (SMITH, 1944).

Genus *Trioxys* HALIDAY

Revision of Middle-, West-, and North-European species: MACKAUER, 1959.

Beitr. Ent., **9**, 144—79.

Taxonomic revision of the genus: MACKAUER, 1960. Beitr. Ent., **10**, 137—60.

*Subgenus *Betuloxys* MACKAUER

Betuloxys MACKAUER, 1960. Beitr. Ent., **10**, 139, 157.

Subgenotype: *Trioxys compressicornis* RUTHE. Orig. design. and monotypic.

**affinis* MACKAUER.

Europe: West Germany.

Trioxys betuloxys MACKAUER, 1960. Mitt. Dtsch. ent. Ges., **19**, 96—98.

♀.

compressicornis RUTHE.

Europe: Iceland; England; Germany.

Trioxys compressicornis RUTHE, 1859. Ent. Ztg. Stettin, 20, 314. ♀; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 190.

Trioxys (Trioxys) compressicornis RUTHE, MACKAUER, 1959. Beitr. Ent., 9, 161, 173. ♀; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 578.

Trioxys (Betuloxys) compressicornis RUTHE, MACKAUER, 1960. Beitr. Ent., 10, 141—142, 157. ♀♂.

Trioxys testaceus STELFOX, 1948. Ent. mon. Mag., 84, 102. ♀; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 581 (synonymy by MACKAUER, 1959; type of testaceus designated neotype of *compressicornis*).

Hosts: *Euceraphis punctipennis* (ZETT.) on *Betula* sp. (MACKAUER, 1960).

**hortorum* STARÝ.

Europe: Czechoslovakia.

Trioxys (Betuloxys) hortorum STARÝ, 1960. Acta Soc. ent. Cechosl., 57, 365—367. ♀♂.

Host: *Tinocallis platani* (KALT.) (STARÝ, 1960).

*Subgenus *Pectoxys* MACKAUER

Pectoxys MACKAUER, 1960. Beitr. Ent., 10, 154—55, 158.

Subgenotype: *Trioxys (Pectoxys) macroceratus* MACKAUER. Orig. design. and monotypic.

**macroceratus* MACKAUER¹⁾. Europe: England.

„*Trioxys (Pectoxys) macroceratus* STARÝ, 1960 (in litt.)“, MACKAUER, 1960. Beitr. Ent., 10, 155—57. ♀.

Trioxys (Trioxys s. str.) *macroceratus* STARÝ, 1960. Ent. mon. Mag., 96, 22—23. ♀.

Host: „Aphids on *Carex paniculata* L.“ (MACKAUER, 1960).

**ibis* MACKAUER.

Europe: England.

Trioxys (Pectoxys) ibis MACKAUER, 1961. Boll. Lab. Ent. agr. Portici, 19, 288—289. ♀.

*Subgenus *Binodoxys* MACKAUER

Binodoxys MACKAUER, 1960. Beitr. Ent., 10, 141, 157 (characters, list of species).

Subgenotype: *Aphidius (Trioxys) angelicae* HALIDAY. (Orig. design.)

acalephae (MARSHALL).

Europe: England.

Aphidius acalephae MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 608—609. ♂; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b,

¹⁾ This species was described twice: by MACKAUER, 1960 (Beitr. Ent., 10, 155—157) as „*Trioxys (Pectoxys) macroceratus* STARÝ (in litt.)“ and by STARÝ, 1960 (Ent. mon. Mag., 96, 22—23). Since MACKAUER's paper appeared in February, 1960, and STARÝ's in August 1960, MACKAUER is the author of *macroceratus*.

708 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

p. 185; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 554.

Trioxys (Trioxys) urticae MACKAUER, 1959. Beitr. Ent., 9, 171—73. ♀♂ (syn. by MACKAUER, 1961).

Trioxys (Binodoxys) urticae MACKAUER, 1959. MACKAUER, 1960. Beitr. Ent., 10, 141, 158 (in list of species and in key).

Trioxys (Binodoxys) acalephae (MARSHALL, 1896). MACKAUER, 1961. Beitr. Ent., 11, 148 (examination of type in British Museum; synonymy with *urticae* MACKAUER).

Host: Aphids on *Urtica dioeca* LINN. (MACKAUER, 1959).

amoplanus PÉREZ. Europe: Czechoslovakia.

Trioxys amoplanus PÉREZ, 1934. Eos, 10, 13. ♀; MACKAUER, 1959. Beitr. Ent., 9, 176.

Trioxys (Trioxys) amoplanus PÉREZ. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 576.

Trioxys (Binodoxys) amoplanus QUILIS 1934. MACKAUER, 1960. Beitr. Ent., 10, 141 (in list of species).

Host: *Dactynotus (Dactynotus) sonchi* (LINN.) (= *Macrosiphum sonchi* R.; PÉREZ, 1934).

angelicae angelicae (HALIDAY). Europe: England; France; Germany; Austria; Switzerland; Czechoslovakia; Spain.

Aphidius (Trioxys) angelicae HALIDAY, 1833. Ent. Mag., 1, 489. ♀.

Trioxys angelicae HALIDAY. MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 555. ♀; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 190.

Trioxys (Trioxys) angelicae (HALIDAY, 1833). MACKAUER, 1959. Beitr. Ent., 9, 149—54. ♀♂ (synonymy, distribution, hosts).

Trioxys (Trioxys) angelicae HALIDAY. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 576.

Trioxys (Binodoxys) angelicae (HALIDAY, 1833). MACKAUER, 1960. Beitr. Ent., 10, 144, 157.

Trioxys placidus GAUTIER, 1922. Bull. Soc. ent. Fr., 1922 (1921), p. 302. ♀♂ (syn. by MACKAUER, 1959).

Trioxys (Trioxys) placidus GAUTIER. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 580.

Hosts: Aphids on *Angelicae silvestris* (HALIDAY, 1833); „*Siphonophora olivata* BUCKTON“ (BIGNELL, cited by MARSHALL, 1896); „aphids on creeping thistle“ (MACKAUER, 1959); *Aphis sambuci* LINN., *Aphis fabae* SCOP., *A. hederæ* KALT., *A. viburni* SCOP., *Aphidula pomi* (DE G.), *Dactynotus aeneus* HRL. (MACKAUER, 1959).

**angelicae mediterraneus* MACKAUER. Europe: Spain¹.
Asia: Israel.

Trioxys (Binodoxys) angelicae mediterraneus MACKAUER, 1960. Beitr. Ent., 10, 142—43, 158. ♀♂.

Hosts: *Aphis gossypii* GLOVER; *Aphis rumicis* LINN. (MACKAUER, 1960).

boscai PÉREZ. Europe: Spain.

Trioxys boscai PÉREZ, 1931. EOS, 7, 83. ♀; MACKAUER, 1959. Beitr. Ent., 9, 176.

Trioxys (Binodoxys) boscai QUILIS 1931. MACKAUER, 1960. Beitr. Ent., 10, 141 (in list of species).

Trioxys (Trioxys) boscai PÉREZ. NARA YANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 577.

Biological and morphological note: PÉREZ, 1931. Anal. Inst. nac. Valencia, 2^e ser., Hist. nat. 20, 34.

Host: Black aphids on *Anthyllis citisoides* (PÉREZ, 1931).

brevicornis (HALIDAY). Europe: England; Germany; Austria; Sweden; Czechoslovakia; ?Spain.²

Aphidius (Trioxys) brevicornis HALIDAY, 1833. Ent. Mag., 1, 491. ♀.

?*Aphidius (Trioxys) minutus* HALIDAY, 1833. Ent. Mag., 1, 491. ♀ (syn. by MACKAUER, 1959).

Trioxys brevicornis HALIDAY. MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 551. ♀; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 190; PÉREZ, 1931. Anal. Inst. nac. Valencia, 2^e ser., Hist. nat. 20, 54—55 (host, Spain).

?*Trioxys minutus* HALIDAY. MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 556. ♀; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22a—b, p. 190.

Aphidius brevicornis (HALIDAY). THOMSON, 1895. Opusc. ent., 20, 2336. ♀.

Trioxys (Trioxys) brevicornis (HALIDAY 1833). MACKAUER, 1959. Beitr. Ent., 9, 155—57, 174. ♀♂ (synonymy, distribution, hosts); NARA YANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 577.

Trioxys (Binodoxys) brevicornis (HALIDAY 1833). MACKAUER, 1960.

¹) PÉREZ, 1931 (Anal. Inst. nac. Valencia, 2^e ser., Hist. nat. 20, 30) mentions *Trioxys angelicae* HALIDAY having been collected by him at Valencia (Spain). It is possible that this record was, actually, of *angelicae mediterraneus* MACKAUER, since MACKAUER (1960), mentions 3♀♀ and 1♂♂ of this subspecies which were collected from Spain. Based on this, Spain has been removed from the list of localities for *angelicae angelicae* (HALIDAY).

²) PÉREZ, 1931 (Anal. Ins. nac. Valencia, 2^e ser., Hist. nat., 20, 35) mentions *brevicornis* (HALIDAY) as a parasite of „the green aphid of *Lonicera* sp.“ in the Botanical Gardens of Barcelona. MACKAUER (1959), however, does not include Spain in the list of localities of *brevicornis*. We have, therefore, listed Spain with a query against it.

710 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Beitr. Ent., 10, 141, 157 (in list of species, and in key); MACKAUER, 1961. Beitr. Ent., 11, 148 (examination of type in British Museum).

Hosts: In Umbellifers, chiefly *Angelica silvestris* (HALIDAY 1833; MARSHALL, 1896); in *Buxus balearica* infested with aphids (HALIDAY 1833, for *minutus* HALIDAY); „green aphid of *Lonicera* sp.“ (PÉREZ, 1931¹); *Myzus cerasi* (F.) (MACKAUER, 1959, lit., England); *Semiaphis anthrisci* (KALTB.) (PÉREZ, 1934, Czechoslovakia); *Cavariella umbellatarum* (KOCH) (MACKAUER, 1959, Germany).

carolinensis SMITH.

North America: U.S.A.

Trioxys (Trioxys) carolinensis SMITH, 1944. Aphidiinae N. Amer., p. 86, 89—90. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 96; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 577.

Trioxys (Binodoxys) carolinensis SMITH, 1944, MACKAUER, 1960. Beitr. Ent., 10, 141 (in list of species).

Host: „*Aphis* sp.“ (SMITH, 1944).

centaurae (HALIDAY).

Europe: England; Ireland; Germany; Austria; Switzerland; Sweden; ? Cyprus.

Asia: ? Mongolia.

Aphidius (Trioxys) centaurae HALIDAY, 1833. Ent. Mag., 1, 490. ♀.

Trioxys centaurae HALIDAY, MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 554. ♀; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 190; WILKINSON, 1926. Cyprus agr. Jour., 21, 12.

? *Trioxys centaurae* (HALIDAY), WATANABE, 1919. Mushi, Fukuoka, 20, 44. ♀♂.

Trioxys (Trioxys) centaurae (HALIDAY 1833), MACKAUER, 1959. Beitr. Ent., 9, 157—59, 173. ♀♂ (synonymy, distribution, hosts).

Trioxys (Trioxys) centaurae HALIDAY. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 578.

Trioxys (Binodoxys) centaurae (HALIDAY, 1833), MACKAUER, 1960. Beitr. Ent., 10, 141, 157 (in list of species and in key); MACKAUER, 1961. Beitr. Ent., 11, 149 (examination of type in British Museum).

Biological note: MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 555.

Immature stages: BEIRNE, 1942. Ent. mon. Mag., 78, 285.

Hosts: Aphids on *Centaurea nigra* (HALIDAY, 1833; MARSHALL, 1896); *Brachycaudus helichrysi* (KALTB.) (BEIRNE, 1942, Ireland); *Aphis rumicis* LINN. (WILKINSON, 1926, Cyprus; WATANABE, 1949, Inner Mongolia); *Aphis fabae* SCOP. (WILKINSON, 1926, Cyprus).

¹) see p. 709.

**confucius* MACKAUER.

Trioxy (*Bindoxys*) *confucius* MACKAUER, 1960. Beitr. Ent., 10, 141 (nomen nudum).

coruscanigrans GAHAN. N. America: U.S.A.

Trioxy *curoscanigrans* GAHAN, 1911. Maryland Bull. agr. expt. Sta. 152, p. 195. ♀.

Trioxy (*Trioxy*) *coruscanigrans* Gahan, SMITH, 1944. Aphidiinae N. Amer., p. 86, 90—91. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 96; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 578.

Trioxy (*Bindoxys*) *coruscanigrans* GAHAN 1911; MACKAUER, 1960. Beitr. Ent., 10, 141 (in list of species).

Hosts: „*Macrosiphum coweni* (HUNTER) and *Macrosiphum jonesii* G. & P.“ (SMITH, 1944).

fumariae PÉREZ. Europe: Spain.

Trioxy *fumariae* PÉREZ, 1931. Eos, 7, 81. ♀.

Trioxy (*Trioxy*) *fumariae* PÉREZ. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 579.

Trioxy (*Binodoxys*) *fumariae* QUILIS 1931. MACKAUER, 1960. Beitr. Ent., 10, 141 (in list of species).

Biological note: PÉREZ, 1931. Anal. Ins. nac. Valencia, 2^e ser., Hist. nat., 20, 34.

Host: *Aulocorothum rogersii* (THEOB.) (= *Macrosiphum rogersii* THEOB.) (PÉREZ, 1931).

**genistae* MACKAUER. Europe: Germany

Trioxy (*Binodoxys*) *genistae* MACKAUER, 1960. Beitr. Ent., 10, 141, 143—146, 158. ♀♂.

Host: *Aphis genistae* SCOP. on *Genista tinctoria* L. (MACKAUER, 1960).

granatensis PÉREZ. Europe: Spain

Trioxy (*Trioxy*) *granatensis* PÉREZ. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 579.

Trioxy (*Binodoxys*) *granatensis* QUILIS 1931. MACKAUER, 1960. Beitr. Ent., 10, 141 (in list of species).

Host: *Aphids* on *Punica granatum* L. (PÉREZ, 1931).

heraclei (HALIDAY).

Europe: England; Ireland; France; Holland; Germany, Italy; ? Spain¹).

Aphidius (*Trioxy*) *heraclei* HALIDAY, 1833. Ent. Mag., 1, 490. ♀♂.

Aphidius obsoletus WESMAEL, 1835. Nouv. Mem. Acad. Brux., 9, 83. ♀♂.

¹) PÉREZ, 1931 (Anal. Inst. nac. Valencia, 2^e ser., Hist. nat., 20, 30) records *heraclei* (HALIDAY) as a parasite of the black aphid of *Anthyllis citisoides* at Azuebar, Spain. However, MACKAUER (1959) does not mention Spain in the list of localities of *heraclei* (HALIDAY).

712 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Trioxya heraclei HALIDAY. MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 552. ♀♂; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 190; PÉREZ, 1931. Anal. Inst. nac. Valencia, 2^e ser., Hist. nat., 20, 30.

? *T. variegator* SZÉPLIGETI, 1898. Term. Füzetek, 21, 394, 407. ♀.

Trioxya (Trioxya) heraclei (HALIDAY 1833). MACKAUER, 1959. Beitr. Ent., 10, 165—67, 173. ♀♂ (synonymy, distribution, hosts).

Trioxya (Trioxya) heraclei HALIDAY. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 579.

Trioxya (Binodoxys) heraclei (HALIDAY 1833). MACKAUER, 1960. Beitr. Ent., 10, 141 (in list of species); MACKAUER, 1961. Beitr. Ent., 11, 149 (examination of type in British Museum; *variegator* SZÉP. as a doubtful synonym).

Hosts: Aphids on *Heracleum spondylium* LINN. (HALIDAY, 1833; MARSHALL, 1896); black aphid of *Anthyllis citisoides* (PÉREZ, 1931); *Aphis evonymi* F. (MALAGUIN & MOITIÉ, 1914, France); *Aphis fabae* SCOP. (MACKAUER, 1959, lit., France); *Pterocomma (Clavigerus) salicis* (LINN.) (MACKAUER, 1959, lit.); *Aphis rumicis* LINN. (PICARD, 1919, France); *Myzella galeopsidis* (KALTB.) (MACKAUER, 1959, lit., Italy); *Cavariella umbelatarum* (KOCH) (MACKAUER, 1959, Germany).

indicus SUBBA RAO & SHARMA. Asia: India.

Trioxya (Trioxya) indicus SUBBA RAO & SHARMA, 1958. Indian J. Ent., 20, 199—201. ♀♂.

Biology: SUBBA RAO & SHARMA, 1962. Proc. Nat. Inst. Sci. India (B) (in litt).

Host: *Aphis gossypii* GLOVER on brinjal and cotton.

letifer (HALIDAY). Europe: England; Germany.

Aphidius (Trioxya) letifer HALIDAY, 1833. Ent. Mag., 1, 491. ♀.
Trioxya letifer HALIDAY. MARSHALL 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 557. ♀.

Trioxya lethifer HALIDAY (err.). SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 190.

Trioxya (subg. inc.) *letifer* (HALIDAY 1833). MACKAUER, 1959. Beitr. Ent., 9, 174 (in species dubia; HALIDAY'S description quoted).

Trioxya (Trioxya) letifer HALIDAY, NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 580.

Trioxya (Binodoxys) letifer (HALIDAY 1833). MACKAUER, 1960. Beitr. Ent., 10, 141, 146—48, 157. ♀♂ (neotype ♀; ♂ described, hosts).

Hosts: Aphids on *Salix ulmifoliae* (HALIDAY, 1833); *Cavariella archangeliae* (SCOP.) and *Salix* sp. (MACKAUER, 1960).

palmerae SMITH.

North America: U.S.A.

- Trioxys (Trioxys) palmerae* SMITH, 1944. Aphidiinae N. Amer., p. 86, 94—95. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 97; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 580.
- Trioxys (Binodoxys) palmerae* SMITH, 1944. MACKAUER, 1960. Beitr. Ent., 10, 141 (in list of species).
- Host: „*Macrosiphum mentzeliae* WILSON“. (SMITH, 1944).
- rhagii* ASHMEAD. North America: U.S.A.; Canada.
- Trioxys rhagii* ASHMEAD, 1889 (1888). Proc. U.S. Nat. Mus., 11, 670. ♀.
- Trioxys (Trioxys) rhagii* ASHMEAD. SMITH, 1944. Aphidiinae N. Amer., p. 87, 95—96. ♀; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 97; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 580.
- Host: ?! „*Rhagium lineatum*“ (Coleoptera!, Cerambycidae) (ASHMEAD, 1889).
- **rietscheli* MACKAUER. Europe: West Germany.
- Trioxys (Trioxys) rietscheli* MACKAUER, 1959. Beitr. Ent., 9, 170—71, 173. ♀♂.
- Trioxys (Binodoxys) rietscheli* MACKAUER, 1959. MACKAUER, 1960. Beitr. Ent., 10, 141, 158 (in list of species and in key).
- Host: *Aphidula (Aphidula) nasturtii*.
- similis* MACKAUER. Europe: France; Jugoslavia („Serbia“).
- Trioxys (Trioxys) similis* MACKAUER, 1959. Entomophaga, Paris, 4, 303—307. ♀♂.
- Trioxys (Binodoxys) similis* MACKAUER, 1959. MACKAUER, 1960. Beitr. Ent., 10, 148 (further notes; ♂ genitalia).
- Host: „peach aphid“ (?*Myzus persicae* (SULZER 1776) It. MUESEBECK, in litt.) (MACKAUER, 1959).
- struma* GAHAN. Asia: Taiwan.
- Trioxys struma* GAHAN, 1926. Proc. U.S. Nat. Mus., 70, Art. 8, 5—6. ♀♂.
- Host: *Macrosiphoniella citricola* v. D. G., *Greenidea ficicola* TAK. (GAHAN, 1926).
- **sinensis* MACKAUER.
- Trioxys (Binodoxys) sinensis* MACKAUER, 1960, Beitr. Ent., 10, 141 (nomen nudum).

Subgenus *Trioxys* HALIDA Y S. S.Subgenotype: *Aphidius cirsii* CURTIS*ameraceris* SMITH.

North America: U.S.A.

- Trioxys (Trioxys) ameraceris* SMITH, 1944. Aphidiinae N. Amer., p. 86, 87—88. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 96; MACKAUER, 1960. Beitr. Ent., 10, 149 (in list of species); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 576.

714 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Hosts: „*Drepanaphis acerifolii* (THOMAS), *D. monelli* DAVIS.“
(SMITH, 1944).

**asiaticus* TELENGA.

Asia: U.S.S.R. — Uzbekistan.

Trioxys asiaticus TELENGA, 1953. Trudy Inst. Zool. Parasitol. AN
Uzb. S.S.R., 1, 170—171. ♀.

**Trioxys (Trioxys) vandenboschē* MACKAUER, 1960. Senck. biol.,
Frankfurt M., 41, 359—361. ♀♂ (n. syn.)

Host: *Acyrtosiphon gossypii* MORDV. (MACKAUER, 1960).

auctus (HALIDAY).

Europe: England; Ireland; Hol-
land; France; Sweden; Ger-
many; Russia; ? Spain¹); ?
Switzerland²)

Aphidius (Trioxys) auctus HALIDAY, 1833. Ent. Mag., 1, 489. ♀♂.

Aphidius auctus (HALIDAY). THOMSON, 1895. Opusc. ent., 20, 2335.

♀.

Trioxys auctus HALIDAY. MARSHALL, 1896. In ANDRÉ, Spec. Hym.
Eur. Alg., 5, 550. ♀♂; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b,
p. 190; PÉREZ, 1931. Anal. Inst. nac. Valencia, 2^e ser., Hist. nat.,
20, 34.

Trioxys (Trioxys) auctus (HALIDAY 1833). MACKAUER, 1959. Beitr.
Ent., 9, 154—55, 174. ♀♂; MACKAUER, 1961. Beitr. Ent., 11, 145
(examination of type in British Museum).

Trioxys (Trioxys) auctus HALIDAY. NARAYANAN, SUBBA RAO &
SHARMA, 1960. Beitr. Ent., 10, 577.

Hosts: *Aphis evonymi* F. (MALAGUIN & MOITIÉ, 1914; France);
Cerosipha (Cerosipha) frangulae (KALTB.) (JACHONTOV,
1929, Russia); *Cerosipha (Cerosipha) gossypii* (GLOVER)
(MACKAUER, 1959).

**bajáriæ* GYÖRFI.

Europe: Hungary

Aphidius bajáriæ GYÖRFI, 1958. Acta Zool. Hung., 4, 132—133. ♂.

Trioxys bajáriæ (GYÖRFI), STARÝ, 1961. Acta ent. Mus. Nat. Prage,
34, 21.

**bicuspis* MACKAUER.

Europe: Austria

Trioxys (Trioxys) bicuspis MACKAUER, 1960. Beitr. Ent., 10, 149—50,
158. ♀♂.

betulae MARSHALL.

Europe: England.

Trioxys betulae MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg.
5, 553. ♀; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 190.

„*Trioxys (Trioxys) pallidus* (HALIDAY 1833) group“. MACKAUER,
1949. Beitr. Ent., 9, 167, 872.

¹) PÉREZ (1931) mentions „*Trioxys auctus* HAL.“ as occurring at Betera, Spain, but does not mention any host. MACKAUER (1959), however, does not include Spain in the list of localities for *T. auctus*.

²) SZÉPLIGETI (1904) gives England and Switzerland as the localities of *T. auctus* (HALIDAY).

Trioxys (Trioxys) betulae MARSHALL. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 577.

Trioxys (Trioxys) betulae MARSHALL 1896. MACKAUER, 1961. Beitr. Ent., 11, 146 (examination of type in British Museum; *betulae* as a valid species).

Host: *Kallistaphis betulicola* (KALTB.) (= *Callipterus betularius* BUCKTON). (MARSHALL, 1896); *Symydobius oblongus* (VAN HEYDEN), *Clethrobium giganteus* (CHOLOD.) (MACKAUER, 1961).

bonnevillensis SMITH.

North America: U.S.A.

Trioxys (Trioxys) bonnevillensis SMITH, 1944. Aphidiinae N. Amer., p. 86, 88—89. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 96; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 577.

Trioxys (Trioxys) bonnevillensis SMITH, 1944. MACKAUER, 1960. Beitr. Ent., 10, 149 (in list of species).

Hosts: „*Pseudoepameibaphis glauca* G. & P.; *Capitophorus glandulosus* KALT.; *Capitophorus bitrichus* K. & S.; *Capitophorus oestlundii* K.“ (SMITH, 1944).

cirsii (CURTIS).

Europe: England; Ireland; Holland; Germany; ? Spain¹); ? Jugoslavia²).

Australia: ?Tasmania³).

Aphidius cirsii CURTIS, 1831. Brit. Ent., 8, 383. ♀.

Aphidius (Trioxys) aceris HALIDAY, 1833. Ent. Mag., 1, 490. ♀.

Trioxys aceris HALIDAY. MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 552. ♀; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 190.

Trioxys (Trioxys) cirsii (CURTIS 1831). MACKAUER, 1959. Beitr. Ent., 9, 159—61, 174. ♀♂ (synonymy, distribution, hosts); MACKAUER, 1960. Beitr. Ent., 10, 149, 158.

Trioxys (Trioxys) cirsii (CURTIS). NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 578.

¹) PÉREZ, 1931 (Anal. Inst. nac. Valencia, 2^e ser., Hist. nat., 20, 32) records „*Trioxys aceris* HAL.“ as a parasite of „*Aphis neoreticulatus* THEOB.; *Aphis rumicis* L.; *Siphonophora granarium*, and *Siphonophora pastinacae* L.“ However, the ♀ figured by PÉREZ there (t. c., p. 32) is obviously not of *cirsii* (CURTIS), judging from the venation. MACKAUER (1959) does not mention Spain in the list of localities of *T. cirsii*.

²) FERRIÈRE and VOUKASSOVITCH, 1928 (Bull. Soc. ent. France 1928) recorded „*Trioxys aceris* HALIDAY“ as a parasite of „*Aphis? ballotae* PASS.“ in Serbia (Jugoslavia). However, MACKAUER, (1959) does not include Jugoslavia in the list of localities of *T. cirsii* (CURTIS).

³) EVANS, 1939 (Tasm. J. agric. 10) recorded „*Trioxys aceris* HALIDAY“ attacking „*Myzocallis annulata* HTG.“ (= *Tuberculoides annulatus* HTG.) on oak in Tasmania. It is probable that the species was actually *T. pallidus* (HALIDAY) and not *T. cirsii* (CURTIS).

716 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

Hosts: Aphids on *Acer pseudoplatanus* (HALIDAY, 1833); *Drepanosiphon platanooides* (SCHR.) on *Acer pseudoplatanus* LINN. (MACKAUER, 1959).

communis GAHAN. Asia: Taiwan.

Trioxys communis GAHAN, 1926. Proc. U.S. Nat. Mus., 70, Art. 8, 5—4, ♀♂.

Host: *Aphis gossypii* GLOV.

complanatus PÉREZ. Europe: Spain.

Trioxys complanatus PÉREZ, 1931. Eos, 7, 78—81. ♀♂.

Host: *Aphidae* sp. on *Pisum sativum* (PÉREZ, 1931).

Trioxys (Trioxys) complanatus PÉREZ, 1931. MACKAUER, 1960. Beitr. Ent., 10, 149.

?*cupressicola* GAHAN. North America: U.S.A.

Trioxys cupressicola GAHAN, 1911. Maryland agr. expt. Sta. Bull. 152, 195. ♀♂.

Trioxys (Trioxys) cupressicola GAHAN. SMITH, 1944. Aphidiinae N. Amer., p. 86, 91. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 96; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 579.

„? *Trioxys (Trioxys) cupressicola* GAHAN 1911.“ MACKAUER, 1960. Beitr. Ent., 10, 149 (in list of species).

Host: „*Cerosipha* sp.“ (GAHAN, 1911).

?*exareolatus* (VIERECK). North America: U.S.A.

Aphidius (Trioxys) exareolatus VIERECK, 1917 (1916). Connecticut State Geol. nat. Hist. Survey Bull., 22, p. 260, 261. ♀.

Trioxys (Trioxys) exareolatus VIERECK. SMITH, 1944, Aphidiinae N. Amer., p. 86, 92. ♀.

Trioxys (Trioxys) exareolatus (VIERECK). MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 96; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 579.

„? *Trioxys (Trioxys) exareolatus* (VIERECK 1916)“ MACKAUER, 1960. Beitr. Ent., 10, 149 (in list of species).

Host: „A rose aphid“ (VIERECK, 1917); „*Macrosiphum rosae* L.“ (MUESEBECK, 1951).

**falcatus* MACKAUER. Europe: West Germany.

Trioxys (Trioxys) falcatus MACKAUER, 1959. Beitr. Ent., 9, 164—65, 174. ♀; MACKAUER, 1960. Beitr. Ent., 10, 149 (in list of species).

gahani SMITH. North America: U.S.A.

Trioxys (Trioxys) gahani SMITH, 1944. Aphidiinae N. Amer., p. 86, 92—93. ♀♂; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 96; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 579.

Trioxys (Trioxys) gahani SMITH, 1944. MACKAUER, 1960. Beitr. Ent., 10, 149.

Host: „? *Aphis forbesi* WEED.“ (SMITH, 1944).

- **hincksi* MACKAUER¹. Europe: England.
Trioxys (Trioxys) hincksi MACKAUER, 1960. Beitr. Ent., 10, 151—52, 158. ♀; MACKAUER, 1961. Beitr. Ent., 11, 146 (further notes; comparison with *T. betulae* MARSHALL).
- **humuli* MACKAUER. Europe: Germany; Czechoslovakia.
Trioxys (Trioxys) humuli MACKAUER, 1960. Beitr. Ent., 10, 152, 154, 158. ♀♂.
 Host: *Phorodon humuli* (SCHRANK.) on *Humulus lupulus* L. (MACKAUER, 1960).
- infrequens* SMITH. North America: U.S.A.
Trioxys (Trioxys) infrequens SMITH, 1944. Aphidiinae N. Amer., p. 86, 93—94. ♀; MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 96; NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 579.
Trioxys (Trioxys) infrequens SMITH, 1944. MACKAUER, 1960. Beitr. Ent., 10, 149 (in list of species).
- **lambersi* MACKAUER. Europe: Netherlands.
Trioxys (Trioxys) lambersi MACKAUER, 1960. Boll. Lab. Ent. agr. Portici, 18, 294—296. ♀.
 Host: *Holcaphis holci* (HARDY) (MACKAUER, 1960).
- **mutilus* MACKAUER. Europe: Netherlands.
Trioxys (Trioxys) mutilus MACKAUER, 1961. Boll. Lab. Ent. agr. Portici, 19, 285—286. ♀♂.
 Host: *Monaphis antennata* (KALT.) (MACKAUER, 1961).
- ?*obscuriformis* PÉREZ. Europe: Spain.
Trioxys obscuriformis PÉREZ, 1931. Eos, 7, 77. ♀.
 „? *Trioxys (Trioxys) obscuriformis* QUILIS 1931“. MACKAUER, 1960. Beitr. Ent., 10, 149.
Trioxys (Trioxys) obscuriformis PÉREZ. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 580.
 Morphological note: PÉREZ, 1931. Anal. Inst. nac. Valencia, 2^e ser., Hist. nat., 20, 31.
- „*pallidus* (HALIDAY)“, group. Europe: Most countries.
 Middle East: Israel.
 North America: U.S.A. (imported).
Aphidius (Trioxys) pallidus HALIDAY, 1833. Ent. Mag., 1, 489. ♀.
Aphidius resolutus NEES, 1834. Hym. Ichn. aff. Monogr., 1, 24. ♀ (? ♂); MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 613. ♀♂ (as a doubtful sp.; ♂ termed ‚douteus‘) (synonymy by MACKAUER, 1959).

¹) MACKAUER 1961 (Beitr. Ent., 11, 146) regards *hincksi* MACKAUER very close to *betulae* MARSHALL and even expresses the opinion that *hincksi* may be a geographic race of *betulae*.

718 E. S. Narayanan, B. R. Subba Rao, A. K. Sharma, P. Starý, Aphidiinae

- Trioxyis pallidus* HALIDAY. MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 556. ♀; SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 190.
- Ephedrus resolutus* NEES. SZÉPLIGETI, 1904. Gen. Ins., fasc. 22 a—b, p. 183.
- Monoctonus resolutus* (NEES). MUESEBECK & WALKLEY, 1951. Syn. Cat., p. 92 (designated genotype of *Aphidileo* RONDANI 1848; *Aphidileo* synonymised with *Monoctonus*); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 572.
- ?*Monoctonus resolutus* (NEES). STARÝ, 1959. Acta Soc. ent. Cechosl., 56, 249 (as a doubtful species of *Monoctonus*).
- Trioxyis pulcher* GAUTIER & BONNAMOUR, 1924. Bull. ent. Soc. France, 1924, p. 43. ♀ (synonymy by MACKAUER, 1959).
- Trioxyis* (*Trioxyis*) *pulcher* GAUTIER & BONNAMOUR. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 580.
- Trioxyis utilis* MUESEBECK, 1956. Bull. Brooklyn ent. Soc., 51, 20. ♀♂ (synonymy by MACKAUER, 1959).
- Trioxyis* (*Trioxyis*) *utilis* MUESEBECK. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 581.
- „*Trioxyis* (*Trioxyis*) *pallidus* (HALIDAY 1833) Gruppe“. MACKAUER, 1959. Beitr. Ent., 9, 167, 174. ♀♂ (synonymy, redescription); MACKAUER, 1960. Beitr. Ent., 10, 149, 158.
- „*Trioxyis* (*Trioxyis*) *pallidus* (HALIDAY 1833)“. MACKAUER, 1959. Beitr. Ent., 10, 872.
- Trioxyis* (*Trioxyis*) *pallidus* HALIDAY. NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 580.
- **phyllaphidis* MACKAUER. Europe: Netherlands.
Trioxyis (*Trioxyis*) *phyllaphidis* MACKAUER, 1961. Boll. Lab. Ent. agr. Portici, 19, 286—288. ♀.
 Host : *Phyllaphis fagi* (L.) (MACKAUER, 1961).
 Bionomics, Biology: VAN DEN BOSCH, 1957. Journ. econ. ent., 50, 352—56; SCHLINGER & HALL, 1959. Journ. econ. ent., 52, 155—56 (as *T. utilis* MUESEBECK).
 Hosts: Aphids on *Carex* sp.; aphids on *Corylus avellana* LINN.; „small aphids on oak“ (GAUTIER & BONNAMOUR, 1924; for *pulcher* G. & B.); *Therioaphis maculata* (BUCKTON), *T. trifoli* (MONELL) (MUESEBECK, 1956); *Therioaphis riehmii* (BOERNER) (VAN DEN BOSCH, 1957); *Myzocallis coryli* (GOETZE) on *Corylus avellana* LINN., *Tuberculoides annulatus* on *Quercus robur* (MACKAUER, 1959, p. 169).
- **pannonicus* STARÝ. Europe: Czechoslovakia; Hungary
Trioxyis (*Trioxyis*) *pannonicus* STARÝ, 1960. Bull. Soc. ent. Mulhouse, 93—95, ♀.

Host : *Titanosiphon artemisiae* (KOCK) on *Artemisia campestris* LINN. subsp. *eucampestris* B.C. (STARÝ, 1960).

**parauctus* STARÝ. Europe: Czechoslovakia.

Trioxys (Trioxys) parauctus STARÝ, 1960, Acta Soc. ent. Cechosl., 57, 367—368, ♀♂.

Host: *Aphis* sp.; *Hydaphis* sp. (STARÝ, 1950).

Doubtful species of genus *Trioxys* HALIDAY

atriplicis IVANOV. U.S.S.R.: Ukraine.

Trioxys atriplicis IVANOV, 1925. Izv. ent. phytopath. Uralsk. O-va Lyubit. estestvozn. 1925, (5), p. 6, ♀♂; IVANOV, 1927. Ent. Mitt. Berlin, 16, 429, ♀♂; MACKAUER, 1959. Beitr. Ent., 9, 176 (in list of palaeartic species unknown to the author); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 577.

Host: Aphids on *Atriplex hortensis* LINN. (IVANOV, 1925).

betulae MARSHALL var. *solani* IVANOV. U.S.S.R.: Ukraine

Trioxys betulae var. *solani* IVANOV, 1925. Izv. ent. phytopath. Uralsk O-va Lyubit, estestvozn., 1925, (9), p. 2; MACKAUER, 1959. Beitr. Ent., 9, 176 (in list of palaeartic species unknown to the author); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 577.

Host: An aphid on *Solanum nigrum* LINN. (IVANOV, 1925).

**crudelis* (RONDANI). Europe: Italy.

Mysaphidus crudelis RONDANI, 1848, Bull. Soc. Ent. Ital., 9, 186. ♂.

?*dissolutus* var. β (NEES). Europe: Germany.

Aphidius dissolutus var. β NEES, 1834. Hym. Ichn. aff. Monogr., 1, 23. ♀♂; MARSHALL, 1896. In ANDRÉ, Spec. Hym. Eur. Alg., 5, 614, ♀♂.

„*Trioxys* ? *dissolutus* var. β (NEES ab ESENBECK 1834)“ MACKAUER, 1959. Beitr. Ent., 9, 175 (as a doubtful species of *Trioxys*; NEES' description quoted).

flaviceps SZÉPLIGETI. Europe: Hungary.

Trioxys flaviceps SZÉPLIGETI, 1894. Term. Füzetek, 21, 394, 406. ♀; SZÉPLIGETI, 1894. Gen. Ins., fasc. 22 a—b, p. 190; MACKAUER, 1959. Beitr. Ent., 9, 176 (in list of palaeartic species unknown to the author); NARAYANAN, SUBBA RAO & SHARMA, 1960. Beitr. Ent., 10, 579.

ovalis PROVANCHER. N. America: Canada.

Neuropenes ovalis PROVANCHER, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 153. ♀♂.

?*Trioxys ovalis* (PROVANCHER), SMITH, 1944. Aphidiinae of N. America, p. 103 (as a species unknown to the author).

Trioxys (Trioxys) ovalis (PROVANCHER), MUESEBECK, 1951. U.S. Dept. Agric. Monogr., 2, 97.

Summary

The authors present a revision of their preceding catalogue incorporating scientific work on this subject done since 1957, except the genus *Aphidius* NEES, according to the need of a thorough re-examination of some *Aphidius* dealt with in the authors' earlier paper.

Zusammenfassung

Die Verfasser legen eine Revision ihres vorhergehenden Kataloges vor, die den Veröffentlichungen über dieses Gebiet seit 1957 gewidmet ist. Die Gattung *Aphidius* wurde vorläufig unberücksichtigt gelassen, da es sich als nötig erwiesen hat, eine Überprüfung einiger der in der früheren Arbeit angeführten Formen dieser Gattung vorzunehmen.

Резюме

Авторы представляют поправку своего предыдущего каталога, которая посвящена публикациям в этой области с 1957 года. Род *Aphidius* пока не принимали во внимание, потому что оказалась необходимой проверка некоторых упомянутых в прежней работе форм этого рода.

Bibliographie der paläarktischen Ichneumoniden

HANS SACHTLEBEN

Deutsches Entomologisches Institut
der Deutschen Akademie der Landwirtschaftswissenschaften zu Berlin
Berlin-Friedrichshagen

(Fortsetzung von Seite 242)

Biographien und Nekrologe

Ashmead, William Harris

Assistant Curator, Division of Insects, United States National Museum, Washington
geb. 19. IX. 1855 in Philadelphia,
gest. 17. X. 1908 in Washington.

CRAWFORD, J. C., The entomological writings of William Harris Ashmead, with an Index to the new genera described by him. Proc. ent. Soc. Washington, **10**, 131—156, 1909. — HOWARD, L. O., William Harris Ashmead. Proc. Washington Acad. Sci., **10**, 187—189, 1908. — АНОНИМ, William Harris Ashmead. Proc. ent. Soc. Washington, **10** (1908), 126—131, 1909.

Berthoumieu, Victor

Abbé, Domherr
gest. 1916 in Moulins (Allier), Frankreich.

DUSMET Y ALONSO, J. M., Apuntes para la historia de la entomología de España. Bol. Soc. ent. España, **2**, 176, 1919. — Bull. Soc. ent. France, 1916, p. 309, 1916.

Bignell, George Carter

Seemann, später Standes- und Fürsorgebeamter
geb. 1. III. 1826 in Exeter, Devon, England,
gest. 1. III. 1910 in Saltash, Cornwall, England.

KEYS, J. H., George Carter Bignell. Ent. mon. Mag., **46**, 94—95, 1910. — MORLEY, C., George Carter Bignell. Entomologist, **43**, 128, 1910.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Beiträge zur Entomologie = Contributions to Entomology](#)

Jahr/Year: 1962

Band/Volume: [12](#)

Autor(en)/Author(s): Narayanan E.S., Rao B.R. Subba, Sharma A.K., Starý Petr

Artikel/Article: [Revision of 'A Catalogue of the known Species of the World belonging to the Subfamily Aphidiinae' \(Hymenoptera: Braconidae\). 662-720](#)